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General Business Meeting Announcement:

Saturday: April 29, 2006, 8:30 - 9:00 AM

Location: Grand Ballroom - A & B

All IPEG members are invited to attend the annual IPEG business meeting, at which IPEG members will be updated on business conducted during the past year. Additionally, the new slate of officers will be presented for approval.

The IPEG Meeting is greatly enhanced by the Audience Response System from **Cincinnati Children's Education and Training**

Cincinnati Children's

Education and Training
Digital Classroom

IPEG gratefully acknowledges a generous educational grant in support of this course from our Diamond Level Supporters: Autosuture and Valleylab, divisions of Tyco Healthcare; Ethicon Endo-Surgery, Inc; Karl Storz Endoscopy America, Inc and Stryker Endoscopy

Administrative Office

International Pediatric Endosurgery Group (IPEG)
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Los Angeles, CA 90064 USA
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Joyce Hasper – Executive Director

Hotel Contact Information

Hilton Anatole Hotel (Headquarters and Meeting Location)
2201 Stemmons Freeway, Dallas, TX 75207
Phone: (214) 748-1200

Wyndham Dallas Market Center
2015 Market Center Blvd., Dallas, TX 75207
Phone: (214) 741-7481

Courtyard Market Center
2150 Market Center Blvd., Dallas, TX 75207
Phone: (214) 653-1166

Fairfield Inn & Suites Market Center
2110 Market Center Blvd., Dallas, TX 75207
Phone: (214) 760-8800

Sheraton Suites Market Center
2101 Stemmons Freeway, Dallas, TX 75207
Phone: (214) 747-3000

Registration Hours

Tuesday, April 25, 2006:	12:00 PM - 5:00 PM
Wednesday, April 26, 2006:	6:30 AM - 6:00 PM
Thursday, April 27, 2006:	6:30 AM - 6:00 PM
Friday, April 28, 2006:	7:00 AM - 5:00 PM
Saturday, April 29, 2006:	6:30 AM - 3:00 PM

Exhibit Hall Hours

Wednesday, April 26, 2006: (Opening Reception)	5:00 PM - 6:30 PM
Thursday, April 27, 2006:	10:00 AM - 2:30 PM
Friday, April 28, 2006:	10:00 AM - 2:30 PM
Saturday, April 29, 2006:	10:00 AM - 1:00 PM

Poster Viewing Hours

Thursday, April 27, 2006:	10:00 AM - 6:00 PM
Friday, April 28, 2006:	8:00 AM - 6:00 PM
Saturday, April 29, 2006:	8:30 AM - 11:00 AM

IPEG Past Presidents

Klaas (N) M.A. Bax, MD (2005)
C.K. Yeung, MD (2004)
C. Albanese, MD (2003)
V. Jasonni, MD (2002)
P. Borzi, MD (2001)
S. Rothenberg, MD (2000)
J. Waldschmidt, MD (1999)
H. Lim Tan, MD (1998)
T. Miyano, MD (1997)
S. Rubin, MD (1996)
G. Willital, MD (1995)

IPEG 2006

General Information

Meeting Leaders

Program Chairman: Marc A. Levitt, MD – *Cincinnati, Ohio, USA*
Robotically-Assisted Pediatric Surgery Course Directors:
Michael Irish, MD – *Des Moines, Iowa, USA*
John Meehan, MD – *Iowa City, Iowa, USA*
Pediatric Fellows Course Directors:
Timothy Kane, MD – *Pittsburgh, Pennsylvania, USA*
Holger Till, MD – *Munich, GERMANY*
Colorectal Symposium Chairman:
Jacob Langer, MD – *Toronto, Ontario, CANADA*
Challenging Mystery Cases Panel Chairman:
Carroll Harmon, MD – *Birmingham, Alabama, USA*
SAGES/IPEG Joint Panel: Challenges of Adolescent Bariatric Surgery Chairman:
Thomas Inge, MD – *Cincinnati, Ohio, USA*
Challenges of Innovation Panel Chairman:
Tom Krummel, MD – *Stanford, California, USA*
Challenges of Investigation Panel Chairman:
John Morton, MD – *Palo Alto, California, USA*

Executive Committee:

President: Keith E. Georgeson, MD – *Birmingham, Alabama, USA*
President Elect: Atsuyuki Yamataka, MD – *Tokyo, JAPAN*
Vice President: Jean-Stéphane Valla, MD – *Nice, FRANCE*
Vice President:
George W. Holcomb III, MD – *Kansas City, Missouri,USA*
Secretary:
Marcelo H. Martinez Ferro, MD – *Buenos Aires, ARGENTINA*
Treasurer: Thomas H. Inge, MD – *Cincinnati, Ohio, USA*
Journal Editor : Thom E. Lobe, MD – *Des Moines, Iowa, USA*
Asia/Africa Representative: Behrouz Banieghbal, MD – *Cresta, Johannesburg, REPUBLIC OF SOUTH AFRICA*
European Representative: Gordon A. MacKinlay, MD – *Edinburgh, Scotland, UNITED KINGDOM*
Americas Representative:
Marc A. Levitt, MD – *Cincinatti, Ohio, USA*
Past President: Klaas (N) M.A. Bax, MD

Program Committee

Marc A. Levitt, MD – *Cincinatti, Ohio, USA (*Chairman)*
Craig T. Albanese, MD – *Stanford, California, USA*
Ciro Esposito, MD – *Naples, ITALY*
Keith E. Georgeson, MD – *Birmingham, Alabama, USA*
Munther J. Haddad, MD – *London, UNITED KINGDOM*
Carroll M. Harmon, MD – *Birmingham, Alabama, USA*
George W. Holcomb III, MD – *Kansas City, Missouri, USA*
Thomas H. Inge, MD – *Cincinnati, Ohio, USA*
Thom E. Lobe, MD – *Des Moines, Iowa, USA*
Marcelo H. Martinez Ferro, MD – *Buenos Aires, ARGENTINA*
Girolamo Mattioli, MD – *Genoa, ITALY*
Jürgen Schleef, MD – *Trieste, ITALY*
Henri Steyaert, MD – *Nice, FRANCE*
Jean-Stéphane Valla, MD – *Nice, FRANCE*
David van der Zee, MD – *Utrecht, The NETHERLAND*
John H.T. Waldhausen, MD – *Seattle, Washington, USA*
Mark Wulkan, MD – *Atlanta, Georgia, USA*

Best Basic Science Award

The IPEG Best Basic Science Abstract Award is a cash prize of $1000 presented on Thursday after the Best Basic Science Abstract Presentations. The Award recipient will be selected by an ad hoc selection committee. Please join the IPEG Executive Committee in congratulating the recipient of this award.

IPEG gratefully acknowledges a generous educational grant in support of this award by Ethicon Endo-Surgery, Inc. A company representative will attend and present the award.

IRCAD Award

Thursday, April 27, 2006

As a result of a generous grant provided by Karl Storz Endoscopy, one fellow or resident will be selected to travel to Strasbourg, France to participate in a course in pediatric minimally invasive surgery at the world famous European Institute of Telesurgery. This center, on the campus of the University of Strasbourg, is a state-of-the-art institute for instruction in all aspects of endoscopic surgery. It is now providing a series of courses in pediatric surgery under the direction of Dr. Jacques Marescaux and Dr. Francois Becmeur. A fellow will be selected by the IPEG Past President Committee to attend one pediatric minimally invasive course at the IRCAD facility. The Past President Committee will review all fellow/resident abstracts to determine the best fellow abstract submitted in 2006. This award will be presented at the Karl Storz lecture.

Photo Exhibition

Welcome to our first ever IPEG Photo Exhibition!

Join us in Grand Ballroom C as we marvel at our pediatric colleague's hidden talents. Our submissions range from medical to travel, often telling poignant tales about the human experience. Photos will be on display during the entire meeting until Saturday at 1:30 pm. Authors must take down their photos at this time, as they will not be mailed to them afterwards.

IPEG gratefully acknowledges a generous educational grant in support of this exhibition from our Diamond Level Supporters: Autosuture and Valleylab, divisions of Tyco Healthcare; Ethicon Endo-Surgery, Inc; Karl Storz Endoscopy America, Inc and Stryker Endoscopy

Dr. Marcelo Martinez Ferro brings IPEG to the Andes.

MEETING AT A GLANCE

APRIL 26 - 29, 2006

TUESDAY, APRIL 25, 2006

8:00 AM - 6:00 PM **The 3rd International Symposium on Robotically-Assisted Pediatric Surgery - Lab**
Chairmen: Michael Irish, MD and John Meehan, MD

3:00 PM - 6:45 PM **Pediatric Fellows Course -Advanced Techniques – Lecture**
Course Director: Timothy Kane, MD; **Associate Course Director:** Holger Till, MD

WEDNESDAY, APRIL 26, 2006

8:00 AM - 10:00 AM **SAGES/ACS IBD – General Session to include subjects of interest to IPEG**

10:00 AM - 1:00 PM **Colorectal Symposium – Chairman:** Jacob Langer, MD

1:00 PM - 5:00 PM **Pediatric Fellows Course: Advanced Techniques – Lab**
Course Chairman: Timothy Kane, MD; **Associate Course Chairman:** Holger Till, MD

1:00 PM - 5:00 PM **The 3rd International Symposium on Robotically-Assisted Pediatric Surgery - Lecture**
Chairmen: Michael Irish, MD and John Meehan, MD

THURSDAY, APRIL 27, 2006

7:00 AM - 8:00 AM **IPEG/SAGES Combined Video Breakfast Session: Pediatric Case and Adult Case**
Moderator: Mark Wulkan, MD; Raul Rosenthal, MD

8:00 AM - 8:15 AM **Welcome Address – Speaker:** Keith Georgeson, MD

8:15 AM - 10:30 AM **Panel 1: Challenging Mystery Cases Panel – Chairman:** Carroll Harmon, MD

10:30 AM - 10:45 AM **Break**

10:45 AM - 11:45 AM **SS01: Basic Science – Moderators:** Benno Ure, MD; Agostino Pierro, MD

11:45 AM - 12:00 PM **Best Basic Science Paper Award – Committee:** Benno Ure, MD; George Holcomb, MD; Marcelo Martinez Ferro, MD; David van der Zee, MD; Atysuki Yamataka, MD

12:00 PM - 1:15 PM **Surgical Aspects of Presidential Assassinations Lunch – Speaker:** John Cosgrove, MD

1:15 PM - 2:15 PM **SS02: Urology – Moderators:** Marjorie Arca, MD; John Waldhausen, MD

2:15 PM - 2:45 PM **Karl Storz Lecture: "Teaching the New Generation of Surgeons: Challenges and Opportunites"**
Speaker: Carlos Pellegrini, MD

2:45 PM - 3:00 PM **Break**

3:00 PM - 4:00 PM **SS03: Thoracic plus Miscellaneous Topics – Moderators:** Tamir Keshen, MD; Henri Steyaert, MD

4:00 PM - 5:00 PM **Poster Session #1: Walk with Professors – Moderators:** Peter Borzi, MD; Gordon MacKinlay, MD

5:00 PM - 6:00 PM **Video Session # 1 – Moderators:** Behrouz Banieghbal, MD; Peter Borzi, MD

6:00 PM **Viewing of photo gallery – Photo committee:** Evelyn Georgeson, MS; Valeria Martinez Ferro, MS

FRIDAY, APRIL 28, 2006

7:00 AM - 8:15 AM **Breakfast – Video Session # 2 – Moderators:** Jürgen Schleef, MD; David van der Zee, MD

8:15 AM - 8:45 AM **Presidential Address – "Can IPEG Survive The Mainstreaming of Pediatric Minimally Invasive Surgery?"**
Speaker: Keith E. Georgeson, MD

8:45 AM - 9:45 AM **SS04: Emerging Technology – Moderators:** Duncan Phillips, MD; Michael Irish, MD

9:45 AM - 10:00 AM **Break**

10:00 AM - 11:15 AM **Panel 2: IPEG/SAGES Joint Panel: Challenges of Adolescent Bariatric Surgery – Chairman:** Thomas Inge, MD

11:15 AM - 1:00 PM **IPEG/SAGES dedicated time in the Exhibit Hall with complimentary box lunch provided**

1:00 PM - 3:00 PM **Panel 3: Challenges of Innovation Panel – Moderator:** Tom Krummel, MD

3:00 PM - 3:15 PM **Break**

3:15 PM - 4:15 PM **Poster Session # 2: Walk with Professors – Moderators:** Jürgen Schleef, MD; Mario Riquelme, MD

4:15 PM - 5:15 PM **SS05: Gastroinestinal & Hepatobiliary – Moderators:** Raphael Udassin, MD; Milissa McKee, MD

7:30 PM - 11:00 PM **IPEG/SAGES Main Event – The Taming of the Wild West – Eddie Deen's Ranch**

SATURDAY, APRIL 29, 2006

7:00 AM - 8:30 AM **Breakfast - Video Session # 3: Moderators:** Brian Cameron, MD; John Waldhausen, MD

8:30 AM - 9:00 AM **IPEG General Business Meeting**

9:00 AM - 9:30 AM **Keynote Lecture: "Minimally Invasive Surgery: The Impact of Flexible Endoscopy"**
Speaker: Jeffrey Ponsky, MD

9:30 AM - 10:00 AM **Break**

10:00AM - 12:00 PM **Panel 4: Challenges of Investigation Panel – Chairman:** John Morton, MD

12:00PM - 12:45 PM **SS06: Miscellaneous Topics – Moderators:** Marcela Maria Bailez, MD; Girolamo Mattioli, MD

12:45PM - 1:00 PM **Closing Remarks – Speaker:** Keith E. Georgeson, MD

1:00 PM - 2:00 PM **Farewell Lunch** – Please join Dr. Georgeson, Dr. Yamataka, and the IPEG leadership for an informal luncheon which provides delegates an opportunity to interact with IPEG leadership. Spend time with new and old friends and say farewell.

2006 MEETING OBJECTIVES

- To advance the use of minimal invasive endoscopic surgical procedures in children.
- To explore the value of new minimally invasive surgical concepts and new endoscopic surgical techniques for use in children
- To discuss controversial topics in pediatric endosurgery and the future role of endosurgery in children
- To provide opportunity for younger surgeons to acquire a knowledge of endoscopic surgical procedures in children through exposure to experts in the field
- To provide workshops to disseminate practical skills
- To describe emerging technologies in MIS

ACCREDITATION

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES). SAGES is accredited by the ACCME to provide continuing medical education for physicians. SAGES designates this Continuing Medical Education activity for:

- 6.0 credits for The 3rd International Symposium on robotically-assisted Surgery Lecture and Lab
- 4.0 credits for The 3rd International Symposium on Robotically-Assisted Surgery Lecture only
- 7.75 credits for the Pediatric Surgeons Hands-On Course
- 3.0 credits for the Colorectal Symposium
- 19.75 credits for the Thursday, Friday & Saturday Scientific Session

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) designates this educational activity for a maximum of 30.5 *AMA PRA Category 1 Credit(s)*™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

IPEG 2006 INDUSTRY SUPPORT

The International Pediatric Endosurgery Group gratefully acknowledges generous educational grants in support of the 15th Annual Congress for Endosurgery in Children by the following companies:

DIAMOND LEVEL SUPPORTERS

Autosuture and Valleylab, divisions of Tyco Healthcare

Ethicon Endo-Surgery, Inc.

Karl Storz Endoscopy America, Inc

Stryker Endoscopy

PLATINUM LEVEL SUPPORTER

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InTouch Health, Inc

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Taut, Inc.

PLEASE VISIT THE JOINT SAGES/IPEG EXHIBIT HALL!

EXHIBIT RECEPTION
WEDNESDAY, APRIL 26, AT 5:00 PM

SAVE THE DATE!

IPEG'S 16TH ANNUAL CONGRESS FOR ENDOSURGERY IN CHILDREN
SEPTEMBER, 2007
BUENOS AIRES, ARGENTINA

IPEG/SAGES MESSAGE CENTER & INTERNET MODULE

IPEG/SAGES are pleased to again offer OLC^3, the most technologically advanced trade show communication solution through the IPEG/SAGES Message Center. OLC^3 is an internet based, virtual conference offering solutions for exhibitor and product location, national and international matchmaking and messaging. Designed to improve the trade show experience by fostering communication between attendees, exhibitors and association, OLC^3 assists participants in finding one another and reducing wasted time.

Attendees benefit by being able to anonymously contact exhibitors with inquiries as well as communicate with other attendees and non-attending members with similar interests from their geographic region. For more information please contact the OLC3 representative at the IPEG/SAGES Message Center. To leave messages, go to http://messagecenter.sages.org.

In addition to the Message Center, please leave the following numbers with your offices and families:

On-Site Office Phone: 214-757-2100 **On-Site Office Fax:** 214-757-2101

8:00 AM - 6:00 PM

IPEG gratefully acknowledges a generous unrestricted educational grant in support of this course from:
Intuitive Surgical

Contributions In-Kind: Autosuture and Valleylab, divisions of Tyco Healthcare; Gyrus/ACMI; Karl Storz Endoscopy America, Inc.; Stryker Endoscopy and Taut, Inc.

THE 3RD INTERNATIONAL SYMPOSIUM ON ROBOTICALLY-ASSISTED PEDIATRIC SURGERY – LAB

Course Co-Directors: Michael Irish, MD and John Meehan, MD
Course Faculty: Craig Albanese, MD; Aayed Alqahtani, MD; Garth Ballantyne, MD; Pasquale Casale, MD; James Geiger, MD; Vinh Lam, MD; Samuel Smith, MD; Thom Lobe, MD; Simon Wright, MD

COURSE DESCRIPTION: In recent years, applications of robotic technology have been realized by surgeons of both adult and pediatric patients. Several pediatric centers worldwide have become active in the investigation and utilization of Robotic Surgical Systems and have recognized its benefits, challenges and the future potential of this technology in pediatric patients. We have therefore organized **The 3rd International Symposium on Robotically-Assisted Pediatric Surgery** with a comprehensive didactic session and a "hands-on experience" animal lab to objectively discuss the current robotic experience of pediatric general surgeons and pediatric urologists and to educate both current users and those interested in learning more about pediatric robotically-assisted surgery.

OUTLINE: Participants will be divided into 12 groups of 3 surgeons and assigned a session time. Each will be proctored by one faculty member, each group will have 2 hours at a robotics station. Pigs at each station will be prepared for upper abdominal surgical procedures and/or urologic procedures including (but not limited to): Cholecystectomy, Common bile duct dissection, Choledochojejunostomy, Pyloroplasty,Fundoplication, Jejunojejunostomy, Pyeloplasty, Nephrectomy

Participants will have the opportunity to perform procedures both in the role of the operating (robotic console) surgeon, and as the assistant (bedside) surgeon.

Skills with which the participant should become proficient are:

Bedside Assistant:

– Optimal patient positioning for robotically-assisted procedures
– Optimal trocar placement for robotically-assisted procedures
– Robotic arm docking
– Instrument exchanges
– Assisting with procedures using conventional laparoscopic instruments and technique

Console Surgeon

– System Calibration and set-up
– System customization and settings
– Camera and instrument selection
– Robotic surgical techniques (dissection, tissue manipulation, suturing)

Course Goals & Objectives:

The participants in this course will have the opportunity to:

– learn about and understand the technology of robotically-assisted surgery,
– understand the limitations as well as the present and future applications of surgical robotics,
– learn case-specific operating room set-up, strategies for trocar placement, robot docking, and operative techniques,
– participate in a hands-on, surgeon-proctored, animal lab with a robotic surgical system,
– learn and understand steps toward implementation of a successful robotic surgery program,
– learn about applications of surgical robotics in adult patients

GROUP SCHEDULE

Session#	Time	Robot Station & Groups		
		Station A	Station B	Station C
1	8:00 AM - 10:00 AM	Group 1	Group 2	Group 3
Turn-over	10:00 AM - 10:30 AM			
2	10:30 AM - 12:30 PM	Group 4	Group 5	Group 6
Turn-over	12:30 PM - 1:00 PM			
3	1:00 PM - 3:00 PM	Group 7	Group 8	Group 9
Turn-over	3:00 PM - 3:30 PM			
4	3:30 PM - 5:30 PM	Group 10	Group 11	Group 12

3:00 PM - 6:45 PM

PEDIATRIC FELLOWS COURSE: ADVANCED TECHNIQUES – LECTURE

Location: Sapphire

Course Director: Timothy Kane, MD; Associate Course Director: Holger Till, MD

IPEG gratefully acknowledges a generous unrestricted educational grant in support of this course from Autosuture and Valleylab, divisions of Tyco Healthcare; Intuitive Surgical; Karl Storz Endoscopy America, Inc.; and Stryker Endoscopy

Contributions In-Kind: Autosuture and Valleylab, divisions of Tyco Healthcare; Gyrus ACMI; Intuitive Surgical; Medical Education Technologies, Inc; Karl Storz Endoscopy America, Inc.; Stryker Endoscopy; and Taut, Inc.

COURSE DESCRIPTION:

This one-day course is designed specifically for fellows in pediatric surgery or pediatric surgeons interested in managing more complex pediatric cases using minimally invasive techniques. During the first half of the program, lecturers will present an overview of established approaches in the specialty of pediatric surgery but will focus on their personal strategies in using more advanced techniques in the management of complex or difficult cases. The format is an interactive type in which case presentations are accompanied by group discussion and question and answer sessions. An animate laboratory in which to utilize and demonstrate these techniques comprises the second half of the program. In the laboratory experience, attendees will practice the skills necessary to perform advanced pediatric MIS procedures. After completing the course, attendees will be better prepared to recognize and manage complex situations in pediatric thoracoscopic and laparoscopic surgery. This course will also help identify areas in pediatric MIS in which additional training may be useful.

OBJECTIVES:

- Attendees will understand the elements which comprise advanced pediatric MIS cases
- Surgeons will be able to predict potential problem areas during the performance of advanced pediatric MIS cases
- Surgeons will be able to understand the indications, key steps, and potential problem areas for the following pediatric MIS operations:

Pyloromyotomy – Carroll M. Harmon, MD

Nissen fundoplication and Adrenalectomy – George W. Holcomb III, MD

Hirschsprung's disease – Thomas H. Inge, MD

Aortopexy and Esophagectomy – Timothy Kane, MD

Imperforate Anus – Marc A. Levitt, MD

Esophageal Atresia – Thom E. Lobe, MD

Suture and Knot tying techniques – Gordon A. MacKinlay, MD

Nephrectomy – Azad S. Najmaldin, MD

Pulmonary Lobectomy and Re-do Nissen fundoplicaiton – Steven S. Rothenberg, MD

Splenectomy – Raleigh Thompson, MD

Pancreatectomy and Lung Biopsy Techniques – Mark L. Wulkan, MD

PROGRAM OUTLINE

3:00 PM — **Welcome and Introductions**
Timothy D. Kane, MD: Scope of the course

3:05 - 3:55 PM — **Foregut Session**
Redo Antireflux operations, Short esophagus, Esophageal Atresia
Panelists: Klaas (N) Bax, MD; Keith Georgeson, MD; George Holcomb, MD; Thom Lobe, MD; Gordon A MacKinlay, MD; Steven Rothenberg, MD

3:55 - 4:40 PM — **Thoracic Session**
Lobectomy, Lung Biopsy, Aortopexy, Esophageal strictures
Panelists: Klaas Bax, MD; Thomas Inge, MD; Timothy Kane, MD; Thom Lobe, MD, Gordon A. MacKinlay, MD; Steven Rothenberg, MD; Mark Wulkan, MD

4:40 - 5:25 PM — **Solid Organ Session**
Spleen (giant), Adrenal, Kidney, Pancreas
Panelists: Carroll Harmon, MD; George Holcomb, MD; Andrew Hong, MD; Azad S. Najmaldin, Raleigh Thompson, MD; Mark Wulkan, MD

5:25 - 6:10 PM — **Hindgut Session**
Difficult pull-through, Hirschsprungs disease, Imperforate anus, Urology
Panelists: Keith Georgeson, MD; Jacob Langer, MD; Marc Levitt, MD; Azad S. Najmaldin, MD; Holger Till, MD

6:10 - 6:35 PM — **3-5 interesting cases brought by attendees and presented to the group**

6:35 - 6:45 PM — Final Question and Answer Session

8:00 AM - 10:00 AM

JOINT SAGES/ACS SESSIONS INFLAMMATORY BOWEL DISEASE

General Session to include subjects of interest to IPEG
Location: Chantilly West

Session Chairs: Fabrizio Michelassi, MD, FACS & W. Stephen Eubanks, MD, FACS

COURSE DESCRIPTION:

This two-hour joint ACS and SAGES session is for surgeons in practice or in training with an interest in the current status and management of inflammatory bowel disease. An update on epidemiology, etiology, and genetics of inflammatory bowel disease will initiate the session. A practicing gastroenterologist will then discuss the verification of diagnosis and current principles of medical therapy. Finally, there will be separate lectures on current surgical approaches to Crohn's disease and to chronic ulcerative colitis.

OBJECTIVES:

At the end of this session, the attendee will be:

- Knowledgeable about the current epidemiology and proposed etiologies of inflammatory bowel disease.
- Familiar with current principles of diagnosis and modern medical care of the patient with inflammatory bowel disease.
- Able to describe current surgical approaches in patients with inflammatory bowel disease

	PROGRAM:	FACULTY:
8:00 AM - 8:20 AM	**Epidemiology, Etiology, and Genetics**	Klaus Thaler, MD
8:20 AM - 8:40 AM	**Verification of Diagnosis and Current Medical Therapy**	Kimberly M. Persley, MD
8:40 AM - 9:00 AM	**Current Surgical Treatment of Crohn's Disease**	Kirk Ludwig, MD
9:00 AM - 9:20 AM	**Current Surgical Treatment of Chronic Ulcerative Colitis**	Philip J. Huber, MD
9:20 AM - 10:00 AM	**Panel Discussion**	

10:00 AM - 1:00 PM

COLORECTAL SYMPOSIUM

Location: Metropolitan Ballroom

Chairman: Jacob Langer, MD

Cincinnati Children's
Education and Training
Digital Classroom

OBJECTIVES:

1. To develop an organized approach to complex colorectal problems in children
2. To appreciate the anatomical and physiological alterations that must be considered in dealing with complex colorectal problems in children.
3. To discuss ways in which minimal access surgery can be applied to these problems

COURSE DESCRIPTION:

This will be a case-based symposium dealing with colorectal problems in infants and children. A number of cases will be presented and subsequently discussed by a group of expert panelists. The topics to be covered will include anorectal malformations, Hirschsprung disease, and the spectrum of disorders encompassing idiopathic constipation, motility disorders, and incontinence. Audience participation will be encouraged.

Difficult cases of:

–Hirschsprung's Disease

–Anorectal Malformations

–Idiopathic Constipation/Fecal incontinence

Panelists: Keith Georgeson, MD; Marc Levitt, MD; Luis de la Torre-Mondrágon, MD; Michael Caty, MD; Alberto Peña, MD; John Hutson, MD; Munther Haddad, MD

1:00 PM - 5:00 PM

IPEG gratefully acknowledges a generous unrestricted educational grant in support of this course from Autosuture and Valleylab, divisions of Tyco Healthcare; Intuitive Surgical; Karl Storz Endoscopy America, Inc.; and Stryker Endoscopy

Contributions In-Kind: Autosuture and Valleylab, divisions of Tyco Healthcare; Gyrus ACMI; Intuitive Surgical; Karl Storz Endoscopy America, Inc.; Medical Education Technologies, Inc.; Stryker Endoscopy and Taut, Inc.

PEDIATRIC FELLOWS COURSE: ADVANCED TECHNIQUES – LAB

Course Director: Timothy Kane, MD; Associate Course Director: Holger Till, MD

COURSE DESCRIPTION:

The laboratory session will include operative procedures in the abdomen followed by thoracoscopic procedures. Participants will gain experience with suturing and knot-tying techniques; intestinal anastomoses; lung resection; among many other procedures depending upon time and one's level of prior laparoscopic experience. There will be access to surgical stapling devices, cautery and various vessel sealing devices for use in the course. Finally, an inanimate robotic station will be on hand at which participants can become familiar with this technological approach.

- Laparoscopic procedures – Thoracoscopic procedures

Faculty: Klaas (N) Bax, MD; Keith Georgeson, MD; Carroll Harmon, MD; George Holcomb, MD; Andrew Hong, MD; Thomas Inge, MD; Timothy Kane, MD; Jacob C. Langer, MD; Marc Levitt, MD; Thom Lobe, MD; Gordon A. MacKinlay, MD; Azad S. Najmaldin, MD; Steven Rothenberg, MD; Raleigh Thompson, MD; Holger Till, MD; Mark Wulkan, MD

1:00 PM - 5:00 PM

IPEG gratefully acknowledges a generous unrestricted educational grant in support of this course from: Intuitive Surgical

Contributions In-Kind: Autosuture and Valleylab, divisions of Tyco Healthcare; Gyrus/ACMI; Intuitive Surgical; Karl Storz Endoscopy America, Inc.; Stryker Endoscopy and Taut, Inc.

THE 3RD INT'L SYMPOSIUM ON ROBOTICALLY-ASSISTED PEDIATRIC SURGERY COURSE – LECTURE

Location: Wedgwood

Course Co-Directors: Michael Irish, MD and John Meehan, MD

Course Faculty: Craig Albanese, MD; Aayed Alqahtani, MD; Garth Ballantyne, MD; Pasquale Casale, MD; James Geiger, MD; Vinh Lam, MD; Samuel Smith, MD; Thom Lobe, MD; Simon Wright, MD

Each of the faculty will be asked to present information about their institution's experience as well as providing a case presentation.

Introduction

–Institution
–Length of time the robotic system has been in use
–Number of pediatric surgeons using the system

Institution-specifics in establishing a pediatric robotics program

–Certification
–Obtaining robotic privileges
–Training ancillary staff (nurses/technicians)

Experience

–Number of cases performed
–Types of procedures performed
–Complications

Case Presentation

–Case presentation
–Patient positioning
–Trocar Placement
–Case video

Conclusions

Question & answers

PLEASE VISIT THE JOINT IPEG/SAGES EXHIBIT HALL!
EXHIBIT RECEPTION WEDNESDAY, APRIL 26, AT 5:00 PM

SCIENTIFIC SESSION

THURSDAY, APRIL 27, 2006

DESCRIPTION:

The theme of the 2006 IPEG Meeting is a case oriented approach to challenges in clinical situations with expert panels and audience response with invited faculty who will speak on specific topics. Included:

- Oral & video presentations of abstracts selected by the Program Committee
- Video Abstract Presentations
- Poster Presentation sessions

SCIENTIFIC SESSION OBJECTIVES:

At the end of this session, participants will understand the current and emerging practices and procedures in minimal access surgery and other developing applications. Participants will acquire information which relates to indications, contra-indications, diagnosis, technique, prevention and management of complications, and results of minimal access surgery, endoscopic, and general surgical procedures Participants will recognize the scientific and physiologic basis of minimal access surgery, endoscopy and emerging surgical technology (e.g. robotics)

7:00 AM - 8:00 AM

IPEG/SAGES COMBINED VIDEO BREAKFAST SESSION

Location: Grand Ballroom A & B

Session Chair: Mark Wulkan, MD; Raul J. Rosenthal, MD

IPEG gratefully acknowledges a generous educational grant in support of this session from Karl Storz Endoscopy

DESCRIPTION:

This video session will present an adult general surgical and pediatric surgical video depicting esophageal, diaphragmatic, and hepatobiliary cases. The adult and pediatric surgeons will present technical aspects of the procedures which may be of interest to their pediatric or adult colleagues, respectively. There will be an opportunity for questions and discussion.

OBJECTIVES:

- Describe the similarities and differences between adult and pediatric minimally invasive approaches to the esophagus.
- Describe the similarities and differences between adult and pediatric minimally invasive approaches to the diaphragm.
- Describe the similarities and differences between adult and pediatric minimally invasive approaches to the hepatobiliary system.

PROGRAM:

7:00 AM	**Esophageal Atresia**	Steven Rothenberg, MD
7:05 AM	**Esophagectomy**	W. Scott Melvin, MD
7:10 AM	**Discussion**	
7:20 AM	**Choledochal Cyst Resection**	C.K. Yeung, MD
7:25 AM	**Laparoscopic Common Bile Duct Exploration**	Lee Swanstrom, MD
7:30 AM	**Discussion**	
7:40 AM	**Congenital Diaphragmatic Hernia Repair**	Ron Hirschl, MD
7:45 AM	**Giant Paraesophageal Hernia Repair**	Thomas Watson, MD
7:50 AM	**Discussion**	

8:00 AM - 8:15 AM

WELCOME ADDRESS

Location: Grand Ballroom A & B

Speaker: Keith Georgeson, MD
IPEG President

EVALUATION & CME CREDIT FORMS:

PLEASE COMPLETE THE MEETING EVALUATION FORM AND RETURN TO THE REGISTRATION DESK.
VISIT THE CME KIOSK TO PRINT YOUR CME CREDIT FORM ON-SITE.

8:15 AM - 10:30 AM

PANEL 1: CHALLENGING MYSTERY CASES PANEL

Location: Grand Ballroom A & B

Chairman: Carroll Harmon, MD

COURSE DESCRIPTION:

A case will be presented to the audience, who will be asked questions as the case unfolds. Audience responses will be logged into the computer voting system. Random panel members will be asked how they would handle the decision making moment in the given case. A comparison will be made of the audience response and the expert panelist.

IPEG gratefully acknowledges a generous educational grant in support of this session from our Gold Level Supporter: Gyrus/ACMI

OBJECTIVES:

The educational objective of this session is to learn about current pediatric surgical practice approaches to a wide range of common and uncommon pediatric surgical diseases.

Cincinnati Children's
Education and Training Digital Classroom

PROGRAM:	FACULTY:
Thorax	Steven Rothenberg, MD; David Van der Zee, MD
Foregut	Azad Najmaldin, MD; George Holcomb, MD; Klaas Bax, MD
Chest Wall	Rob Kelly, MD; Richard Azizkhan, MD; Klaus Schaarschmidt, MD
Hepatobiliary	Han Min Lee, MD; CK Yeung, MD; Marcelo Martinez Ferro, MD
Abdominal Wall	Felix Schier, MD; Philippe Montupet, MD; Thom Lobe, MD
Appendicitis	Ciro Esposito, MD; Behrouz Banieghbal, MD; Allen Browne, MD

10:30 AM - 10:45 AM

BREAK – Location: Grand Ballroom C

IPEG gratefully acknowledges support of all coffee breaks by our Bronze Level Supporters: Berchtold, InTouch Health, Inc, Medical Education Technologies, Inc and Taut, Inc

10:45 AM - 11:45 AM

SS01: BASIC SCIENCE SESSION

Location: Grand Ballroom A & B

Moderators: Benno Ure, MD; Agostino Pierro, MD

IPEG gratefully acknowledges a generous educational grant in support of this session by Ethicon Endo-Surgery, Inc.

S001 FETOSCOPY UNDER GAS AMNIODISTENSION (PART 2): EXPERIMENTAL INFLUENCE OF HELIUM VERSUS NITROUS OXIDE ON FETAL GOATS W Chu, Y Shi, H K Till, PhD, C K Yeung, MD, W. F Bower, PhD, The Chinese University of Hong Kong

S002 EFFECTIVENESS OF FETOSCOPIC ELECTROCAUTRIZATION IN DIFFERENT MEDIA: AIR, PERFLUOROCARBON, GLYCERIN, GLYCIN, ELECTROLYTE SOLUTION Holger Till, MD, Roman Metzger, MD, Verena J Herrmanns, MD, Oliver J Muensterer, MD, Departments of Pediatric Surgery, University of Munich and Leipzig

S003 EASY KNOTTING TECHNIQUES Kallappan Senthil, MS, Manickam Ramalingam, MS, Ganapathy Pai, MS, Krishnasamy Selvarajan, MS, K.G.Hospital and Post Graduate Institute

S004 IMPROVING TACTILE SENSATION IN MINIMALLY INVASIVE PEDIATRIC SURGERY Kevin P Moriarity, MD, David Tashjian, MD, George Wadie, MD, Michael V Tirabassi, MD, Baystate Children's Hospital, Tufts University School of Medicine

S005 EXPOSURE TO CARBON DIOXIDE AND HELIUM REDUCES IN VITRO PROLIFERATION OF PEDIATRIC TUMOR CELLS Akihiro Shimotakahara, PhD, Annika I Schmidt, MD, Benno M Ure, PhD, Sylvia Glueer, PhD, Catherine Bangen, Gertrud Vieten, DO, Joachim F Kuebler, MD, Marc Reismann, MD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

S006 ACIDIFICATION DURING CO2 PNEUMOPERITONEUM IS RESTRICTED TO THE GAS-EXPOSED PERITONEAL SURFACE: EFFECTS OF PRESSURE, AIR FLOW AND ADITIONAL INTRAPERITONEAL FLUIDS. Natalie K Jesch, MD, Joachim F Kuebler, MD, Gertrud Vieten, PhD, Martin L Metzelder, MD, Benno M Ure, MD, Akihiro Shimotakahara, PhD, Department of Pediatric Surgery, Medical University Hannover, Hannover, Germany

S007 LAPAROSCOPICALLY INVESTIGATED MORPHOLOGY OF THE INGUINAL CANAL: FOR EVIDENCE-BASED MANAGEMENT OF INGUINAL HERNIA AND HYDROCELE IN PEDIATRC PATIENTS. Fumiko Yoshida, MD, Masao Endo, MD, Department of surgery, Tokyo Metropolitan Kiyose Children's Hospital

S042 THERAPEUTIC LAPAROSCOPY FOR ABDOMINAL TRAUMA IN CHILDREN Jean-François Colombani, MD, Jeff Valla, PhD, Henri Steyaert, MD, François Varlet, MD, Fondation Lenval, Nice, CHU Hôpital Nord, St Etienne,CHU Zobda Kitman, Fort de France

11:45 AM - 12:00 PM

BEST BASIC SCIENCE PAPER AWARD

Presentation Location: Grand Ballroom A & B

Committee: Benno Ure, MD; George Holcomb, MD; Marcelo Martinez Ferro, MD; David van der Zee, MD; Atysuki Yamataka, MD

12:00 PM - 1:15 PM

SURGICAL ASPECTS OF PRESIDENTIAL ASSASSINATIONS LUNCH

Location: Grand Ballroom A & B – **Tickets required for entry**

Speaker: John Cosgrove, MD

Dr. John Morgan Cosgrove, Senior Attending Surgeon at the North Shore Long Island Jewish Health Care System will speak on surgical aspects of presidential health care with particular emphasis on assassinations and the would be assassination of President Ronald Reagan. The talk will concentrate on medical and surgical decision-making and there will be minimal emphasis on ballistics. There will be some mention of the measures taken to protect presidents including the role of The Secret Service and local health care providers. It is hoped that the talk will allow the audience to understand the problems with the "V.I.P. Syndrome" and how the White House Physician's Office played an integral role historically to transform the care of the President.

1:15 PM - 2:15 PM

SS02: UROLOGY

Location: Grand Ballroom A & B

IPEG gratefully acknowledges a generous educational grant in support of this session by Stryker Endoscopy

Moderators: Marjorie Arca, MD; John Waldhausen, MD

S008 LAPAROSCOPIC EVALUATION OF TRUE HERMAPHRODITES K Parbhoo, MD, B Banieghbal, MD, CH Baragwanath Hospital, University of the Witwatersrand, Johannesburg

S009 LAPAROSCOPIC PYELOPLASTY IN THE PEDIATRIC POPULATION Israel Franco, MD, Lori Landau, MD, Paul Zelkovic, MD, Pediatric Urology Associates PC and New York Medical College, Valhalla, NY 10595

S010 LAPAROSCOPIC PYELOPLASTY IN CHILDREN – LEARNING CURVE VERSUS TYPE OF TECHNIQUE Ganapathy Pai, MS, Kallappan Senthil, MS, Manickam Ramalingam, MS, Krishnasamy Selvarajan, MS, K.G.Hospital and Post Graduate Institute, Coimbatore, India

S011 VIDEO-ASSISTED PYELOPLASTY, THE FIRST 59 PROCEDURES. Edgar Morales-Juvera, PhD, Jose Antonio Ramirez V., PhD, Elena Aguilar, PhD, Hospital of Pediatrics, National Medical Center, XXI, IMSS

S012 TRANSPERITONEAL LAPAROSCOPIC VERSUS OPEN PYELOPLASTY IN INFANTS AND CHILDREN T Ernesto Figueroa, MD, Ricardo Gonzalez, MD, Lisandro A Piaggio, MD, Paul H Noh, MD, A I duPont Hospital for Children, Wilmington, Delaware

S013 THE DEFLUX PROCEDURE REDUCES THE INCIDENCE OF URINARY TRACT INFECTIONS IN PATIENTS WITH VESICOURETERIC REFLUX Kevin P Moriarty, MD, Richard A Courtney, MD, Michael V Tirabassi, MD, George M Wadie, MD, Baystate Medical Center Children's Hospital, Division of Pediatric Surgery, Tufts University School of Medicine, Springfield, Massashusetts, USA

S014 LAPAROSCOPIC LYMPHATIC SPARING VARICOCELECTOMY IN THE ADOLESCENT MALE: IS IT AS EFFECTIVE AS MICROSCOPIC VARICOCELECTOMY? Israel Franco, MD, E F Reda, MD, Pediatric Urology Associates and Section of Pediatric Urology at New York Medical College , Valhalla, NY

S015 DYE-ASSISTED LYMPH VESSELS' SPARING LAPAROSCOPIC VARICOCELECTOMY MAREK KROLAK, PhD, PIOTR CZAUDERNA, PhD, ANDRZEJ GOLEBIEWSKI, PhD, Medical University of Gdansk, Department of Pediatric Surgery and Urology

S016 LONG TERM RESULTS AFTER LAPAROSCOPIC INGUINAL HERNIA REPAIR IN IN CHILDREN Micha Bahr, MD, Konrad K Richter, MD, Christian Baur, Department of Paediatric Surgery, University Medical Centre Friedrich-Schiller-University Jena

S017 LAPAROSCOPIC INGUINAL HERNIA REPAIR IN CHILDREN: A NEW TECHNIQUE (211 PATIENTS) Becmeur Francois, MD, Dimitriu Carla, MD, Moog Raphael, MD, Mefat Laure, MD, Kauffmann Isabelle, MD, Talon-Lacreuse Isabelle, MD, Hôpitaux Universitaires de Strasbourg, Department of Paediatric surgery

S018 LAPAROSCOPIC EVALUATION FOR CONTRALATERAL PATENT PROCESSUS VAGINALIS IN CHILDREN WITH UNILATERAL INGUINAL HERNIA Patricia A Valusek, MD, Troy L Spilde, MD, Shawn D St. Peter, MD, Daniel J Ostlie, MD, Walter M Morgan III, MD, John W Brock III, MD, George W Holcomb III, MD, Children's Mercy Hospital

S019 LAPAROSCOPY-ASSISTED ONE-STAGE TRANS-SCROTAL ORCHIOPEXY FOR ALL TYPES OF MALDESCENDED TESTES Masao Endo, MD, Toshihiko Watanabe, MD, Miwako Nakano, MD, Dpartment of Pediatric Surgery, Saitama City Hospital

2:15 PM - 2:45 PM

KARL STORZ LECTURE – TEACHING THE NEW GENERATION OF SURGEONS: CHALLENGES AND OPPORTUNITIES

IPEG gratefully acknowledges a generous educational grant in support of the Karl Storz Lecture from Karl Storz Endoscopy

Location: Grand Ballroom A & B

Speaker: Carlos Pellegrini, MD

Carlos A. Pellegrini received his M.D. in 1971 from the University of Rosario Medical School in Argentina. After training in general surgery in Argentina, he completed a second residency at the University of Chicago. In 1979 he was appointed to the faculty of the University of California San Francisco where he developed and directed a Center for GI motility. An active gastrointestinal surgeon at UCSF he was recognized on several occasions by residents and students for his teaching. In 1993 he became Chairman of the Department of Surgery at the University of Washington in Seattle. In 1996, in recognition for his role in the strengthening of all clinical, teaching, and research programs of the Department he became the first holder of the Henry N. Harkins Endowed Chair, honoring the first Chairman of the Department of Surgery at the University of Washington. Dr. Pellegrini is a world leader in minimally invasive gastrointestinal surgery and a pioneer in the development of videoendoscopy for the surgical treatment of gastroesophageal reflux disease and esophageal motility disorders, particularly achalasia. At the University of Washington he developed the Center for Videoendoscopic Surgery, the Swallowing Center and the Institute for Surgical and Interventional Simulation. In the area of medical education he has been a major contributor to the fundamental reform of residency work hours. Currently, he is President of the American Surgical Association, a Regent of the American College of Surgeons, and a Director of the American Board of Surgery. He is also Chair of the Digestive Disease Week Council. Dr. Pellegrini serves on several editorial boards, and publishes regularly in the field of minimally invasive surgery for upper gastrointestinal diseases, esophageal cancer, and related areas, as well as the field of training and new technologies for preparing surgeons in this field. His bibliography lists more than 300 articles, chapters, editorials, and books, as well as 11 surgical videos and movies.

2:45 PM - 3:00 PM

BREAK– Location: Grand Ballroom C

IPEG gratefully acknowledges support of all coffee breaks by our Bronze Level Supporters: Berchtold, InTouch Health, Inc, Medical Education Technologies, Inc and Taut, Inc

3:00 PM - 4:00 PM

SS03: THORACIC PLUS MISCELLANEOUS TOPICS

Location: Grand Ballroom A & B

IPEG gratefully acknowledges a generous educational grant in support of this session by Intuitive Surgical

Moderators: Tamir Keshen MD; Henri Steyaert, MD

S020 THE STAB WOUND ACCESS TECHNIQUE (SWAT) IN PEDIATRIC LAPAROSCOPIC SURGERY Benjamin J Rogoway, MD, James M DeCou, MD, DeVos Children's Hospital

S021 LESSONS LEARNED FROM MAJOR ENTRY RELATED COMPLICATIONS DURING LAPAROSCOPY Henri Steyaert, MD, Jean-François Colombani, MD, Ricardo Guana, MD, Jeff Valla, PhD, Lenval fundation for Children Nice and CHU Fort de France

S022 SUCCESSFUL THORACOSCOPIC REPAIR OF CDH IN NEWBORNS Thomas T Sato, MD, Kathy Curro, RN, Adam B Goldin, MD, Terrance Derks, BS, Marjorie J Arca, MD, David M Gourlay, MD, Children's Hospital of Wisconsin and Medical College of Wisconsin

S023 THORACOSCOPY AND TREATMENT OF COMPLEX SCOLIOSIS Alain Dimeglio, PhD, Tayeb Bentahar, MD, Hossein Allal, MD, Pediatric Videosurgery Division and Department of Orthopedic Pediatric Surgery, University of Montpellier, Lapeyronie Hospital

S024 THE INTEREST OF THORACOSCOPY IN LONG GAP ESOPHAGEAL ATRESIA Hossein Allal, MD, Manuel Lopez, MD, Nicolas Kalfa, MD, Dominique Forgues, MD, Marie Pierre Guibal, MD, RB Galifer, PhD, Pediatric Videosurgery Division and Department of Pediatric Surgery, University of Montpellier, Lapeyronie Hospital

S025 THORACOSCOPIC MANAGEMENT OF PURE OESOPHAGEAL ATRESIA (TYPE A) Stephen R Potts, MD, Fraser D Munro, MD, Alistair C Dick, MD, Girish Jawaheer, MD, Gordon A MacKinlay, MD, The Royal Hospital for Sick Children, Edinburgh, The Royal Belfast Hospital for Sick Children and Birmingham Children's Hospital

S026 SUBPECTORAL CO2 INSUFFLATION A NEW HYBRID TECHNIQUE FOR MINIMAL ACCESS REPAIR OF SIGNIFICANT PECTUS CARINATUM IN ADOLESCENTS Frank Schlesinger, MD, Michael Lempe, MD, Andreas Kolberg-Schwerdt, MD, Klaus Schaarschmidt, MD, Helios Centre of Pediatric and Adolescent Surgery Berlin-Buch

S027 THORACOSCOPY AND SOLID TUMORS IN CHILDREN. MULTICENTRIC STUDY Varlet Francois, Reinberg Olivier, Podevin Guillaume, Lefebvre Francis, Lavrand Frederic, Becmeur Francois, Dyon Jean-Francois, Piolat Christian, Lardy Hubert, Guye Emmanuelle, Marteau Marion, Bawab Fariz, CHU Saint-Etienne - Chirurgie Pediatrique - Professor F.Varlet

S028 EARLY EXPERIENCE OF PAEDIATRIC THORACOSCOPIC LOBECTOMY IN THE UK Robin G Garrett-Cox, MD, Fraser D Munro, MD, Adil Aslam, MD, Gordon A Mackinlay, MD, Royal Hospital for Sick Children, Edinburgh and Addenbrookes Hospital, Cambridge

S029 ENDOSCOPIC EXCISION OF BENIGN FOREHEAD MASSES: A NOVEL APPROACH FOR PEDIATRIC GENERAL SURGEONS Craig T Albanese, MD, H. Peter Lorenz, MD, Sanjeev Dutta, MD, Lucile Packard Children's Hospital, Stanford University

S030 OUTCOMES FOLLOWING LAPAROSCOPIC SURGERY IN YOUNG CHILDREN WITH SEVERE CYANOTIC CONGENITAL HEART DISEASE Bethany Slater, MD, Craig T Albanese, BA, Claire Abrajano, RN, Chandra Ramamoorthy, MD, Shawn Rangel, MD, Stanford University Medical Center and Lucile Packard Children's hospital

S046 PERIOPERATIVE HYPNOSIS REDUCES HOSPITALIZATION IN PATIENTS UNDERGOING THE NUSS PROCEDURE FOR PECTUS EXCAVATUM Thom E Lobe, MD, Blank Children's Hospital

4:00 PM - 5:00 PM

POSTER SESSION # 1 – WALK WITH PROFESSORS

Location: Grand Ballroom D & E

IPEG gratefully acknowledges a generous educational grant in support of this poster session from our Bronze Level Supporters: Berchtold, InTouch Health, Inc., Medical Education Technologies, Inc. and Taut, Inc.

Moderators: Peter Borzi MD; Gordon A. MacKinlay, MD

Poster Tour 001 - PRIOR OPERATION AND FEASIBILITY OF LAPAROSCOPIC SURGERY IN CHILDREN: A PROSPECTIVE STUDY Benno M Ure, PhD, Martin L Metzelder, MD, Natalie K Jesch, MD, Anasthasia Dick, Joachim F Kuebler, MD, Claus Petersen, PhD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

Poster Tour 002 - ENDOSCOPIC SURGERY IN NEONATE AND INFANT: 261 CASE EXPERIENCE long Li, MD, xue-lai Liu, MD, jun Zhang, MD, capital institute of pediatrics

Poster Tour 003 - 25 YEARS EXPERIENCE OF THORACOSCOPIC SURGERY (VATS) IN CHILDHOOD IN OUR DEPARTEMENT OF PEDIATRIC SURGERY Lutz Meyer-Jungh‰nel, MD, J¸rgen Waldschmidt, MD, Henning Giest, MD, Pediatric surgery, St. Joseph Children¥s hospital, Berlin, Germany

Poster Tour 004 - THORACOSCOPIC REPAIR FOR DIAPHRAGMATIC DEFECTS: INSTITUTIONAL EXPERIENCE. Ramesh, Kadaba Srimurthy, Narendra Babu, Indira Gandhi Institute of Child Health and Bangalore Hospital,

Poster Tour 005 - ENDOSURGICAL TREATMENT OF DUODENAL OBSTRUCTION IN INFANTS Francisco Jose Berchi Garcia, MD, Indalecio Cano, MD, Araceli Garcia, MD, HUMI 12 de Octubre, University Complutense, Pediatric Surgery Dept.

Poster Tour 006 - ROBOTIC RESECTION OF MEDIASTINAL MASSES IN CHILDREN John Lawrence, MD, Anthony Sandler, MD, Laura Phearman, RN, John J Meehan, MD, Paula Francis, RN, Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

Poster Tour 007 - HOSPITAL TYPE AND INNOVATION IN PEDIATRIC SURGERY: THE CASE OF LAPAROSCOPIC APPENDECTOMY Deena J Chisolm, PhD, Cedrick V Pritchett, BS, Benedict C Nwomeh, MD, Columbus Children's Hospital, Columbus, OH

Poster Tour 008 - HASSONS VERSUS VERES IN PEDIATRIC LAPAROSCOPIC TROCAR RELATED INJURIES Cornelia van Tuil, MD, Amulya K. Saxena, MD, Pediatric Surgical University Medical Centre, M¸nster Germany and *Department of Pediatric Surgery, Medical University of Graz, Austria

Poster Tour 009 - LAPAROSCOCPIC URETERO-URETEROSTOMY IN INFANTS AND CHILDREN Ricardo Gonzalez, MD, Lisandro A Piaggio, MD, A I duPont Hospital for Children, Wilmington, Delaware, USA

Poster Tour 010 - MINIMALLY INVASIVE MANAGEMENT OF POST-TRAUMATIC BILE LEAKS John R Gosche, MD, Guy F Brisseau, MD, Scott C Boulanger, MD, Division of Pediatric Surgery, University of Mississippi Medical Center, Jackson, MS, USA and Division of Pediatric Surgery, Dalhousie University, Nova Scotia, Canada

Poster Tour 011 - ANALYSIS OF HERNIA RECURRENCES AFTER LAPAROSCOPIC HERNIA REPAIR IN CHILDREN Celeste Hollands, MD, University at Buffalo, Women and Children's Hospital of Buffalo

EVALUATION & CME CREDIT FORMS:

PLEASE COMPLETE THE MEETING EVALUATION FORM AND RETURN TO THE REGISTRATION DESK.
VISIT THE CME KIOSK TO PRINT YOUR CME CREDIT FORM ON-SITE.

SCIENTIFIC SESSION

5:00 PM - 6:00 PM

VIDEO SESSION # 1

Location: Grand Ballroom A & B

IPEG gratefully acknowledges support of this video session by our Gold Level Supporter: Gyrus/ACMI

Moderators: Behrouz Banieghbal, MD; Peter Borzi MD

V001 SMA SYNDROME WITH DUODENAL PULSION DIVERTICULA: ROBOT ASSISTED DIVERTICULECTOMY AND DUODENO-JEJUNOSTOMY RAVINDRA K VEGUNTA, MD, RICHARD H PEARL, MD,UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE AT PEORIA and CHILDREN'S HOSPITAL OF ILLINOIS

V002 DA VINCI ASSISTED AORTOPEXY FOR TRACHEOMALACIA Samuel D Smith, MD, Richard J Jackson, MD, Brendan T Campbell, MD, Cristiano Boneti, MD, Evan R Kokoska, MD,Arkansas Childrens Hospital

V003 NEONATAL THORACOSCOPIC DIAPHRAGMATIC HERNIA REPAIR Karen Diefenbach, MD, Milissa McKee, MD,Yale University School of Medicine

V004 ROBOTIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA John J Meehan, MD, John Lawrence, MD, Anthony Sandler, None, Laura Phearman, RN, Paula Francis, RN,Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

V005 THORACOSCOPIC RIGHT MIDDLE AND LOWER LOBECTOMY FOR PULMONARY SEQUESTRATION Shawn D St. Peter, MD, Daniel J Ostlie, MD,Children's Mercy Hospital and Clinics

V006 ROBOTIC RESECTION OF A CONGENITAL CYSTIC ADENOMATOID Anthony Sandler, MD, Paula Francis, RN, Laura Phearman, RN, John Lawrence, MD, John J Meehan, MD,Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

V007 LAPAROSCOPIC PARTIAL SPLENECTOMY Pramod S Puligandla, MD, Wendy Su, MD, Thomas Hui, MD,The Montreal Children's Hospital

V008 ROBOTIC-ASSISTED THYROID LOBECTOMY Thom E Lobe, MD, Simon K Wright, None,Blank Children's Hospital

6:00 PM

VIEWING OF PHOTO GALLERY

Photo Committee: Evelyn Georgeson, MS; Valeria Martinez Ferro, MS

7:00 AM - 8:15 AM

BREAKFAST – VIDEO SESSION # 2

Location: Grand Ballroom A & B

IPEG gratefully acknowledges support of this video session by our Gold Level Supporter: Gyrus/ACMI

Moderators: Jürgen Schleef, MD; David van der Zee, MD

V009 LAPAROSCOPICALLY ASSISTED ANORECTAL PULL-THROUGH FOR HIGH IMPERFORATE ANUS: REFINEMENTS OF A TECHNIQUE Keith E Georgeson, MD, Philip K Frykman, MD,Division of Pediatric Surgery, Cedars-Sinai Medical Center; and Departments of Surgery and Pediatrics, UCLA; Division of Pediatric Surgery, University of Alabama School of Medicine at Birmingham.

V010 LAPAROSCOPIC CONTINENT APPENDICOCECOSTOMY INTO A CONCEALED STOMA: OPTIMIZING COSMESIS AND CONTINENCE T Ernesto Figueroa, MD, Ricardo Gonzalez, None, Lisandro A Piaggio, MD,A I DuPont Hospital for Children, Wilmington, Delaware, USA

V011 EFFICACY OF THE ULTRASONICALLY ACTIVATED SHEARS IN LAPAROSCOPIC TOTAL COLECTOMY Luciano Mastroianni, MD, Ascanio Martino, MD, Giovanni Cobellis, PhD, Alba Cruccetti, PhD,Pediatric Surgery Unit, Salesi Children's Hospital – Ancona

V012 SECONDARY ESOPHAGEAL ATRESIA REPAIR Mark L Wulkan, MD,Emory University School of Medicine/Children's Healthcare of Atlanta

V013 THORACOSCOPIC RESECTION OF A LARGE TRACHEAL POUCH FOLLOWING TEF REPAIR AS AN INFANT Steven S Rothenberg, MD, Scott Sagel, MD,The Mother and Child Hospital at P/SL , The Denver Children's Hospital

V014 DOUBLE AORTIC ARCH DIVISION WITH HARMONIC SCALPEL IN THE COURSE OF A THORACOSCOPIC TEF REPAIR Marcelo Martinez-Ferro, MD,Department of Pediatric Surgery. "Fundacion Hospitalaria" Children's Hospital. Buenos Aires. Argentina

V015 LAPAROSCOPIC URETERO-URETEROSTOMY FOR DUPLICATION ANOMALIES OF THE URINARY TRACT Lisandro A Piaggio, MD, Ricardo Gonzalez, None,A I duPont Hospital for Children, Wilmington, Delaware, USA

V016 ROBOTIC REPAIR OF A DUODENAL ATRESIA IN A 1 DAY OLD FEMALE Anthony Sandler, None, Paula Francis, RN, Laura Phearman, RN, John Lawrence, MD, John J Meehan, MD,Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

V017 LAPAROSCOPIC SLEEVE GASTRECTOMY AS A DEFINITIVE OPERATION FOR THE TREATMENT OF MORBID OBESITY Raul J Rosenthal, MD,Cleveland Clinic Florida

V018 BARIATRIC SURGICAL DANGER ZONES AND HOW TO AVOID THEM Victor Garcia, MD, Marc Levitt, MD, Thomas Inge, MD, Maria Alonso, MD,Cincinnati Children's Hospital Medical Center

8:15 AM - 8:45 AM

PRESIDENTIAL ADDRESS – CAN IPEG SURVIVE THE MAINSTREAMING OF PEDIATRIC MINIMALLY INVASIVE SURGERY?

Location: Grand Ballroom A & B

Speaker: Keith E. Georgeson, MD,– IPEG President

Dr. Keith Georgeson is a native Californian whose early years were spent on his family's cotton farm in central California. He graduated from Loma Linda University School of Medicine and completed his residency in pediatric surgery at The Children's Hospital of Michigan. After finishing his residency, he returned to southern California on the faculty at Loma Linda University. In 1985 he moved to Birmingham, Alabama where he now serves as the Joseph M. Farley Professor of Surgery at the University of Alabama School of Medicine and Chief of Pediatric Surgery at the Children's Hospital of Alabama.

Dr. Georgeson has a focused interest in gastrointestinal surgery. Over the last 15 years he has promoted the advantages of minimally invasive surgery for children. He was a pioneer in developing the laparoscopic technique for fundoplication in infants and children and also designed the first commercial balloon gastrostomy button (MIC KEY). He has introduced several popular pediatric endoscopic surgical procedures including a laparoscopic assisted transanal endorectal pull-through for Hirschsprung's disease, a laparoscopic assisted pull-through for anorectal malformations and the U-stitch gastrostomy. He is currently the President of the International Pediatric Endosurgery Group, a Director of the American Board of Surgery and the Chairman of the Pediatric Surgery Board of the American Board of Surgery.

Dr. Georgeson and his wife, Evelyn, have three adult daughters. Keith and Evelyn enjoy racquet sports and water and snow skiing. Evelyn is a professional photographer.

8:45 AM - 9:45 AM

SS04: EMERGING TECHNOLOGY

Moderators: Duncan Phillips, MD; Michael Irish, MD

IPEG gratefully acknowledges a generous educational grant in support of this session by Karl Storz Endoscopy America, Inc.

ET001 A NOVEL, RAPID, AND ACCURATE METHOD FOR DETERMINING THE LEVEL OF AGANGLIONOSIS IN HIRSCHSPRUNG'S DISEASE USING SPECTAL BIOIMAGING Philip K Frykman MD, Mark Gaon MD, Erik Lindsley PhD, Juan Lechago MD, Alice P Chung MD, Yizhi Xiong PhD, Daniel L Farkas PhD, Division of Pediatric Surgery, Minimally Invasive Surgical Technologies Institute, Departments of Surgery and Pathology at Cedars-Sinai Medical Center, Los Angeles

ET002 ELECTROGASTROGRAMS AND GASTRIC ELECTRICAL STIMULATION FOR CHRONIC GASTROPARESIS IN CHILDREN, Saleem Islam MD,John R Gosche MD,Laura R Vick MD,Thomas Abel MD, University of Mississippi Medical Center

ET003 A NOVEL NITINOL PYLORIC GRASPING DEVICE FOR LAPAROSCOPIC PYLOROMYOTOMY., Tiffany Card BS,Nicole Kahn BS,Craig Milroy MS,Sanjeev Dutta MD, Lucile Packard Children's Hospital, Stanford University Medical Center

ET004 MINI OPERATING LAPAROSCOPE FOR THORACOSCOPIC SYMPATHECTOMY IN CHILDREN, Asher Pressman MD,Dan Yardeni MD,Bassem Kawar MD,Leonardo Siplovitch MD, Pediatric Surgery, Emek Medical Center, Afula, Israel.

ET005 A NEW ELECTROSURGERY MODALITY: PRE-CLINICAL TESTING, Michael V Tirabassi MD,Carolanne Lovewell,Casey Ladtkow,Jason Craig,Kevin P Moriarty MD, Baystate Children's Hospital

ET006 USE OF NON-ABSORBABLE POLYMER LOCKING CLIPS FOR AIRWAY SEALING IN COMPLEX PEDIATRIC THORACOSCOPIC SURGERY, Marcelo Martinez-Ferro MD,Horacio Bignon MD, Department of Pediatric Surgery. ?Fundacion Hospitalaria? Children?s Hospital. Buenos Aires. Argentina.

ET007 HEMOSTATIC OPTIONS OF LIVER BIOPSY SITES IN ONCOLOGICAL PATIENTS WITH COAGULATION DISORDERS, Cornelia van Tuil MD,Amulya K. Saxena MD, Pediatric Surgical University Medical Centre, Münster Germany and *Department of Pediatric Surgery, Medical University of Graz, Austria

ET008 MANAGEMENT OF PEDIATRIC ESOPHAGEAL STRICTURES WITH POLIFLEX STENTS, Gonca Topuzlu Tekant MD,Mehmet Elicevik MD,Nuvit Sarimurat MD,Osman F Senyuz MD,Ergun Erdogan MD, Istanbul University, Cerrahpasa Medical Faculty, Dept of Pediatric Surgery, Istanbul, Turkey.

ET009 CLINICAL APPLICATION AND DIAGNOSTIC YIELD OF WIRELESS CAPSULE ENDOSCOPY IN CHILDREN, Brice Antao MD,Jon Bishop MD,Rang Shawis MD,Mike Thomson MD, Paediatric Surgical Unit and Centre for Paediatric Gastroenterology, Sheffield Children's Hospital, Western Bank, Sheffield, UK

ET010 EXPERIENCE WITH WEB BASED LIVE TELESURGERY FOR MINIMALLY INVASIVE PROCEDURES IN CHILDREN AS AN EDUCATIONAL TOOL, Steven S Rothenberg MD,George W Holcomb II MD,Thane Blinman MD,Keith Georgeson MD,Mike Irish MD, The Mother and Child Hospital at P/SL

9:45 AM - 10:00 AM

BREAK – Location: Grand Ballroom C

IPEG gratefully acknowledges support of all coffee breaks by our Bronze Level Supporters: Berchtold, InTouch Health, Inc, Medical Education Technologies, Inc and Taut, Inc

10:00 AM - 11:15 AM

PANEL 2: IPEG/SAGES JOINT PANEL: CHALLENGES OF ADOLESCENT BARIATRIC SURGERY

SAGES gratefully acknowledges educational grants in support of this course from Ethicon Endo-Surgery, Inc., Karl Storz Endoscopy and Stryker Endoscopy

Cincinnati Children's
Education and Training Digital Classroom

Chairman: Thomas Inge, MD

SESSION DESCRIPTION: This session will provide the participant with an introduction to current challenges in the surgical care of morbidly adolescents primarily using case-based learning scenarios. Over the past several decades, the obesity epidemic has also reached our youth and current estimates suggest that as many as 2-3% of teenage girls have a BMI > 40 kg/m2. Some of these individuals are developing obesity related health problems. The context and criteria for patient selection is necessarily distinct from that used for adult patients and will be reviewed. Individual surgical procedures which may be applicable to the adolescent and outcomes to be expected will be presented. Important considerations for avoidance of technical (especially intraoperative) complications when managing super-obese adolescents will be discussed. Finally, several clinical vignettes will be used to highlight post-operative challenges when providing bariatric care to this unique age group.

OBJECTIVES: At the conclusion of this seminar, the participant will

- Understand the rationale for use of health-based, conservative operative indications in teenage patients
- Understand key issues impacting the decision for use of specific weight loss procedures in teenagers

- Be familiar with the technical challenges that the bariatric surgeon will face when caring for super-obese teenagers
- Be familiar with postoperative nutritional, psychosocial, and behavioral issues which may impact on outcomes of surgical weight loss procedures for adolescents

	PROGRAM	FACULTY
10:00 AM	Introduction/Welcome	Thomas Inge, MD
10:02 AM	Patient selection Considerations	Micheal Helmrath, MD
10:14 AM	Which Operation Is Best for Teens?	Sayeed Ikramuddin, MD
10:26 AM	Identification and Avoidance of Common Technical Challenges in the Superobese Teenager	Mark Vierra, MD
10:38 AM	Common Postoperative Problems in Teens and Their Management	Thomas Inge, MD
10:50 AM	Panel Question/Answer/Discussion	
11:15 AM - 1:00 PM	**DON'T FORGET: Friday Lunch in the Exhibit Hall available from 11:30 PM - 12:30 PM, FREE for all Scientific Session Registrants!**	

1:00 PM - 3:00 PM

PANEL 3: CHALLENGES OF INNOVATION

Moderator: Tom Krummel, MD

Program Chairmen: Moritz Ziegler, MD; Richard Azizkhan, MD; George Holcomb, MD

IPEG gratefully acknowledges a generous educational grant in support of this panel from our Gold Level Supporter: Gyrus/ACMI

Cincinnati Children's
Education and Training Digital Classroom

OBJECTIVES:

- Understand the historic milestones in thought about ethical medical innovation
- Appreciate the contributions of Henry Beecher and the subsequent Belmont report as the underpinnings for our current approach
- Understand the boundaries between Practice and Research
- Understand the current ethical issues as technology advance, often faster than evidence based data

Legal	William J. Winslade, PhD, JD
Ethics	Lauren McCullough, MD
Chairmen (Credentialling)	Program Chairman – Richard Azizkhan, MD Program Chairman – George Holcomb, MD Program Chairman – Moritz Ziegler, MD

COURSE SCHEDULE:

1:00 PM - 1:30 PM **Overview of Current Thought on Surgical Innovation and Research**

1:30 PM - 3:00 PM **Six cases for discussion**

1. Fetal MIS – Lethal problem & nonlethal problem
2. Robotic case, surgeon never did it laparoscopically
3. Advanced MIS surgeon wants to try something new, i.e. a Kasai or esophageal atresia
4. Nonendoscopic surgeon, 20 years in practice, wants to start doing laparoscopy
5. Attending never did the case, fellow knows how
6. A surgeon in one state telementors an operation in another state

3:00 PM - 3:15 PM **BREAK –** Location: Grand Ballroom C

IPEG gratefully acknowledges support of all coffee breaks by our Bronze Level Supporters: Berchtold, InTouch Health, Inc, Medical Education Technologies, Inc and Taut, Inc

3:15 PM - 4:15 PM

POSTER SESSION # 2 – WALK WITH PROFESSORS

Location: Grand Ballroom D & E

Moderators: Jurgen Schleef, MD; Mario Riquelme, MD

IPEG gratefully acknowledges a generous educational grant in support of this poster session from our Bronze Level Supporters: Berchtold; InTouch Health, Inc.; Medical Education Technologies, Inc. and Taut, Inc.

Poster Tour 012 - THORACOSCOPIC REPAIR OF ESOPHAGEAL ATRESIA (EA) WITH TRACHEO-ESOPHAGEAL FISTULA (TEF): THE MONTPELLIER Hossein Allal, MD, RB Galifer, PhD, MP Guibal, MD, Dominique Forgues, MD, Nicolas Kalfa, MD, Manuel Lopez, MD, Pediatric Videosurgery Division and Department of Pediatric Surgery, University of Montpellier, Lapeyronie

Poster Tour 013 - OUTCOME OF LAPAROSCOPIC TREATMENT OF BILATERAL NON PALPABLE TESTICLES (BNPT) S. Bernard, MD, M. Bailez, MD, General Pediatric Surgery; J. P. Garrahan Hospital Buenos Aires. Argentina

Poster Tour 014 - LAPAROSCOPIC TREATMENT IN INFANTS WITH PATHOLOGY OF BILE DUCTS AND PREOPERATIVE IMAGING BY HIGH RESOLUTION MRCP H. J. Kirschner, MD, J. Fuchs, MD, P. Szavay, MD, J. Schaefer, MD, University Hospital Tuebingen, Department of Pediatric Surgery, Radiological Clinic

Poster Tour 015 - CREATION OF AN ESOPHAGO-ESOPHAGOSTOMY FROM BLIND-ENDING POUCHES: A NOVEL TECHNIQUE. Arthur Cooper, MD, Vaughn E Whittaker, MD, Rajinder P Gandhi, MD, David L Friedman, MD, Victor Valda, MD, Division of Pediatric Surgery, Columbia University College of Physicians & Surgeons, Harlem Hospital Center, New York, New York

Poster Tour 016 - EFFECT OF ELEVATED INTRA-ABDOMINAL PRESSURE ON ENTEROCYTE TURNOVER IN A RAT. M Hirsh, MD, Jorge Mogilner, MD, M Lurie, MD, M Krausz, MD, I Sukhotnik, MD, Y Begar, MD, Bnai Zion Medical Center.Rappaport Medical School.Technion.Israel

Poster Tour 017 - LAPAROSCOPIC INTUSSUSCEPTION REDUCTION FOR FAILED AIR ENEMA J Curry, MD, KH Lee*, MD, G Chan*, MD, K McHugh, MD, DP Drake, MD, A Pierro, MD, CK Yeung*, MD, SA Clarke, MD, Great Ormond Street Hospital for Sick Children, London; Prince of Wales Hospital, Chinese University of Hong

Poster Tour 018 – MAGNETIC COMPRESSION ANASTOMOSIS AS A NON SURGICAL TREATMENT FOR ESOPHAGEAL ATRESIA. LONG TERM FOLLOW UP Ricardo Ben, MD, Mario F Zaritzky, MD, Hospital de NiÒos de La Plata

Poster Tour 019 - THORACOSCOPIC LIGATION VERSUS COIL OCCLUSION FOR PATENT DUCTUS ARTERIOSUS Peter G Fitzgerald, MD, Sanjeev Dutta, MD, Mark Walton, MD, Paul F Kantor, MD, Lee N Benson, MD, Brian H Cameron, MD, Alexandra Mihailovic, MD, Jacob C Langer, MD, The Hospital for Sick Children, Toronto, Canada & McMaster Children's Hospital, Hamilton, Canada

Poster Tour 020 - THE THORACOSCOPIC AND LAPAROSCOPIC APPROACH TO DIAPHRAGMATIC EVENTRATION Alexandra Weltzien, MD, Christine Matthes, Felix Schier, MD, Department of Pediatric Surgery, University Medical Centre Mainz, Germany

Poster Tour 021 - THORACOSCOPIC RESECTION OF NEUROGENIC TUMORS IN CHILDREN Lacreuse-Talon Isabelle, MD, Becmeur Francois, MD, Guye Emmanuelle, MD, Leclerc Jean Marc, MD, Valla Jean StÈphane, MD, Moog Raphael, MD, Varlet Francois, MD, HÙpitaux Universitaires de Strasbourg, Department of Paediatric surgery

4:15 PM - 5:15 PM

SS05: GASTROINTESTINAL & HEPATOBILIARY

Location: Grand Ballroom A & B

Moderators: Raphael Udassin, MD; Milissa McKee, MD

IPEG gratefully acknowledges educational grants in support of this course from Autosuture and Valleylab, divisions of Tyco Healthcare

S032 BLEEDING JEJUNAL DIEULAFOY PSEUDOPOLYP: CAPSULE ENDOSCOPIC DETECTION AND LAPAROSCOPIC TRANS-UMBILICAL POLYPECTOMY Wei Sek Hwang, MD, Te-Lu Yap, MD, Kwang Hsien Lim, MD, Sai Prasad TR, MD, Kiat Hon Lim, MD, Departments of Paediatric Surgery, Paediatric Medicine and Pathology, KK Women's and Children's Hospital, Singapore

S033 OUTCOME OF LAPAROSCOPIC SURGERY IN CHILDREN WITH INFLAMMATORY BOWEL DISEASE. Ivan R Diamond, MD, J. Ted Gerstle, MD, Jacob C Langer, MD, Peter C Kim, MD, The Hospital for Sick Children, Toronto, Canada.

S034 ENDOSCOPIC RESECTION OF CONGENITAL INTRINSIC STENOSIS OF THE DUODENUM J Waldschmidt, MD, H Giest, MD, P Fero-Ivanyi, MD, L Meyer-Junghänel, MD, Pediatric surgery, St. Joseph Children´s hospital, Berlin, Germany

S035 IS LAPAROSCOPY ASSISTED ANORECTOPLASTY (LAARP) FOR INTERMEDIATE-TYPE OF IMPERFORATE ANUS FEASIBLE? Chikashi Gotoh, MD, Hiroo Uchida, PhD, Tadashi Iwanaka, PhD, Tetsuya Ishimaru, MD, Katsumi Yotsumoto, PhD, Shiho Hamano, PhD, Hiroshi Kawashima, MD, Dept. of Pediatric Surgery, Saitama Children's Medical Center, Iwatsuki, Saitama, Japan.

S036 OUTCOME AFTER LAPAROSCOPIC PULLTHROUGH (LP) IN MALES WITH HIGH ANORECTAL MALFORMATIONS (HARM). PRELIMINARY RESULTS OF A COMPARATIVE STUDY WITH THE OPEN APPROACH IN A SINGLE INSTITUTION Maria Bailez, MD, V. Dibenedetto, MD, Pediatric Surgery . Garrahan Hospital . Buenos Aires . Argentina

S037 LAPAROSCOPIC VERSUS OPEN "BUTTON" CECOSTOMY Ruth Kovac, RN, Dragan Kravarusic, MD, Andrew Wong, MSc, Sarah Wong, BA, Alberta Children's Hospital, Calgary, Alberta, Canada

S038 LAPAROSCOPY ASSISTED STOMA CLOSURE (LASC) Takeshi Miyano, PhD, Geoffrey Lane, MD, Hiroyuki Kobayashi, MD, Tadaharu Okazaki, MD, Go Miyano, MD, Atsuyuki Yamataka, MD, Toshihiro Yanai, MD, Department of Pediatric General and Urogenital Surgery Juntendo Universuty School of Medicine

S039 LAPAROSCOPIC TOTAL CYST EXCISION WITH ROUX-EN-Y HEPATOENTEROSTOMY FOR CHOLEDOCHAL CYST: 68 CASES EXPERIENCE Long Li, MD, Xuelai Liu, MD, Liuming Huang, MD, Dept. of Pediatric Surgery, the Capital Institution of Pediatrics,Beijing,China

S040 A COMPARISON STUDY OF LAPAROSCOPIC VERSUS OPEN PORTOENTEROSTOMY FOR BILIARY ATRESIA xue-lai Liu, MD, jun Zhang, long Li, MD, capital institute of pediatrics

S041 ENDOSURGICAL TREATMENT OF LIVER HYDATID DISEASE IN CHILDREN: PRELIMINARY RESULTS OF 12 YEARS EXPERIENCE A. Ergaliev, S. Dosmagamdetov, MD, V. Kotlobovsky, MD, D. Dzenalaev, MD, Department of Laparoscopic Surgery, Regional Pediatric Hospital, Aktobe, Kazakhstan

7:30 PM - 11:00 PM

DON'T MISS THE IPEG/SAGES MAIN EVENT - FEATURING: THE SAGES SING-OFF!

THE TAMING OF THE WILD WEST — EDDIE DEEN'S RANCH

Cost: $10 for paid Scientific Session registrants & guests. Tickets available for purchase at Registration. Shuttles will pick up at the Clock Tower Entrance next to La Esquina Restaurant. Shuttles will run every 10 minutes back and forth to the event.

IPEG gratefully acknowledges a generous educational grant in support of this event from our Diamond Level Supporters: Autosuture and Valleylab, divisions of Tyco Healthcare, Ethicon Endo-Surgery, Inc, Karl Storz Endoscopy America, Inc, Stryker Endoscopy; and our Platinum Level Supporter: Intuitive Surgical

7:00 AM - 8:30 AM

BREAKFAST – VIDEO SESSION # 3

Location: Grand Ballroom A & B

Moderators: Brian Cameron, MD; John Waldhausen, MD

IPEG gratefully acknowledges a generous educational grant in support of this video session from our Gold Level Supporter: Gyrus/ACMI

V019 LAPAROSCOPIC LEFT LATERAL SEGMENTS RESECTION OF THE HUGE TUMOR OF THE LIVER Piotr Kalicinski, PhD, Dariusz Polnik, MD, Marek Szymczak, MD, Ludmi?a Bacewicz, PhD, Pawel Nachulewicz, PhD,Children's Memorial Heath Institute. Department of Pediatric Surgery and Organ Transplantation. Warsaw, Poland

V020 LAPAROSCOPIC CHOLEDOCHAL CYST EXCISION AND BILIARY Diana L Farmer, MD, Cortes Raul, MD, Hanmin Lee, MD,University of California, San Francisco

V021 LAPAROSCOPIC TREATMENT OF FOCAL HYPERINSULINISM Pablo Laje, MD, Foong Y Lim, MD, N S Adzick, MD,The Children's Hospital of Philadelphia

V022 LAPAROSCOPIC REPAIR OF AN IATROGENIC URETERAL INJURY Ricardo Gonzalez, MD, Lisandro A Piaggio, MD,A I duPont Hospital for Children, Wilmington, DE, USA

V023 GASTRIC TRICHOBEZOAR REMOVED BY LAPAROSCOPY María Elena Sanchez., MD, Pastor Escarcega-Fujigaki., MD, Guillermo Hernández-Peredo R, MD, Virginia Campillo., MD,Centro de Especialidades Medicas del Edo de Veracruz "Dr. Rafael Lucio"

V024 LAPAROSCOPIC REDUCTION OF INTERNAL HERNIA DUE TO MECKEL'S Joseph A Iocono, MD, Steven D Noe, MD,Kentucky Children's Hospital, University of Kentucky

V025 LAPAROSCOPIC MORGAGNI HERNIA REPAIR USING A NOVEL "SEE-SAW" SUTURING TECHNIQUE Hanmin Lee, MD, Raul A Cortes, MD,Division of Pediatric Surgery, University of California, San Francisco

V026 U-CLIP ASSISTED LAPAROSCOPIC MORGAGNI HERNIA REPAIR Rajeev Prasad, MD, Michael V Tirabassi, MD, Kevin P Moriarty, MD,Baystate Children's Hospital, Tufts University School of Medicine

V027 DA VINCI ASSISTED LAPAROSCOPIC HELLER MYOTOMY AND TOUPET FUNDOPLICATION FOR ACHALASIA Cristiano Boneti, MD, Brendan T Campbell, MD, Evan R Kokoska, None, Samuel D Smith, None, Richard J Jackson, None,Arkansas Childrens Hospital

V028 ROBOTIC-ASSISTED VNS PLACEMENT Thom E Lobe, MD, Simon K Wright, MD,Blank Children's Hospital

V029 FETOSCOPY OF CONJOINT TWINS Oluyinka O Olutoye, MD, Darrell L Cass, MD, Mary P O'Day, MD, Robert Carpenter, MD,Texas Center for Fetal Surgery, Baylor College of Medicne, Texas Children's Hospital and St. Luke's Episcopal Hospital, Houston, Texas.

V030 RETROPERITONEAL EXCISION OF STAGE II NEUROBLASTOMA IN A NEONATE Banieghbal B,Ch Baragwanath Hospital, Johannesburg, South Africa

V031 SELECTIVE TRANSPERITONEAL ASPIRATION OF THE BOWEL (STAB). A SIMPLE AND EFFECTIVE METHOD FOR ACHIEVING SURGICAL FIELD IN CHILDREN WITH SIGNIFICANT INTESTINAL DISTENSION. Marcelo H Martinez-Ferro, MD, Bignon Bignon, None,Department of Pediatric Surgery. "Fundacion Hospitalaria" Children's Hospital. Buenos Aires. Argentina.

8:30 AM - 9:00 AM

IPEG GENERAL BUSINESS MEETING

A GENTLE REMINDER: We have taken every precaution to assure the safety and security of our guests and their possessions. However, we urge you to be aware and take simple steps to guard your possessions.

- **Do not leave your purse or briefcase unattended.**
- **Do not leave your laptop, phone or PDAS on the floor or out of your sight in a darkened room**
- **Be aware of your surroundings.**

HAVE A SAFE & SECURE MEETING!

9:00 AM - 9:30 AM

KEYNOTE LECTURE – MINIMALLY INVASIVE SURGERY: THE IMPACT OF FLEXIBLE ENDOSCOPY

Location: Grand Ballroom A & B **Speaker:** Jeffrey Ponsky, MD, FACS

Jeffrey L. Ponsky completed his surgical training at University Hospitals of Cleveland in 1976. He then joined the faculty of the Department of Surgery at University Hospitals of Cleveland where he was the Director of Surgical Endoscopy. In 1979 he became the Director of the Department of Surgery at The Mt. Sinai Medical Center in Cleveland where he remained through 1997. During that time Dr. Ponsky was Professor of Surgery at Case Western Reserve University School of Medicine and Vice Chairman of the Department of Surgery at Case. Dr. Ponsky then joined The Cleveland Clinic as the Director of Endoscopic Surgery and was the first Executive Director of the Minimally Invasive Surgery Center at The Cleveland Clinic Foundation. He was also the Vice Chairman of the Division of Education and Director of Graduate Medical Education. He has been Professor of Surgery at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University. He has served as a member of the Board of Governors at The Cleveland Clinic. In 2005 he assumed the Oliver H. Payne Professorship and Chair of the Department of Surgery at Case Western University School of Medicine and University Hospitals of Cleveland.

Dr. Ponsky is Past President of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), Past President of the Ohio Chapter of the American College of Surgeons, Past President of the Cleveland Surgical Society, and Past President of the American Society for Gastrointestinal Endoscopy (ASGE). He is presently the Chairman of the American Board of Surgery, Fellow of the American College of Surgeons, and numerous prominent surgical societies.

Dr. Ponsky is a graduate of Case Western Reserve University School of Medicine and earned his Executive MBA from CWRU's Weatherhead School of Management in 1990. He received the distinguished Kaiser Teaching Excellence Award at CWRU School of Medicine in 1993; the Distinguished Service Award for 2000 by the Society of American Gastrointestinal Endoscopic Surgeons in April 2000; and in 2002 he received ASGE's Rudolf Schindler Award, the highest recognition award for excellence in endoscopic research, teaching and service. Dr. Ponsky has been listed in *The Best Doctors in America*? each year since its inception. He has published over 165 original articles and book chapters, authored or edited five textbooks and serves on the editorial board of eight journals. He is the originator of the percutaneous endoscopic gastrostomy which provided a minimally invasive substitute for operative placement of feeding tubes.

IPEG gratefully acknowledges a generous educational grant in support of this event from our Diamond Level Supporters: Autosuture and Valleylab, divisions of Tyco Healthcare; Ethicon Endo-Surgery, Inc.; Karl Storz Endoscopy America, Inc.; Stryker Endoscopy; and our Platinum Level Supporter: Intuitive Surgical

9:30 AM - 10:00 AM

BREAK – Location: Grand Ballroom C

IPEG gratefully acknowledges support of all coffee breaks by our Bronze Level Supporters: Berchtold, InTouch Health, Inc, Medical Education Technologies, Inc and Taut, Inc

10:00 AM - 12:00 PM

PANEL 4: CHALLENGES OF INVESTIGATION PANEL

Location: Grand Ballroom A & B **Chairman:** John Morton, MD

COURSE DESCRIPTION:

The practice of surgery is rapidly changing from financial, technological, and educational influences. Clinical research can be an important vehicle for managing these changes identifying the most effective care. There are particular challenges to clinical investigation in surgery that can be met by appropriate clinical trial design, data collection, and research reporting. From these challenges, opportunities for clinical research are present and the surgical community must be poised to take advantage of these opportunities.

IPEG gratefully acknowledges a generous educational grant in support of this poster session from our Gold Level Supporter: Gyrus/ACMI

OBJECTIVES:

1. Grade the quality of selected surgical literature and determine the appropriate criteria for quality in the surgical literature
2. Establish and maintain a prospective clinical database and distinguish clinical databases from administrative databases
3. Understand the challenges of performing surgical clinical trials and learn the best practices from previous exemplary trials
4. Investigate the Center of Excellent movement and its impact upon research and patient safety
5. Determine from these challenges of investigation what are the most important opportunities for investigation

PROGRAM	FACULTY
Critical Evaluation of Literature	Craig Albanese, MD
Database Construction and Management	Douglas Barnhart, MD
Performing Surgical Clinical Trials	Sanjeev Dutta, MD
Patient Safety and Centers of Excellence Movement	John Morton, MD

12:00 PM - 12:45 PM

SS06: MISCELLANEOUS TOPICS

Location: Grand Ballroom A & B

Moderators: Marcela Maria Bailez, MD; Girolamo Mattioli, MD

S043 U-STITCH LAPAROSCOPIC GASTROSTOMY TECHNIQUE HAS A LOW RATE OF COMPLICATIONS AND ALLOWS PRIMARY BUTTON PLACEMENT: A SINGLE INSTITUTION EXPERIENCE WITH 461 PEDIATRIC PROCEDURES Charles J Aprahamian, MD, Traci L Morgan, RN, Carroll M Harmon, MD, Keith E Georgeson, MD, Douglas C Barnhart, MD, Division of Pediatric Surgery, University of Alabama-Birmingham

S044 ESOPHAGO-GASTROSCOPY FOR INTRA-OPERATIVE ASSESMENT OF LAPAROSCOPIC NISSEN FUNDOPLICATION : IS IT INDICATED ? Georges Azzie, MD, Lena Perger, MD, Libby Watch, MD, Robert Weinsheimer, MD, Children's Hospital of New Mexico,University of New Mexico

S045 ELIMINATION OF COMPLICATIONS OF LAPAROSCOPIC PYLOROMYOTOMY Daniel A Beals, MD, Joseph A Iocono, MD, Andrew R Pulito, MD, Shaun McKenzie, MD, University of Kentucky

S047 ENDOSCOPIC DISOBLITERATION OF STENOSES OF BRONCHI AND THORACIC TRACHEA IN 245 CHILDREN USING RINGKNIFE, BALLOON AND LASER Jürgen Waldschmidt, MD, Henning Giest, MD, Lutz Meyer-Junghänel, MD, Pediatric surgery, St. Joseph Children´s hospital, Berlin, Germany

S049 COST ANALYSIS OF MINIMALLY INVASIVE SURGERY IN A PAEDIATRIC SETTING Vanessa Mc Lean, Anies A Mahomed, MD, Royal Alexandra Children's Hospital

S050 LONG TERM OUTCOME OF ENDOLUMINAL GASTROPLICATION (ENDOCINCH) IN CHILDREN P Ashwood, MD, N Afzal, MD, S Hall, MD, A Fritscher-Ravens, MD, M Thomson, MD, Brice Antao, MD, C P Swain, MD, Sheffield Children's Hospital, Sheffield, Royal Free Hospital, London and Royal London Hospital, London, UK

12:45 PM - 1:00 PM

CLOSING REMARKS AND INTRODUCTION OF 2007 PRESIDENT

Location: Grand Ballroom A & B

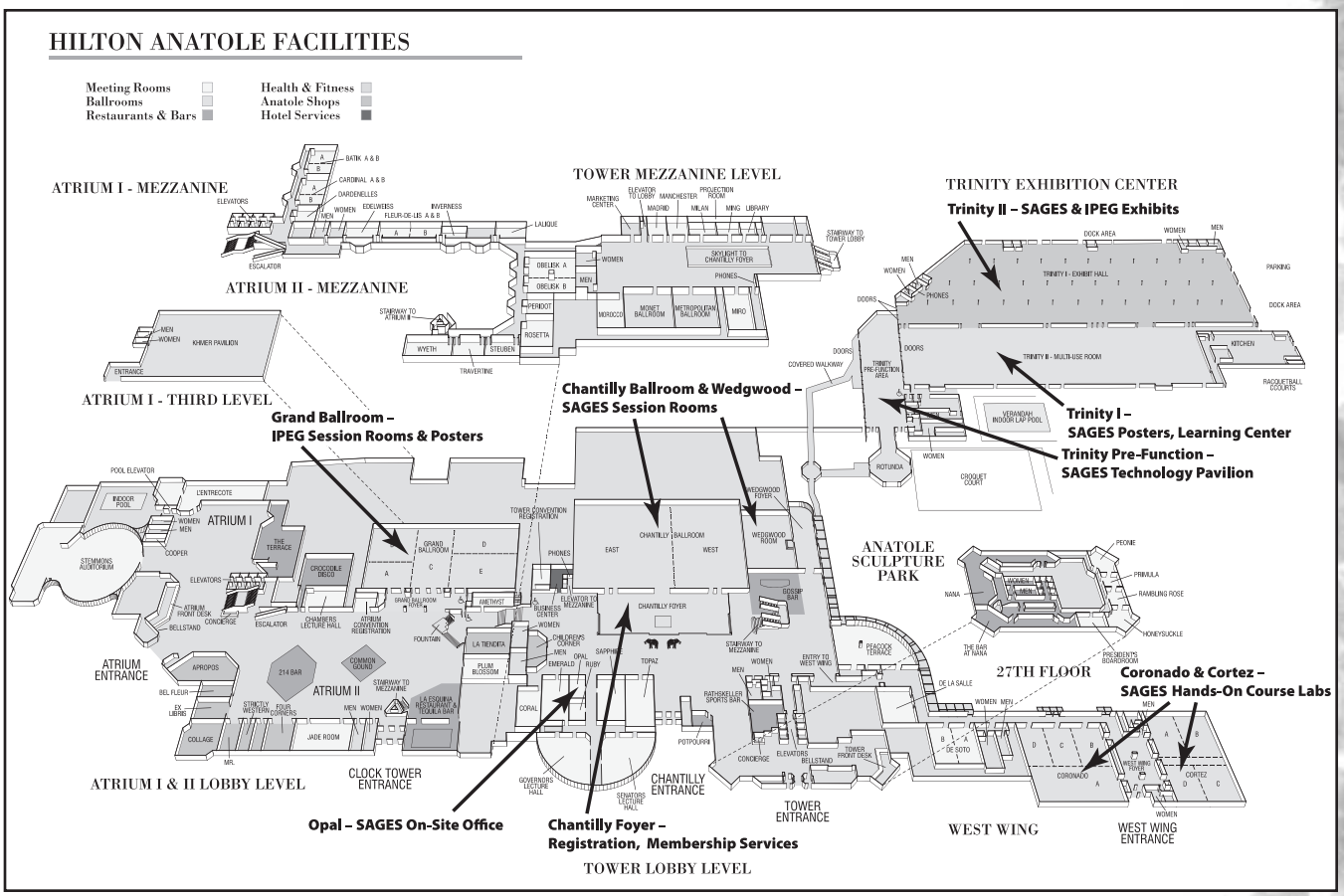
Speaker: Keith E. Georgeson, MD

1:00 PM - 2:00 PM

FAREWELL LUNCH – Location: Grand Ballroom C

Please join Dr. Georgeson, Dr. Yamataka, and the IPEG leadership for an informal luncheon which provides delegates an opportunity to interact with IPEG leadership. Spend time with new and old friends and say farewell.

HILTON ANATOLE FACILITIES



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IPEG 2006

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Oral Presentation Abstracts

S001

FETOSCOPY UNDER GAS AMNIODISTENSION (PART 2): EXPERIMENTAL INFLUENCE OF HELIUM VERSUS NITROUS OXIDE ON FETAL GOATS, H K Till PhD, C K Yeung PhD, W. F Bower PhD,Y Shi,W Chu, The Chinse University of Hong Kong

Objective: The optimal gas for fetoscopy under amniodistension has not been identified yet. While CO2 causes significant fetal acidosis and nitrous oxide (N2O) is potentially teratogenic, Helium (He) has never been tested. The present experimental study investigates the physiological impact of He versus N2Oon the feto-maternal unit of goats during fetoscopy.

Methods: In 12 pregnant goats 15 fetuses (28-30 weeks of gestation) received insertion of a central arterial line (right carotid) and gastric temperature probe via a small hysterotomy. Amniotic fluid was evacuated and a 5mm port was installed into the amniotic cavity. Fetoscopy was performed with increasing pressures (0-4-7-10 mm Hg) in 30 minutes intervals with either He or N2O, using the STORZ insufflator with heating and humidifying. Maternal and fetal parameters (temp, heart rate (HR), mean arterial pressure (MAP), pH, PCO2, PO2, SaO2) were recorded for each interval. Finally fetuses were investigated by whole body CT to assess for intracorporeal gas accumulation.

Results: All animals survived the procedure (He=7, N2O=8 fetuses). Basically mean fetal values remained within normal limits throughout all pressure intervals and showed non-significant differences between both groups. In detail, comparison of means at 0 and 10 mmHg for He versus N2O revealed: fetal temp dropped slightly (32,9-32,16/33,2-32,45 °C), HR increased marginally in the N2O group (100-103/102-121bpm), MAP was stable (45,8-53,7/ 48,3-46,6 mmHg), fetal gas exchange parameters changed slightly in parallel to maternal values: pH (7,4-7,26/7,31-7,25), pC02 (5.47-6,85/7,23-8,01kPa), pO2 (3,72-3,55/3,35-2.95kPa) and SaO2 (48,7-42,5/39,6-29,5%). CT ruled out significant extracorporeal gas accumulation.

Conclusion: Neither N2O nor He seem to impose significant physiological harm on the fetus. Maternal stability during surgery and heating of the gas seem essential. Considering the potential teratogenicity of N2O however, He could be the favorable environment. Further experimental studies are necessary to investigate the feasibility of fetoscopic surgery under He amniodistension.

S002

EFFECTIVENESS OF FETOSCOPIC ELECTROCAUTERISATION IN DIFFERENT MEDIA: AIR, PERFLUOROCARBON, GLYCERIN, GLYCIN, ELECTROLYTE SOLUTION, Oliver J Muensterer MD, Verena J Herrmanns MD,Roman Metzger MD,Holger Till MD, Departments of Pediatric Surgery, University of Munich and Leipzig

Background: Electrocauterisation during fetoscopic surgery is a challenge in the native, conductive, electrolyte-containing amniotic fluid. Conversely, intrauterine insufflation of carbon dioxide may cause lethal hypercapnia and acidosis in the fetus. Therefore, other media must be considered.

Objective: To evaluate the efficiency of electrocauterisation in air, perfluorocarbon, glycerine, glycine, and electrolyte solution in an in-vitro model, as these have been described as media in experimental fetoscopic surgery.

Methods: Using bipolar electrocautery, standardized lesions were made in 16 skin-cartilage specimens from the ears of New Zealand White rabbits in 4 different media: Air, 85% glycerine (GS), 1.5% glycin, electrolyte solution (ES, Na+ 140; K+ 5; Ca++ 2,5; Mg++ 1,5; Cl- 153 mmol/l), and perfluorodecalin (PFD, a perfluorocarbon). The effectiveness of electrocauterisation in the different media was compared by calculating the mean necrosis indices (NI, quotient of native to necrosed tissue thickness) and assessing the qualitative histologic changes.

Results: Except for ES, all cauterized areas showed clear sequellae of electrocauterisation such as thinning, loss of tissue architecture, increased staining of the stroma, and kariorhexis. The mean NI were 1.38 (CI: 1.29-1.47) for air, 1.37 (CI: 1.27-1.47) for GS, 1.32 (CI: 1.23-1.41) for PFD, 1.31 (CI: 1.22-1.40) for glycin, and 1.05 (CI: 1.01-1.09) for ES. The mean NI was significantly lower for ES compared to all other media ($p<0.01$). No significant differences were detected between the non-conductive substances.

Conclusion: Among the tested media air, glycin, glycerine, and perfluorodecalin allow similarly effective electrocauterisation. As expected, bipolar electrocauterisation in electrolyte solution is ineffective. Perfluorodecalin may have other potential advantages as a medium in endosurgery such as low surface tension, biologic inertia, optical clarity and insolubility of blood.

S003

EASY KNOTTING TECHNIQUES, Krishnasamy Selvarajan MS, Manickam Ramalingam MS,Kallappan Senthil MS,Ganapathy Pai MS, K.G.Hospital and Post Graduate Institute

Nightmare in laparoscopic reconstructive paediatric surgery is suturing and knotting. Certain easy knotting techniques were tried with good results.

Materials and Methods: The Techniques namely 1. Cycle ?O? loop technique 2. Tip to tip technique and 3. Half step techniques are tried according to the situation. All laparoscopic procedures which needed knotting were tried with these techniques and results evaluated by time taken for knotting, movements necessary to make a knot, the angles at which each knot can be made type of suture material versus knotting technique were analysed. The finer aspects like to hold long thread, small thread position, long thread position before loop formation, position of dissector, position of long thread after loop formation, where to start for a loop formation to make reef knot etc.. are analysed and results are given.

Results: The following observations and results were obtained the each technique

TechniqueSuture materialAngle at which easily madeIn which difficult situation this technique is more useful The best advantage

Tip to tip techniqueAny material90o between working portsWhen suture material length is very smallLeast movement

Circle ?O? LoopLittle stiff eg) Prolene, ethilonAny angleWhere working ports are not in triangulation (or) close each otherCumbersome loop formation and shipping while knotting can be avoided

Half step techniqueAny material600 to 1200Where repeated slippage while loop formationOvercoming the difficulties in knotting is possible in C loop technique

Conclusion: Certain problems in knotting in laparoscopy were studied and how to overcome such difficulties were found out. Bases on observations, certain innovative techniques and their applications are outlined. These techniques are really useful in reconstructive paediatric laparoscopic surgery in terms of easy knotting and time saving.

S004

IMPROVING TACTILE SENSATION IN MINIMALLY INVASIVE PEDIATRIC SURGERY, Michael V Tirabassi MD, George Wadie MD,David Tashjian MD,Kevin P Moriarity MD, Baystate Children's Hospital, Tufts University School of Medicine

Purpose: The goal of this project was to investigate factors that impact tactile sensation during minimally invasive pediatric surgery.

Methods: 3 different 3mm Maryland laparoscopic instruments were tested with and without the resistance of a trocar (Ethicon 3mm); Jarit (24 cm shaft, 113 grams), Storz (30cm shaft, 62 grams), and an ultra-light prototype (24 cm shaft, 5 grams). A laparoscopic simulator was constructed that provided no visual clues forcing the surgeon to rely on tactile sensation only. Instruments were guided by fixed shafts at three different angles of inclination (5,45,and 90 degrees) toward the experimental target. Surgeons were instructed make contact with the target with as little force as possible. Instantaneous pressure measurements on the target were measured and recorded every 0.00001sec. Differences between impact pressures were compared with student t-test.

Results: 27 surgeons in the study. 18 attendings, and 9 surgical residents(>pgy3). 16 of the participating surgeons considered themselves advanced minimally invasive surgeons. 5 of the surgeons were Pediatric Surgeons. There were no statistically

significant differences between the impact pressures using the Storz and Jarit instruments. The ultra-light had significantly lower impact pressures than the Storz instrument at all angles both with a trocar ($p<0.05$) and without a trocar ($p<0.001$). The ultra-light had lower impact pressures than the Jarit instrument at all angles in the absence of the trocar ($p<0.001$), but with a trocar in place the only significant difference was at 5 degrees ($p<0.001$). The trocar had a negative impact on tactile sensation with the ultra-light ($p<0.01$).

Conclusions: The two fold difference in mass between the Storz and Jarit instruments did not make an impact on tactile sensation in this model. Decreasing instrument mass by 10 to 20 fold did make a statistically significant improvement in tactile sensation.

Mean Impact Pressure on Target

	Jarit + Trocar	Storz + Trocar	Ultralight+Trocar	Jarit	Storz	Ultralight
90°	1.98 cmH20	1.69 cmH20	1.39 cmH20	1.67cmH20	1.46cmH20	0.62cmH20
45°	1.79 cmH20	1.61 cmH20	1.40 cmH20	1.73cmH20	1.51cmH20	0.97cmH20
5°	0.84 cmH20	1.07 cmH20	0.84 cmH20	0.96cm H20	0.87cmH20	0.67cmH20

S005

EXPOSURE TO CARBON DIOXIDE AND HELIUM REDUCES IN VITRO PROLIFERATION OF PEDIATRIC TUMOR CELLS, Akihiro Shimotakahara PhD, Annika I Schmidt MD,Marc Reismann MD, Joachim F Kuebler MD,Gertrud Vieten DO,Catherine Bangen,Sylvia Glueer PhD,Benno M Ure PhD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

Background: We showed that CO2 used for pneumoperitoneum modulates the function of macrophages and polymorphnuclear cells via direct effects and acidification. In vitro and animal studies also confirmed an alteration of the behavior of adult tumor cells by CO2. The impact of CO2 and on the behavior of various pediatric tumors has not been determined.

Methods: Cell lines of neuroblastoma (IMR 32, SK-N-SH, Sy5y), lymphoma (Daudi), hepatoblastoma (Huh 6), hepatocellular carcinoma (Hep G2), and rhabdomyosarcoma (Te 671) were incubated for 2 hours. Incubation was performed with 100% CO2, 100% helium, and 5% CO2 as control. Cell proliferation was determined by the MTT-assay (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) which was performed before, after incubation, and daily for 4 days. Vitality of the cells was determined by trypan blue. The extracellular pH during incubation was measured every 10 minutes.

Results: CO2 for 2 hours significantly decreased the proliferation of neuroblastoma, lymphoma, hepatoblastoma and hepatocellular carcinoma cells. This decrease persisted over 4 days in neuroblastoma, lymphoma and hepatocellular carcinoma cells. CO2 had no impact on hepatoblastoma and rhabdomyosarcoma cells. Helium had a similar effect on neuroblastoma cells. After 4 days, a significant decrease of cell activity was found in 2 neuroblastoma cell lines and in hepatoblastoma cells. Helium had no effect on lymphoma and hepatocellular carcinoma cells. The extracellular pH was 6.2 during incubation with CO2 and 7.6 during incubation with helium.

Conclusion: CO2 and helium may affect the proliferation of some pediatric tumor cell lines in vitro. However, some of these effects and the impact on the extracellular pH are differential. The role of pH modulation, hypoxia and direct effects of gases remain to be investigated.

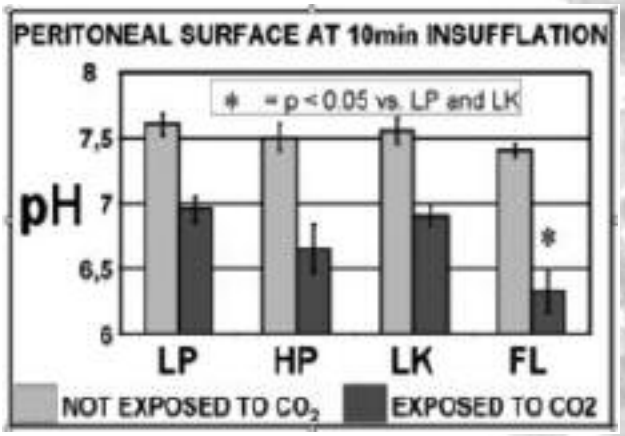
S006

ACIDIFICATION DURING CO2 PNEUMOPERITONEUM IS RESTRICTED TO THE GAS-EXPOSED PERITONEAL SURFACE: EFFECTS OF PRESSURE, AIR FLOW AND ADITIONAL INTRAPERITONEAL FLUIDS. Joachim F Kuebler MD, Gertrud Vieten PhD, Akihiro Shimotakahara PhD, Martin L Metzelder MD, Natalie K Jesch MD, Benno M Ure MD, Department of Pediatric Surgery, Medical University Hannover, Hannover, Germany

Introduction: In previous studies we demonstrated that CO2 alters macrophage functions via changes of the extracellular pH. Varying data regarding the degree and the extent of the abdominal acidification during laparoscopy exist. The aim of this study was to determine the extent of the peritoneal acidification during CO2 insufflation and the effects of different pressure, insufflation rate and free intraperitoneal fluids.

Methods: Male Sprague-Dawley rats (250-300g BW) were anaesthetised (Ketamin/Xylazine) and a two point pH-probe was inserted in the abdominal cavity. After closure of the abdominal wall, rats were subjected to four insufflation regimens (each n=4): LP – low pressure (2 mmHg, no leakage), HP – high pressure (10 mmHg, no leakage), LK – leakage (2 mmHg, leakage 0.5 ml/min) and FL – fluid (2 mmHg, 10ml intraperitoneal 0.9%NaCl). During insufflation pH was continuously measured

Results: CO2 insufflation decreased the peritoneal pH only in areas exposed to the insufflation gas. Neither changes in pressure nor insufflation rate had major effects on the peritoneal pH. Addition of 10ml normal saline in the abdominal cavity significantly enhanced the pH change during CO2 insufflation.



Conclusion: Acidification associated with CO2 pneumoperitoneum is limited on the exposed part of the peritoneal surface, i.e. the area of inspection / manipulation. The increased acidification following injection of normal saline could offer a useful mechanism to alter the inflammatory response.

S007

LAPAROSCOPICALLY INVESTIGATED MORPHOLOGY OF THE INGUINAL CANAL: FOR EVIDENCE-BASED MANAGEMENT OF INGUINAL HERNIA AND HYDROCELE IN PEDIATRC PATIENTS., Fumiko Yoshida MD, Masao Endo MD, Department of surgery, Tokyo Metropolitan Kiyose Children's Hospital

INTRODUCTION: Debate over management of the contralateral inguinal groin in children with unilateral inguinal hernia and the relationship between hernia and hydrocele is still evergreen problem. Numerous data of processus vaginalis have been accumulated. But most of these data are delivered from classical open external access, or indirect findings such as pneumoperitoneography or echography. Recently introduced diagnostic laparoscopy assesses contralateral side only. Laparoscopic herniorraphy that we had developed led us to realize the simultaneous investigation on both internal inguinal areas in direct vision. This paper discloses the relationship between hernia side and contralateral side, and hernia and hydrocele in terms of the morphology of the inguinal canal.

METHODS: Video records in 516 children (293 boys and 227 girls) who underwent laparoscopic herniorrhaphy for inguinal hernia/hydrocele from May 2001 to December 2004 were analysed. Ages ranged from 1 month to 14?@years with a median of 2 years. There were 209 hernia and 84 hydrocele in boys and 223 hernia and 4 Nuck in girls. The procedures are performed with the help of a 5-mm telescope inserted through the umbilicus and a 2-mm grasping forceps placed below the umbilicus. The both sides of the internal inguinal ring (IIR) were investigated as for the shape of the IIR which were classified into 3types; open, pinhole and flat. Each type was further divided to covered or non-covered with veil. The diameter and length of the PPV were measured with a flexible rule.

RESULTS: Incidence of contralateral patency was 36.1% in boy?fs hernia, 43.0% in boy?fs hydrocele, 53.5% in girl?fs her-

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nia and 66.7% in girl?fs Nuck. There was no difference in predominancy of the rate of contralateral patency in age. The diameter and length of the PPV were universally smaller in contralateral side.
CONCLUSIONS: The fact that the predominancy of covered type in contralateral side may explain the discrepancy between the rates of PPV and later clinical hernia. Herniorrhaphy had to be done in hydrocele type, because all boys with hydrocele and girls with Nuck had the distinct PPV.

S008

LAPAROSCOPIC EVALUATION OF TRUE HERMAPHRODITES, B Banieghbal MD, K Parbhoo MD, CH Baragwanath Hospital, University of the Witwatersrand, Johannesburg

Introduction: Surgical management of intersex states and specially that of true hermaphrodites has become subjected to intense public scrutiny and controversy by a small but vocal group of activist; their main concern is the age of gender reassignement in relation to undefined delayed negative psychological impact on the child.
Laparoscopy is one the most important methods of evaluating these patients prior to genital surgery.
Methods: Over a 5 year period, 11 true hemaphrodites with a variety of phenotypical appearances were evaluated with laparoscopy as to evaluate the pelvic organs present and obtain ?pole-to-pole? gonadal biopsy. Genetic examination including FISH and PCR were carried confirming complex mosaic XY/XX states in all cases.
Result: Gonadal biopsies showed mixed-type (7 cases) or bipolar (4 cases) ovotestes. In 9 children who were over 5 years (pre-school), gender reassignment was performed after careful evaluation by child psychiatrist and intersex specialist. 7 were converted to males and 2 to females. In these cases, discordant gonads removed laparoscopically as a secondary procedure. 2 boys also had laparoscopic hysterectomy, with preservation of a single vas deferens in one case.
Discussion: Laparoscopic evaluation of the pelvic organs in intersex states clarifies the anatomy and guides decision-making algorithm for these complex problem. We believe that gender reassignment must take place before commencing school as to minimize the psychological impact of indetermined sexual orientation in primary school setting.

S009

LAPAROSCOPIC PYELOPLASTY IN THE PEDIATRIC POPULATION, Israel Franco MD, Lori Landau MD,Paul Zelkovic MD, Pediatric Urology Associates PC and New York Medical College, Valhalla, NY 10595

Introduction: Laparoscopic pyeloplasty has been increasing in popularity as the treatment of choice in children with UPJ obstruction. Advantages of this procedure are greatest in the older patient population as evidenced by the prompt recovery and swift return to full activities when compared to other children that underwent open pyeloplasty. We set out to review our series of older patients who underwent laparoscopic pyeloplasty utilizing a standard hand sewn anastomosis and a robotic anastomosis.
Methods: 29 patients (14 robotic assisted/15laparoscopic) who underwent laparoscopic pyeloplasty for UPJ obstruction in the last 30 months were studied retrospectively. Patients ranged in age from 6-16 years (average age 10.2). All repairs were via a transperitoneal route and were stented with a double pigtail catheter for 4-6 weeks postoperatively. Follow up ranged from 8-116 weeks (average 29.8 weeks).
Results: No Intra-operative complications were observed. There were two open conversions, one for mechanical robot failure and the other in a patient with a renal stone. Three patients leaked post operatively for 4, 5, 7 days respectively. All leakage ceased spontaneously without intervention. Follow up ultrasounds revealed decreased hydronephrosis in all patients. All patients but one patient have been pain free since surgery. One patient had one episode of flank pain while in college but follow up renal scan and ultrasound did not reveal any evidence of obstruction. Intraoperative times for robotic assisted pyeloplasties were 185-260 minutes (average 220.4). Laparoscopic times ranged from 205-280 minutes (average 216.7). All patients were discharged on post op day 2 except for the 3 that leaked.
Conclusion: In experienced hands there appears to be no difference in the results obtained between robotic assisted anastomosis or hand sewn anastomosis in laparoscopic pyeloplasty. Our results reveal that laparoscopic pyeloplasty in this group of patients yields results that are similar to the best results available with open surgery. We found that robotic assisted pyeloplasty is less fatiguing to the surgeon and gives the new surgeon the opportunity to broaden his horizon and perform suturing with minimal experience but it is not superior to hand sewn laparoscopic pyeloplasty. The time advantages gained with improved dexterity are lost with increased set up time and transition time.

S010

LAPAROSCOPIC PYELOPLASTY IN CHILDREN ? LEARNING CURVE VERSUS TYPE OF TECHNIQUE, Krishnasamy Selvarajan MS, Manickam Ramalingam MS,Kallappan Senthil MS,Ganapathy Pai MS, K.G.Hospital and Post Graduate Institute, Coimbatore, India

Reconstructive laparoscopic paediatric surgery like laparoscopic pyeloplasty is a challenging one. The techniques of laparoscopic pyeloplasty like transperitoneal colon mobilizing approach to PUJ; transperitoneal transmesocolic approach to PUJ, Retroperitoneoscopic pyeloplasty (lateral approach), Anterior approach to retroperitoneoscopic pyeloplasty were tried during the learning process.
Materials and Methods: From 2000 to 2005, 31 cases of laparoscopic pyeloplasty were done in the age group 3 months to 14 years; Transperitoneal approach (mobilizing colon) in 6 cases, transperitoneal transmesocolic in 20 cases, retroperitoneoscopic pyeloplasty (lateral approach) in 4 cases, retroperitoneoscopic pyeloplasty (anterior approach) in one case. These were done in the order mentioned above according to the learning of skills acquired in knotting and suturing. Retroperitoneal approach was tried after transperitoneal approach, as retroperitoneoscopy needs great skills (very limited space).
Results: Follow up ranged from 2 months to 5 years and revealed functioning of anastomosis in all 31 cases. Immediate postoperative complications were urinary ascites and paralytic ileus in 2 cases; and intestinal obstruction due to edema at anastomotic site in 2 cases. Anterior approach retroperitoneoscopy helped to avoid crowding of ports seen in lateral approach. Transmesocolic approach reduced time of exposure of PUJ. The average time needed to expose PUJ was 8 minutes after entering into abdomen (with a range of 2 minutes to more than 34 minutes).
Conclusions: Modified position namely ?Opisthotonus? position is very helpful to improve space.
Transmesocolic approach to exposure of PUJ is very quick and involves minimal tissue dissection.
Anterior approach for retroperitoneoscopic pyeloplasty reduced certain difficulties of lateral approach.
Over all, the results of laparoscopic pyeloplasty were comparable to open pyeloplasty.

S011

VIDEOASSITED PIELOPLASTY, THE FIRST 59 PROCEDURES., Edgar Morales-Juvera PhD, Jose Antonio Ramirez V. PhD,Elena Aguilar PhD, hospital of Pediatrics, National Medical Center, XXI, IMSS

INTRODUCTION; The Uretheropielic obstruction it is a frequent diagnosis, and the standard technique have been the Anderson Haynes procedure, we described the general outcome of the biggest series with the videoassited approach.
MATERIAL & METHODS; We identify all the patients operated from 1998 to 2004 identifying the rate of success, re-estenosis, surgical time, hospital stay, need of analgesics and complications.
RESULTS; 50 patients were identified of whom 12% were less than 28 days old, 46% were between 1 month to 1 year, 42% were older than 1 year. Seventy-six % were boys, vs. 24% girls. 13 patients had right obstruction, 28 patients. Had left, and nine patients bilateral obstruction (59 units operated) the surgical range time was 25 to 255 minutes. The only surgical com-

plication was a disruption of the UP junction repaired with no consequences. The only analgesic needed was paracetamol in 92% of the cases. The hospitality stay was less than 48 hrs in 64% of the cases, in all less than 72hrs.
The MAG3 renograms show no progression of the damage or increased function in 88%, only four patients required re-intervention.
CONCLUSION: the videoassited pyeloplasty, shows to be an effective technique, with an acceptable surgical time, it is an easily reproducible procedure, still being minimal invasive, and it is applicable in babies of less than 3 kg.

S012

TRANSPERITONEAL LAPAROSCOPIC VERSUS OPEN PYELOPLASTY IN INFANTS AND CHILDREN, Lisandro A Piaggio MD, Paul H Noh MD,T Ernesto Figueroa MD,Ricardo Gonzalez MD, A I duPont Hospital for Children, Wilmington, Delaware

INTRODUCTION: Laparoscopic pyeloplasty (LP) has become the standard procedure in adults with ureteropelvic junction obstruction. There are few pediatric series comparing open and laparoscopic procedures. Here we review our initial experience with pediatric LP and compare it to a cohort group of patients who underwent open pyeloplasty (OP).
METHODS AND PROCEDURES: Retrospective review of children undergoing pyeloplasty at our institution in the last 4 years. Demographic data, weight, surgical time and technique, hospitalization, analgesic need, complications and outcome were reviewed.
RESULTS: There were 50 patients (females/males): LP 19 (5/14) and OP 31(7/24). Mean age (range) was 88 months (3?216) for LP and 65 months (1.2?214) for OP. Mean weight (range) for LP and OP was 30 (5.5-74) and 20 (1.9?58) kilograms respectively. All patients underwent dismembered pyeloplasty. LP was done transperitoneally through 3 ports. An antegrade or retrograde pyelogram was done before the operation in the majority of the patients. Surgical time, hospitalization, analgesia requierement, failures and complications are resumed in the table below.

Mean surgical T	300 min	142 min
Hospitalization	2.7 days (1?4)	3.4 days (1?17)
Morphine mg/kg	0.37	0.55
Ketorolac mg/kg	0	1.2
Complications	0	5
Failures	2	4

Midle colum LP n = 19 , Right colum OP n = 31

CONCLUSIONS: In this series surgical time for LP was longer than OP but is decreasing with experience. Hospitalization was shorter and analgesic requirement was less in LP. Success rate was similar in both groups but there were more complications and reoperations in the open group. LP in infants and children is safe and has a similar success rate and fewer complications than OP.

S013

THE DEFLUX PROCEDURE REDUCES THE INCIDENCE OF URINARY TRACT INFECTIONS IN PATIENTS WITH VESICOURETERIC REFLUX, George M Wadie MD, Michael V Tirabassi MD, Richard A Courtney MD,Kevin P Moriarty MD, Baystate Medical Center Children's Hospital, Division of Pediatric Surgery, Tufts University School of Medicine, Springfield, Massachusetts, USA.

Purpose: To review the experience of a single institution with the Deflux procedure and assess its effectiveness in reducing the incidence of urinary tract infections (UTI) in children with vesicoureteric reflux (VUR).
Methods: After IRB approval, the charts of 100 patients with VUR , who presented between 6/2003 and 6/2005 , were prospectively reviewed. Data collected included: demographics, number of preoperative and postoperative UTI's, radiologic grade of VUR on a voiding cystourethrogram (VCUG) and the presence of VUR on a radionuclide VCUG 3 months after the procedure. Patients were continued on suppressive doses of oral antibiotics until urine culture at 3 months was negative and no reflux demonstrated on VCUG. Student?s t-test was used for data analysis.
Results: Mean age was 3.8 +/- 0.3 years, 76% were girls. From 155 ureters treated, 10 (6.5%) had Grade I reflux, 42 (27.1%) Grade II, 76 (49%) Grade III, 25 (16.1%) Grade IV and 2 (1.3%) Grade V. A 2nd injection was required in 22 ureters (14.2%). The overall success rate of the procedure (Grade 0 reflux at 3 months) was 77.4% after the 1st injection and 83.9% after a 2nd injection. Success rate per grade was: 100% for Grade I, 88.1% for Grade II, 86.8% for Grade III, 64% for Grade IV and 50% for Grade V. Mean follow up was 446 +/- 20 days. Mean volume injected/ureter was 0.6+/- 0.03 ml. Thirteen patients had UTI's after the procedure compared to 75 before. There was a 5 fold reduction in the incidence of UTI's/year from a mean of 0.68+/-0.09 pre to 0.12+/-0.04 postinjection (p=0.001). The majority of UTI's were caused by E Coli (74% pre- and 82% post-injection).
Conclusion: We conclude that the Deflux procedure is effective not only in eliminating VUR on radiologic studies but also in reducing the incidence of UTI's and antibiotic use in children with VUR.

S014

LAPAROSCOPIC LYMPHATIC SPARING VARICOCELECTOMY IN THE ADOLESCENT MALE: IS IT AS EFFECTIVE AS MICROSCOPIC VARICOCELECTOMY?, I Franco MD, E F Reda MD, Pediatric Urology Associates and Section of Pediatric Urology at New York Medical College , Valhalla, NY

The ideal operation for the management of varicoceles in the adolescent male has been bantered about for many years. It is well acknowledged that the Palomo procedure with it?s en masse transection of vessels has a negligible recurrence rate for varicoceles but the hydrocele rate is unacceptably high when compared to Microscopic varicocelectomy. There have been several encouraging reports of lymphatic preservation attempted at the time of laparoscopic varicocelectomy (LV). Can this procedure provide us with the same negligible recurrence rates that are seen with Palomo and the same negligible hydrocele rate seen with MV?
Method: We set out to perform lymph sparing Palomo LV over a 29 month period. Over this period of time 40 patients underwent 41 LV. One patient has not had follow up. One patient a bilateral LV. Lymphatic sparing LV was performed on 28, while in 7 the lymphatics could not be identified and in 5 no attempt to preserve lymphatics was made. The average age of the patients was 14.8 year. There were 5 patients who had surgery for pain and the rest had asymmetry. The average preop testis size was 16.9 cc on the right and 13.8 cc on the left. 38 of 40 patients had grade 3 varicoceles. The average f/u was 5 months with the maximum f/u of 14.9 months.
Results: We were able to identify lymphatics and preserve them in 28 of 35 patients in which an attempt was made to find the lymphatics. In the 28 patients that had lymphatic sparing LV no hydroceles were encountered. In patients that had an attempt to find the lymphatics but they could not be identified we found one small hydrocele. In the group that no attempt to preserve the lymphatics was made we had 3 hydroceles (3/5). In the patients that the artery was preserved at the time of varicocelectomy we had 1 recurrent varicocele (1/8).
Conclusions: In is apparent from this small series that lymphatic preservation is feasible without the use of dyes to identify the vessels. As the study progressed it became easier to isolate the lymphatics and the last 10 procedures have all met with success in identifying lymphatics and preserving them. It is apparent that when no attempt to preserve the lymphatics was made the hydrocele rate was very high. Our results are encouraging but the length of follow up needs to be longer to be able to say that LV is comparable to MV with respect to hydrocele formation.

S015

DYE-ASSISTED LYMPH VESSELS' SPARING LAPAROSCOPIC VARICOCELECTOMY, AndrzeJ Golebiewski PhD, Marek Krolak PhD,Piotr Czauderna PhD, Medical University of Gdansk, Department of Pediatric Surgery and Urology

PURPOSE: Hydrocele formation, the main postoperative com-

plication of laparoscopic varicocelectomy is caused by disruption of the lymphatic drainage. Identification of lymphatic vessels of the testis and tunica vaginalis and their preservation should decrease the incidence of this complication. The aim of the study was to evaluate prospectively efficacy and safety of the blue dye (patent blue) injection used to identify and spare lymphatic vessels during laparoscopic varicocelectomy.
MATERIAL AND METHODS: Forty boys affected by varicocele grade III (average age 14,3 years, range 12-16 years) underwent left-sided laparoscopic varicocelectomy. Half of the patients were randomly assigned to lymphatic non-sparing surgery (LNS) group, and 20 patients to lymphatic sparing (LS) group. Immediately before surgery in LS group 2 mL of patent blue was injected under the tunica dartos on the left side. The blue?stained lymph vessels were readily visualized and preserved during varicocelectomy.
RESULTS: All varicocelectomies were performed by laparoscopy. Of 20 patients from LS group lymphatic vessels were visualized in 18 (90%). In the remaining two (10%) the lymphatics could not be identified clearly. No adverse reactions or postoperative scrotal haematoma were found. At a mean follow-up of 7 months (range, 3 to 14 months) no recurrent varicocele or testicular volume reduction were detected. Postoperative hydrocele was observed in three patients from NLS group and one case required a surgical repair. No patient from LS group has developed a reactive hydrocele, yet.
CONCLUSIONS: The blue stained lymphatic vessels could be readily visualized and preserved during the laparoscopic varicocelectomy. This method seems to prevent the development of postoperative hydrocele in adolescents undergoing laparoscopic varicocelectomy. In order to confirm its usefulness inclusion of a larger series of patients and longer follow up are mandatory.

S016

LONG TERM RESULTS AFTER LAPAROSCOPIC INGUINAL HERNIA REPAIR IN CHILDREN, Micha Bahr MD, Christian Baur, Konrad K Richter MD, Department of Paediatric Surgery, University Medical Centre Friedrich-Schiller-University Jena/

Background: Laparoscopic inguinal hernia repair has become a popular method since it has first been published in 1998. It has been suggested that this minimally invasive surgery is a safe procedure with better cosmetic results compared to open hernia surgery. However, few follow-up data are available that assessed recurrence rates and complications. Therefore, we evaluated the long term results after laparoscopic hernia repairs performed at our institution.
Materials and Methods: Between June 1997 and November 2003 428 laparoscopic inguinal hernia repairs have been performed in children at our department. Date of birth, hernia side, suture material, operation time and special intraoperative findings were documented. Recurrence rates and parents/patients satisfaction levels regarding cosmetic results, recovery time and postoperative complications were assessed using a questionnaire that was sent to the parents of each patients in August 2004.
Results: 396 questionnaires were returned. The median follow-up time was 3,88 years (range 1,06 ? 7,54 years). Thirteen patients had a direct inguinal Hernia (3.2%), 2 patients showed a hernia en pantaloon (0,5%). Thirty six patients (9.1%) developed a recurrent hernia that required re-operation. There were no differences in recurrence rates among the different surgeons (4). Parent?s satisfaction with this laparoscopic technique and cosmetic result were very high. Four patients (1%) developed hydroceles after laparoscopic hernia repair and one patient showed an atrophy of the right testicle (0.25%).
Conclusion: Thirty six out of 396 patients (9,1%) developed a recurrence after laparoscopic hernia surgery that required re-surgery (median time 3,88 years). Implications of suture material, learning curve, and surgical technique on recurrence rates and complications are still controversial. Longer term follow-ups are required to further assess the effectiveness of laparoscopic hernia repair in children.

S017

LAPAROSCOPIC INGUINAL HERNIA REPAIR IN CHILDREN: A NEW TECHNIQUE (211 PATIENTS), Dimitriu Carla MD, Becmeur Francois MD, Talon-Lacreuse Isabelle MD,Moog Raphael MD,Mefat Laure MD,Kauffmann Isabelle MD, Hôpitaux Universitaires de Strasbourg, Department of Paediatric surgery

Aim: laparoscopic treatment of congenital inguinal hernia in children still remains controversial. Many reports propose a purse-string suture without dividing the sac.
This series aimed to evaluate another technique mimicked every steps of the conventional open surgery.
Patients and Methods: since 2000, 211 consecutive patients who were at least 2 years-old were operated on for hernia repair by a laparoscopic approach in a one-day surgery. Technical details and clinical results are reported.
Results: 252 sacs were divided in 211 patients (161 boys and 50 girls). Forty-one bilateral hernias which were diagnosed before surgery in 15 cases and during laparoscopy in 26 cases (24% among girls and 8.5% among boys) were repaired. Thirty-two controlateral dimples were left and not repaired (1 had a metachronous hernia 10 months later). Two boys presented an additional crural hernia. One was treated by a vicryl® plug. One of 6 boys who presented a direct hernia was treated laparoscopically and 5 with a conversion by an inguinal approach. Seven umbilical hernias were repaired during the same procedure. Seven testis were fixed in a dartos pouch at the end of surgery. Mean operative time was 23 minutes in girls and 28 minutes in boys for unilateral hernias, 30 minutes in girls and 40 minutes in boys for bilateral hernias. Every child was clinically evaluated 6 months after surgery. One recurrence was observed due to an incomplete dissection. There was no complication such hydrocele, testicular atrophy or iatrogenic cryptorchism.
Conclusion: Dividing the sac and suturing the peritoneum is feasible safe and efficient by laparoscopy. Compared with other techniques previously reported either without any dissection of the sac or any ligature after dissection, our technique seems to be sure. It is not time-consuming and does not require any special laparoscopic skill. Laparoscopic hernia repair allows detection of every kind of groin hernia and repair of controlateral hernias during the same procedure.

S018

LAPAROSCOPIC EVALUATION FOR CONTRALATERAL PATENT PROCESSUS VAGINALIS IN CHILDREN WITH UNILATERAL INGUINAL HERNIA, Patricia A Valusek MD, Troy L Spilde MD, Shawn D St. Peter MD,Daniel J Ostlie MD,Walter M Morgan III MD,John W Brock III MD,George W Holcomb III MD, Children's Mercy Hospital

Background: Management of the contralateral inguinal region in children with unilateral inguinal hernia remains controversial. Several methods for evaluation for a contralateral patent processus vaginalis (CPPV) have been described. However, the role of laparoscopy in evaluation for CPPV remains unclear. We report the results of an investigation of 1625 consecutive children younger than 10 years of age undergoing inguinal hernia repair between May 1992 and January 2003.
Methods: One-hundred ninety-three (193) of the 1625 patients were excluded from analysis due to the existence of bilateral inguinal hernias pre-operatively which left 1432 patients as the study group. The contralateral inguinal region was examined under general anesthesia (EUA) and the operating surgeon noted whether or not a CPPV was suspected. All patients then underwent laparoscopic evaluation of the contralateral inguinal region at the time of unilateral hernia repair.
Results: Seventy-three patients (5.4%) had hernia sacs that were too thin to allow insertion of the telescope but laparoscopy was successful in 1359 cases (94.6%). A CPPV was identified in 548 of the laparoscopically examined children (40.3%). At EUA, it was predicted that 427 of the 1432 patients would have a CPPV. Laparoscopy confirmed the presence of a CPPV in 188 (44%) of the children predicted to have a CPPV by EUA. Conversely, EUA was not suspicious for a CPPV in 937 of the examined children and the absence of a CPPV was confirmed by laparoscopy in 571 of these children (61%); however, a CPPV was found in 361 (39%) of this group.

Conclusions: We conclude that examination under anesthesia is a poor predictor for the presence or absence of a contralateral patent processus vaginalis. Laparoscopy can reliably evaluate the contralateral inguinal region and is the best method to evaluate for a contralateral patent processus vaginalis.

S019

LAPAROSCOPY-ASSISTED ONE-STAGE TRANS-SCROTAL ORCHIOPEXY FOR ALL TYPES OF MALDESCENDED TESTES, Masao Endo MD, Miwako Nakano MD, Toshihiko Watanabe MD, Dpartment of Pediatric Surgery, Saitama City Hospital

INTRODUCTION: The principle of the orchiopexy for undescended testis consists of closure of the patent processus vaginalis (PPV) high at its neck and placement of the pedunculate testis in the dartos pocket. Laparoscopic PPV closure with an Endoneedle that we had developed conducted us to its application to the treatment of testicular malposition.

METHODS: The procedures consist of diagnostic/therapeutic laparoscope and trans-scrotal orchiopexy. In laparoscopic procedures, evaluation of the internal inguinal ring, complete mobilization of the testicular vessels and spermatic cord so as to obtain medially shifted and sufficiently elongated pedicle in intra-abdominal/high canal testis, and closure of the PPV are performed. The trans-scrotal orchiopexy is carried out through a skin incision made at the uppermost of the scrotum and a dartos pocket made downward to the bottom of the scrotum. The testis is drawn out through this incision passing the lowest portion of the PPV. The pedicle is detached from surrounding cremaster muscle and tenacious connective tissues, and stitched to the dartos layer, which is retracted cranially by a hook, under gentle traction of the testis downward. The essential points of each procedure will be shown with motion pictures.

RESULTS: Since May 2000, this procedure has been carried out in 99 boys with maldescended testis, including 15 intra-abdominal/peeping, 44 canal, 28 low canal/high-scrotal with hernia/hydrocele, and 12 retractile testes. The age ranged from 7 months to 12 years with a median of 1.9 years. In all cases the testis was delivered successfully, and continued to descent toward the bottom of the scrotum postoperatively. No testicular atrophy or hernia formation has occurred, and cosmesis in all patients is excellent.

CONCLUSIONS: This procedure may provide one-stage diagnostic and therapeutic maneuver for all nonpalpable and palpable undescended testes, promising secrecy of the operation.

S020

THE STAB WOUND ACCESS TECHNIQUE (SWAT) IN PEDIATRIC LAPAROSCOPIC SURGERY, Benjamin J Rogoway MD, James M DeCou MD, DeVos Children's Hospital

Introduction: Laparoscopic ports take up space, frequently require extra fixation, and are costly. We have minimized the use of ports in pediatric patients by using a stab wound access technique (SWAT), in which one port is used for insufflation, while all other instruments and even the laparoscope are passed through stab wound incisions without ports.

Methods: We reviewed our experience with SWAT over a 14-month period, and compared SWAT patients to conventional all port (AP) patients. Data included patient age, weight, procedure, number of ports and stab wounds used, and complications.

Results: 132 patients underwent a laparoscopic procedure by one surgeon during the study period. SWAT was utilized in 67 (51%), AP in 65. We found SWAT to be easier and more advantageous in smaller patients. Average age (3.3 vs. 12.2 years) and weight (17.5 vs. 61.9 kg) were less for SWAT than AP patients. Nissen fundoplication (n=27) was the most common SWAT procedure, followed by pyloromyotomy (18), and appendectomy (12). There were no complications related to the stab wound or port sites. The total number of stab wounds used was 192, reflecting a hospital cost savings of $12,211, or $182 per patient.

Conclusion: SWAT is a safe, cost-effective alternative to using ports at all sites. SWAT appears to be more practicable in smaller patients, but is safe and feasible in larger patients as well.

S021

LESSONS LEARNED FROM MAJOR ENTRY RELATED COMPLICATIONS DURING LAPAROSCOPY, Henri Steyaert MD, Jean-François Colombani MD, Ricardo Guana MD, Jeff Valla PhD, Lenval fundation for Children Nice and CHU Fort de France

This study is a review of conditions and circumstances associated with 7 major bowel and vascular injuries during trocar introduction. All cases occurred in the authors operating rooms were more than 500 cases are operated each year by laparoscopy.

Results: We encountered 2 complications during introduction of a primary trocar: one aorta injury (blind technique) and one bowel perforation (scissors during an open procedure). During introduction of a secondary trocar in the groin area we had 3 iliac vessel injuries and 2 bowel perforations.

One great vessel injury was treated with simple compression. All other cases needed direct conversion with one suturing of the aorta, one common iliac vein and one internal iliac artery reconstruction. Diagnosis of bowel perforations were all delayed and needed secondary laparotomy except in one case were the bowel was extracted trough the umbilicus. All planned operations were normally completed during the initial procedure. Pathologies involved were of various origin: 2 appendicitis, 1 residual abscess after primary appendectomy, 1 impalpable testis, 1 inguinal ring control, 1 intestinal duplication and 1 vesico-ureteral reflux (pneumovesicoscopic Cohen operation).

All patients had uncomplicated recovery. The patient with aorta injury needed to be transfused. There were no litigated cases.

Discussion: The incidence of trocar-induced major organ injury is very small but may lead to important complications including death. It may happen as well during introduction of the primary as the secondary trocars. Authors reviewed their cases and examined also litigated cases insured by one of the biggest medical insurance companies in France in order to give some advice about solutions able to decrease the number of major injuries. Vascular injury is usually obvious but has absolutely to be confirmed by opening of the retro peritoneum. If not, death by multiple organ failure is frequent. Delayed diagnosis of bowel injury leads of course to peritonitis but is not related to increased mortality in children.

Conclusion: Each hazardous introduction of a trocar needs a thorough inspection of the concerned area. In authors mind a blind introduction of the first trocar and the use of a Veress needle have to be avoided except ,perhaps, in obese patients. Introduction of secondary trocars in groin area has to be very careful and probably not to close to the iliac vessels.

S022

SUCCESSFUL THORACOSCOPIC REPAIR OF CDH IN NEWBORNS, Marjorie J Arca MD, David M Gourlay MD, Thomas T Sato MD, Terrance Derks BS, Adam B Goldin MD, Kathy Curro RN, Children's Hospital of Wisconsin and Medical College of Wisconsin

OBJECTIVES: We seek to determine selection criteria which may improve the chances for a successful thoracoscopic repair of congenital diaphragmatic hernia (CDH) in newborns. METHODS: An IRB-approved (05/158) chart review of newborns with posterolateral CDH treated at CHW from May 2004 to August 2005 was conducted. The single institution retrospective case-series review identified infants who underwent thoracoscopic CDH repair and a cohort of age-matched CDH patients who were selected to open repair during the same time period. We compared pre-operative anatomic, physiologic, and hemodynamic characteristics between the groups and analyzed the post-operative courses of both groups. RESULTS: Thirteen newborns with CDH were admitted to CHW during the study period. Of 8 attempted thoracoscopic repairs, one was converted to open due to hypoxia with CO2 insufflation. Five additional patients had open CDH repairs. A two-sided Wilcoxon signed rank test was used to assess for statistical significance.

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Mean Variable (range)	Thoracoscopic (7)	Open (6)	p value
Ave Birth Wt (Range)	3.07 (2.2-3.6)	2.53 (1.9-3.9)	0.17
Op Date (DOL)	8 (2-29)	23.5 (5-50)	0.05 *
Oxygenation Index (OI)	12.5 (9.1-15)	29.1 (17.9-44)	0.0016*
Ave Apgar 5"	8 (8-9)	6 (1-9)	0.05*
Days Hosp Stay	25 (5-44)	102 (45-186)	0.002*
Extubated (POD)	6.8 (1-19)	26.2 (13-37)	
Days O2 post-extubation	6 (0-18)	38.2 (12-133)	0.06
Cardiac anomaly	0	2	
# Pts diaphragm patch	1	5	
# Deaths	0	1	
NG above/below diaph	1/6	2/4	

CONCLUSIONS: Characteristics favorable to thoracoscopic CDH repair may include higher five-minute Apgar scores and lower Oxygenation Index. Infants with thoracoscopic repairs had earlier operations and shorter hospital stays post-operatively.

S023

THORACOSCOPY AND TREATMENT OF COMPLEX SCOLIOSIS, Hossein Allal MD, Tayeb Bentahar MD,Alain Dimeglio PhD, Pediatric Videosurgery Division and Department of Orthopedic Pediatric Surgery, University of Montpellier, Lapeyronie Hospital

Objetive: Anterior approach of the spine is recommended in complex scoliosis. There are two main indications: Freezing the growth-plates of the vertebral in severe scoliosis before puberty and release the vertebral disk in order to obtain a better reducibility of the curvature.
Anterior surgery is usually combined with a posterior instrumentation and arthrodesis of the spine. The anterior approach by thoracoscopy can increase the effectiveness of this complex surgery.
Methods: 32 Anterior Thoracoscopic approachs of the spine(23 girls and 9 boys), have been performed since 2002.
20 idiopathic, 6 congenital, 6 neurological scoliosis. For idiopathic and neurological scoliosis, the mean age was 14 years old, and for congenital scoliosis the mean age was 4 years. Angulation varies from 40° to 80°. Anterior Thoracoscopic approach is performed in lateral position of the patient with selective intubation.
Results : The mean surgical duration of the procedure was 40 mn. In 19 cases, release of the disc was performed and 13 cases a sterilisation of the growth plates was undergone. No complication was observed during the surgical procedure. A chylothorax has been controlled by drainage after thoracoscopic approach. Reducibility of the curve was obtained in 90% of cases (17 out of 20). After posterior instrumentation reduction of the scoliosis was almost complete (less than 10°). Only in one case with Rett syndrome has been controlled by a sterilization of all the growth-plates from T1 to L4 and this anterior approach of the lumbar spine has been performed also by Retroperitoneoscopy.
Conclusions: This effective surgery is a perfect illustration of a team of surgeons working in the same direction and combining their experience. With this strategy, morbidity is very low ambitious and complex surgery can be performed.

S024

THE INTEREST OF THORACOSCOPY IN LONG GAP ESOPHAGEAL ATRESIA, Hossein Allal MD, Manuel Lopez MD, Nicolas Kalfa MD, Dominique Forgues MD,Marie Pierre Guibal MD,RB Galifer PhD, Pediatric Videosurgery Division and Department of Pediatric Surgery, University of Montpellier, Lapeyronie Hospital

Objective: Esophageal reconstruction for long gap esophageal atresia (LGEA) is still controversial and remains a surgical challenge. The authors describe two cases, successfully managed by thoracoscopy
Methods: During de last 3 years, two patients (37 and 40 weeks gestation, weights 2,3kg and 3,2kg respectively) with LGEA (Ladd Type 1 and 4) were operated in our unit by thoracoscopy. The first case was at 2 months of life and the second was at 1 Day of life. In both cases the primary anastomosis was impossible after full esophageal mobilization. We performed a preliminary traction sutures intraluminally, under tension, on each atretic pouch of the esophagus to approximate them, in the waiting period to allow for spontaneus esophageal growth for primary esophageal anastomosis. In the first case, laparoscopic assisted was associated for mobilized lower esophageal.
Results: In both patients a spontaneus recanalization was viewed at two and seven days postoperative. Oral feeding was started two days later. Both patients subsequently required esphageal resection of a resultant stricture at six and eighteen months of life, and required several esophageal dilatations. Now the patients can swallow thrive normally, preserving the native esophagus. Both of them developed a gastro-esophageal reflux and required laparoscopic Nissen fundoplication
Conclusions: This technique avoids an eventual esophageal replacement and gives a better functional outcome. Our limited experience with this technique provides another alternative for LGEA.

S025

THORACOSCOPIC MANAGEMENT OF PURE OESOPHAGEAL ATRESIA (TYPE A), Gordon A MacKinlay MD, Fraser D Munro MD, Alistair C Dick MD, Stephen R Potts MD, Girish Jawaheer MD, The Royal Hospital for Sick Children, Edinburgh, The Royal Belfast Hospital for Sick Children and Birmingham Children's Hospital

Introduction: The first successful thoracoscopic repair of oesophageal atresia was by Lobe and Rothenberg at the Berlin IPEG meeting in 1999. Since then several centres have successfully achieved thoracoscopic repair of oesophageal atresia with a distal tracheo-oesophageal atresia (Type C) but there are few reports of Type A repairs. We report the successful outcome in 4 such cases in three institutions in UK.
Methods: A surgeon from a unit with experience in thoracoscopic oesophageal atresia repair was present in all cases. All patients were placed semi-prone on the operating table for right-sided thoracoscopy. Three 5mm ports were used and once the oesophageal ends were mobilised, intracorporeal suturing with tumbled square knots facilitated the approximation of the ends. The first case was a female infant born in August 2003 who underwent primary thoracoscopic repair at age 4 months. Subsequently 2 more females underwent thoracoscopic repair at 3 and 4 months and a boy at 3 months. In one case the gap radiologically was more than 5 vertebral bodies.
Results: In all cases successful primary repair was achieved. In the first case there was a slight leak at the anastomosis radiologically but this settled conservatively and a subsequent anastomotic stricture required dilatations over the course of the first year. She feeds well and her parents are delighted with her progress. The second case showed some anastomotic narrowing at 10 days post-op but no leak. An upper pouch H-type fistula required division a month later via a cervical approach and she underwent a laparoscopic fundoplication at 11 months and required balloon dilatations of her anastomosis. Case 3 also had a leak and anastomotic stricture requiring balloon dilatations and may require a jejunostomy for feeding as he has poor airway protection and recurrent chest problems (he has microcephally and a chromosome 1p24 deletion) The last case had an anastomotic leak which was managed conservatively and subsequent vomiting due to poor gastric emptying initially required feeding via a gastrojejunostomy tube. The vomiting settled after a pyloroplasty and she was fit for discharge home 11 weeks after the initial oesophageal repair.
Conclusions: Primary thoracoscopic repair of type A oesophageal atresia is feasible although minor anastomotic leakage and stricture are common. Overall however the long term outcome is favourable and the patients own oesophagus is preserved.

S026

SUBPECTORAL CO2 INSUFFLATION A NEW HYBRID TECHNIQUE FOR MINIMAL ACCESS REPAIR OF SIGNIFICANT PECTUS CARINATUM IN ADOLESCENTS, Klaus Schaarschmidt MD, Andreas Kolberg-Schwerdt MD, Michael Lempe MD, Frank Schlesinger MD, Helios Centre of Pediatric and Adolescent Surgery Berlin-Buch

Objective of the study: Minimally invasive Nuss repair of pectus excavatum has stood the test of time, but no comparable

method for pectus carinatum has been devised so far. Based on a personal experience of 132 conventional Hegemann Willital pectus carinatum repairs (6/84-6/2001) and a new method for correcting prominent costal arches in Nuss repairs, this study intended to establish a new method of endoscopically assisted minimal access repair of pectus carinatum.
Methods and procedures: From 2/2001 to 6/2004 the method was employed in 43 children and adolescents (37 male 6 female, three redos after unsuccessful Ravitch) aged 16.7 ± 3.8 y (12-36y) with a follow up of 33.8 ± 9.4 mo (22-58 mo). So far minimal access repair of pectus carinatum was limited by the need of an extensive dissection of sternum and entire ventral thoracic cage ranging from one axillary line to the opposite one. This was achieved by bilateral CO2-inflation of the submuscular space and endoscopic dissection of both serratus and pectoral muscles from the ribs and sternum from xiphoid to jugulum. Thus the entire dissection was performed endoscopically. Then multiple segmental rib resections and sternotomy were performed under endoscopic assistance in a semiopen way from a 3-5 centimetre midline (in girls submammar) incision. Two transsternal struts were introduced and fixed pericostally in the same manner.
Results: All repairs were possible by minimal access with no conversion in pectus carinatum of an index of 0.68-1,89. There was one postoperative seroma managed conservatively. 37 patients judged their postoperative result as excellent, six as good, in 26 patients the struts were removed uneventfully with no recurrence so far.
Conclusions: The method is feasible, safe, effective and truly a minimal access procedure even in the most severe cases. Endoscopically assisted minimal access repair of pectus carinatum could be established and standardized. So far the results of are at least as good as the conventional method, however this is an early experience and the follow up is to short. Technical details are discussed.

S027

THORACSCOPY AND SOLID TUMORS IN CHILDREN. MULTICENTRIC STUDY, Guye Emmanuelle, Lardy Hubert, Piolat Christian, Bawab Fariz, Becmeur Francois, Dyon Jean-Francois, Marteau Marion, Lavrand Frederic, Lefebvre Francis, Podevin Guillaume, Reinberg Olivier, Varlet Francois, CHU Saint-Etienne - Chirurgie Pediatrique - Professor F.Varlet

Purpose : The aim of this study was to evaluate the efficacy and the safety of thoracoscopy in the treatment of thoracic solid tumors in children.
Methods : a retrospective and multicentric review of 139 thoracoscopies was made.There were 72 males and 62 females with a median age of 9.2 years (3 months - 17 years). The median follow-up was 4.5 years. The procedures were resection of pulmonary lesions or biopsy. In several cases, conversions to thoracotomy were necessary. Complications, biopsy results and outcomes were reviewed.
Results : 139 procedures were performed in 134 children. Fifty primitive tumors were managed : 20 had a complete resection, 21 biopsies and 9 cases an open conversion was necessary. Among the 20 complete resections, 85% of tumors were neurogenic tumors (neuroblastoma, ganglioneuroma). Three complications occured : 2 chylothorax and 1 Claude-Bernard Horner syndrome; all 3 were regressive. The mean follow-up was 3 years and any reccurence was noted. Among the 21 biopsies, there were 9 neuroblastomas (for N-myc amplification) and 12 malignant hemopathies. In every cases, the diagnosis was obtained. Eighty-nine metastasis were managed : 34 had a complete resection, 41 had biopsies and in 14 cases, a conversion was necessary. Among the 34 complete resections, more than the half was metastasis from bone tumors. The median follow-up was of 4 years and 5 pulmonary reccurences had complicated the evolution. Four deaths occured and 2 had lung metastasis.
Conclusion : thoracoscopy is a safe and effective method to evaluate and to resect the solid tumors, especially the neurogenic tumors. The resections of the metastasis are possible under thoracoscopy, for metastasis of nephroblastoma, but thoracotomy is always suggested for other metstasis. However, with the PET scan and the new CT scan, which can detecet very small lesions, the indications for resection of metastasis will be able to change. Any tumoral reccurence at thoracostomy tube insertion sites was noted.
Key-words : thoracoscopy, solid tumors, neuroblastoma, ganglioneuroma, metastasis, child.

S028

EARLY EXPERIENCE OF PAEDIATRIC THORACOSCOPIC LOBECTOMY IN THE UK, Robin G Garrett-Cox MD, Gordon A Mackinlay MD, Adil Aslam MD, Fraser D Munro MD, Royal Hospital for Sick Children, Edinburgh and Addenbrookes Hospital, Cambridge

Objective: To report the early experience of paediatric thoracoscopic lobectomy in two United Kingdom centres (Royal Hospital for Sick Children, Edinburgh and Addenbrookes Hospital, Cambridge).
Methods: 12 patients between Feb 2000 and Nov 2005 were treated with a lobectomy for pulmonary disease.
Results: Diagnoses included 7 Congenital Cystic Adenomatous Malformations (CCAM), 4 patients with bronchiectasis and 1 thoracic mature teratoma. The patients ages ranged from 8 months to 15 years. 4x left lower lobe, 3x right lower lobe, 3x left upper lobe, 1x right upper lobe and 1x right middle lobe resections. In all patients a thoracoscopic lobectomy was attempted. In all cases the lobectomy was completed, however in 6 patients conversion to either VATS or open thoracotomy was required.
Of note 9 out of the 12 patients had had previous lung infections prior to lobectomy. 5 out of 6 that required conversion to VATS or open thoracotomy had had significant previous pulmonary infection causing hilar lymphadnopathy and adhesions that complicated dissection. The other case requiring conversion to thoracotomy had abnormal hilar anatomy with an incomplete oblique fissure.
One patient required a further procedure of insertion of chest drain following a pneumothorax occuring at the time of the removal of the previous chest drain.
Conclusions: Patients with previous history of pulmonary infection can cause difficulty in dissection of the hilum that can necessitate conversion to VATS or open thoracotomy. Of note in previously published series by Albanese CT et al, J Pediatr Surg 2003 Apr;38(4):553-5 14 patients (100%) with CCAM had successful thoracoscopic lobectomies, however there were no patients that had had preceding pulmonary infections.
Infection prior to lobectomy can cause difficulty in completing the procedure safely thoracoscopically. Consideration of patients with pulmonary disease for lobectomy should be made prior to the onset of infectious complications.
Thoracoscopic lobectomy can still be performed in patients with a preceding history of infectious complications though a higher rate of conversion is likely.

S029

ENDOSCOPIC EXCISION OF BENIGN FOREHEAD MASSES: A NOVEL APPROACH FOR PEDIATRIC GENERAL SURGEONS, Sanjeev Dutta MD, H. Peter Lorenz MD, Craig T Albanese MD, Lucile Packard Children's Hospital, Stanford University

Objective: Benign tumors of the brow and forehead are commonly managed by pediatric general surgeons by excision through an overlying incision. Cosmetic results in children can be suboptimal. Plastic surgeons have utilized endoscopic brow lift techniques for removal of these lesions. We review our experience after adoption of this endoscopic technique in a pediatric general surgery practice.
Methods: A retrospective chart review of eight consecutive outpatient procedures (5M:3F; age range 5 mos. to 12 yrs.) from March to October of 2005 was perfomed. Six patients had lesions located on the lateral brow (4 left, 2 right), one patient had a lesion on the left mid forehead, and one patient had a nasoglabellar cyst. All procedures were performed using endoscopic browlift equipment through a single small scalp incision 2 cm posterior to the hairline. Outcome measures included need for conversion, operative time, cosmetic outcome, and complications.
Results: All lesions (6 dermoid cysts and 2 pilomatrixoma) were successfully excised endoscopically. Mean operative time

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was 61 minutes (range 25 to 90 minutes). There were no intra- or postoperative complications. All families were pleased with the cosmetic outcome.
Conclusion: This case series demonstrates that endoscopic excision of forehead masses is a safe and efficacious procedure in the hands of pediatric general surgeons.

S030

OUTCOMES FOLLOWING LAPAROSCOPIC SURGERY IN YOUNG CHILDREN WITH SEVERE CYANOTIC CONGENITAL HEART DISEASE, Bethany Slater MD, Shawn Rangel MD, Chandra Ramamoorthy MD, Claire Abrajano RN, Craig T Albanese BA, Stanford University Medical Center and Lucile Packard Children's Hospital

Introduction: Laparoscopy has advanced the surgical care of children for a variety of pediatric surgical diseases. However, safety profiles for laparoscopic interventions in children with cyanotic congenital heart disease (CCHD) have not been well described. The purpose of this study was to clarify this issue by reviewing our experience with laparoscopy in patients with a variety of cyanotic cardiac anomalies.
Methods and Procedures: We conducted a single-institution, retrospective review for all children CCHD who underwent a laparoscopic procedure over a three year period ending March 2005. All procedures were performed using standard laparoscopic instrumentation. Insufflation pressures ranged from 8-12 torr using low flow rates. In addition to standard monitoring, arterial line monitoring was used in all patients. Data were collected regarding baseline patient characteristics, palliative cardiac operations, laparoscopic procedures, and postoperative complications.
Results: Nineteen patients with CCHD underwent a total of 20 laparoscopic procedures (12 fundoplications, four intestinal procedures, four gastrostomy tube insertion). Cardiac anomalies included hypoplastic left heart syndrome (13), tetrology of fallot (3), tricuspid atresia (1), and transposition (2). Median age at time of surgery was two months (range: 1d-6yr) and median follow-up for all patients was six months. There were a total of seven complications, including cellulitis at the g-tube site (3), wound infection (1), urinary tract infection (1), line sepsis (1), and postoperative obstruction from incompletely excised Ladd?s bands (1). There was one conversion to an open procedure due to adhesions, but no procedures were converted or aborted due to hemodynamic lability. There were no operative mortalities.
Conclusions: From this experience, we conclude that laparoscopy is well tolerated and can be performed safely in patients with a wide variety of cyanotic heart lesions. However, the need for a multidisciplinary operative approach to ensure optimal outcomes in these critically ill babies cannot be overemphasized. Central to this is the availability of a pediatric anesthesia team skilled in the management of complex cardiac anomalies.

S032

BLEEDING JEJUNAL DIEULAFOY PSEUDOPOLYP: CAPSULE ENDOSCOPIC DETECTION AND LAPAROSCOPIC TRANS-UMBILICAL POLYPECTOMY, Sai Prasad TR MD, Kwang Hsien Lim MD, Kiat Hon Lim MD, Wei Sek Hwang MD, Te-Lu Yap MD, Departments of Paediatric Surgery, Paediatric Medicine and Pathology, KK Women's and Children's Hospital, Singapore

Objectives: To present a case of obscure gastro-intestinal bleeding (GIB) due to a solitary jejunal Dieulafoy pseudopolyp in a child, diagnosed on capsule endoscopy (CE) and successfully treated by laparoscopic trans-umbilical polypectomy.
Methods: Case report
Results: A 13-year-old boy presented with complaints of giddiness for 2 days? duration. The clinical examination was essentially normal except for pallor and malenic stools on rectal examination. The hemoglobin concentration was 7.5g/dl. Esophagogastroduodenoscopy and 99mTechnetium scintigraphy was normal. CE revealed a solitary jejunal polyp at a distance of 90-100cm from the duodenojejunal junction. The child was subjected to 3 port laparoscopic exploration; 10mm umbilical camera port inserted by open Hasson?s technique and two 5mm working ports in the left iliac fossa and the suprapubic region. The small bowel loops were walked from the duodenojejunal junction distally looking for the external signs of the intraluminal polyp such as the bowel wall indentation and bluish or reddish discoloration due to bleeding. The jejunal segment, which was suspicious for the intraluminal polyp, was brought out through the umbilical incision. Enterotomy and wedge polypectomy was performed extracorporeally. The histopathological examination revealed a pseudopolyp with a large aneurysmal vessel in the submucosa perforating through the mucosa, suggesting Dieulafoy angiodysplasia. The postoperative recovery was uneventful and the child is well at 6 months after the surgery.
Conclusions: Our case represents the application of modern minimal invasive techniques in the diagnosis and treatment of obscure GIB in children. To our knowledge this is the first case report of the combination of capsule endoscopy and laparoscopic assisted trans umbilical resection for bleeding jejunal Dieulafoy pseudopolyp in children.

S033

OUTCOME OF LAPAROSCOPIC SURGERY IN CHILDREN WITH INFLAMMATORY BOWEL DISEASE., Ivan R Diamond MD, J. Ted Gerstle MD, Peter C Kim MD, Jacob C Langer MD, The Hospital for Sick Children, Toronto, Canada.

OBJECTIVE: To describe indications for and outcomes of children undergoing laparoscopic surgery for inflammatory bowel disease (IBD).
METHOD: Retrospective descriptive study of all children undergoing a laparoscopic or laparoscopic-assisted operation for IBD between January 1999 and October 2005.
RESULTS: 94 children underwent 104 procedures. Mean age was 14 years (range: 2-18 years). Diagnosis was Crohns disease in 60, ulcerative colitis in 32, and indeterminate colitis in 2. Indication for operation was failure of medical management in 35%, abscess or fistula in 24%, other complication of IBD in 31%, and a second stage procedure in 10%. Ninety percent of patients were receiving medical therapy at the time of surgery (56% steroids, 40% immunosuppressants, 48% antibiotics, 10% infliximab). There were 58 small bowel resections (including 45 ileocolic resections and 13 other resections +/-stricturoplasty), 29 subtotal colectomies, 14 ileal pouches (4 with concomitant colectomy), 1 sigmoid resection, and 1 proctectomy. One patient, operated on for a pouch procedure, only underwent exploration due to an intra-operative diagnosis of Crohns disease. Median operating time was 180 (68 ? 600) minutes. There were two intra-operative perforations, which were repaired. Six (5.7%) operations were converted to an open procedure, all due to extensive inflammatory mass. Median duration of intravenous opioid was 3 days (0 - 10). Median time to clear fluids was 4 days (1- 15), and regular diet was 5 days (2 - 17). Median post-operative stay was 7 days (1 - 32). Overall in-hospital morbidity was 33% (14% major). In-hospital morbidity was 22% (9% major) for small bowel procedures and 47% (23% major) for colonic and pouch procedures. Four patients underwent operation for peri-operative complications. Post-discharge morbidity requiring intervention was 18% (0.5% of small-bowel, 32% of colonic and pouch procedures). Incidence of late post-operative bowel obstruction was 18% in the colonic and pouch procedure group, although only 1 of the 8 patients required an operation for bowel obstruction.
CONCLUSION: A laparoscopic approach is feasible in most children with IBD with a low conversion rate. Despite superior cosmesis, peri-operative morbidity is similar to that seen with open procedures. Laparoscopic colectomy and pouch creation are associated with an unexpectedly high incidence of postoperative bowel obstruction, which is comparable to rates seen with open surgery.

S034

ENDOSCOPIC RESECTION OF CONGENITAL INTRINSIC STENOSIS OF THE DUODENUM, H Giest MD, P Fero-Ivanyi MD, L Meyer-Junghänel MD, J Waldschmidt MD, Pediatric surgery, St. Joseph Children´s hospital, Berlin, Germany

Introduction. The congenital duodenal ileus is one of the leading causes of bowel obstruction in neonates, infants and children. Surgical intervention is not always neccessary.

Endoscopic procedure in some cases is sufficient, performing the resection of membranes and other intrinsic obstacles using the laser or HF diathermy.
Patients: Our study is based on the experience of 7 successfully duodenoscopic resected children. In 6 cases the cause was congenital membrane and one case was presented with spheric duplication. The age of the children was 7 days, 12 days, six months, 1, 4 , 5 and 13 years.
Technique: We used an Olympus-Gastroscope GIF PQ 20, 1030-9,8 mm and 2,8mm working channel. The resection was performed with an 0,6 mm barefiber or in combination with HF diathermy. The first step is the identification of Vater's papilla and the central opening of the membrane followed by introduction of the endoscopic forceps through the central opening of the membrane in closed position. After that the forceps is retracted in spread position and incision of the membrane is performed on the branches and stepwisely extended with the YAG Laser, Fibertommodus 30 Watt single impulse. Remnants of small duplication is necessary performing a circular edge to preserve the duodenal wall. In case of a duplication we initiated the procedure with punction and suction of the fluid content.
Results: No complication as lesion of papilla or of the duodenal wall was observed. Only in one infant after six weeks an ileus required a second operative intervention. All children have survived and are doing well.

S035

IS LAPAROSCOPY ASSISTED ANORECTOPLASTY (LAARP) FOR INTERMEDIATE-TYPE OF IMPERFORATE ANUS FEASIBLE?,
Tetsuya Ishimaru MD, Tadashi Iwanaka PhD, Hiroo Uchida PhD, Hiroshi Kawashima MD, Katsumi Yotsumoto PhD, Chikashi Gotoh MD, Shiho Hamano PhD, Dept. of Pediatric Surgery, Saitama Children's Medical Center, Iwatsuki, Saitama, Japan.
Background: LAARP for intermediate-type of imperforated anus seems to be more difficult than that for high-type, because it requires wider dissection of distal rectum and division of fistula at the deeper pelvic site. Purpose: To compare and evaluate the results of LAARP performed in intermediate-type and high-type of imperforated anus.
Methods: Since 2000, LAARP has been performed in 8 patients with intermediate-type (Group I) and in 14 patients with high-type (Group H) of imperforated anus. The fistula was dissected using urethroscopy, and the levator muscle was dissected using a laparoscopic muscle stimulator. We retrospectively evaluated operation time, intra-operative findings, and postoperative complications.
Results: Operating time of Group I was 187 minutes, compared to 214 minutes of Group H. In Group I, the levator muscle surrounds the distal rectum, thus facilitating easy detection of the center of the levator. Neither group exhibited postop residual diverticulum-like fistula.
Conclusions: LAARP for intermediate-type of imperforated anus is also feasible; however, one should be careful when dividing the fistula. Use of urethroscopy is very effective in proper ligation of the fistula.

S036

OUTCOME AFTER LAPAROSCOPIC PULLTHROUGH (LP) IN MALES WITH HIGH ANORECTAL MALFORMATIONS (HARM). PRELIMINARY RESULTS OF A COMPARATIVE STUDY WITH THE OPEN APPROACH IN A SINGLE INSTITUTION Maria Bailez MD, V. Dibenedetto MD, Pediatric Surgery . Garrahan Hospital . Buenos Aires . Argentina
Staged LP has been our first choice for the treatment of HARM since October 2001.Fifteen males with HARM (8 with a prostatic fistula and 7 with a bladder neck one) underwent a LP .
Objective :Evaluate and compare LP and isolated or combined posterior sagital approach (PSARP) for the treatment of HARM.
Methods : LP was performed in 15 consecutive children with HARM starting October 2001 (Group 1) which were assessed prospectively. We looked at another 15 patients who underwent isolated or combined with laparotomy PSARP which was our procedure of choice before 2001(Group 2).These patients notes were reviewed retrospectively but all the patients were operated and are regularly followed by the authors . Children were categorized according to their type of anomaly as those with a prostatic fistula (A) and a bladder fistula (B). Parameters analyzed were: sacral ratio/anomaly , age at operation , , operative time ,intra or postoperative complications , actual age, voluntary bowel movements , constipation , urinary continence, soiling , need of bowel management.
Two patients (both with bladder fistulas) were excluded from the outcome analysis : 1 not older than 3 years and the other without time enough after colostomy take down.
Open surgery consisted in a PSARP procedure for patients A and PSARP + laparotomy in patients B.
Results : Mean age at operation in patients A was 19 months (G1) vs 40 m (G2) and
26 m(G1) vs 48m (G2) in patients B .Operative time is shown in table 1 . A sacral ratio bellow 0.6 was found in 37,5% of patients A (3/8 in each group) and 60 % of patients B (3/5 in each group) .This data makes groups 1 and 2 comparable in functional results . All patients are urinary continent.
Functional results are compared in table2

Table 1

	A – Prostatic Fistula			B – Bladder Fistula		
	Group 1 [illegible]	Group 2 [illegible]		Group 1 [illegible]	Group 2 [illegible]	
Operative Time	214,7 min ([illegible])	249 min ([illegible])	p [illegible]	[illegible] min ([illegible])	326 min ([illegible])	p [illegible]

Table 2

	Group 1 [illegible]	Group 2 [illegible]	Group 1 [illegible]	Group 2 [illegible]
Actual Age	4 years ([illegible])	3,5 years ([illegible])	[illegible] years ([illegible])	[illegible] years ([illegible])
VBM	75% (6/8)*	62,5 % (5/8)	80% (4/5)	40 % (2/5)
Soiling G1 / Soiling + G[illegible]	62,5%(5/8) / ——	62,5%(5/8) / ——	40%(2/5) / [illegible]	40%(2/5) / [illegible]
BMG (Daily enemas)	——	1/8 (12,5%)	——	80% (4/5)
[illegible] Weekly enemas	[illegible] (62,5%)	5/8 (62,5%)	80% (4/5)	20% (1/5)

[illegible]

VBM : voluntary bowel movements UC: urinary continence.
BMG : Bowel management
* The 2 Patients without VBM are 3 and 3,5 years old ending bowel training program but don´t present a pattern of incontinence.
Conclusion : LP is

S037

LAPAROSCOPIC VERSUS OPEN "BUTTON" CECOSTOMY,
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Objective: Physical and emotional distress associated with daily repeated rectal enemas, diet modifications/laxatives is largely minimized by the introduction of a cecostomy tube for colonic cleansing with antegrade colonic enemas (ACE). Our goal was to validate the long term results of laparoscopic versus open insertion of button cecostomy tube.
Patients and Methods: With ethics board approval we reviewed a standardized parents/patient follow up questionnaire about management of incontinence/intractable constipation with ACE via button cecostomy tube. Over a period of nine years (1997-2005) we performed ?button? cecostomies in 68 patients, laparoscopic 39 (57.35%), open 29 (42.64%). In 5 patients (7.35 %) the procedure was converted from laparoscopic to open due to massive adhesions and technical difficulties. Two groups were matched by age (laparoscopic 10.8± 4.0 y vs open 9.6± 3.3 y), underlying disease and post intervention follow up period (laparoscopic 4.60±1.76 y vs open 4.03± 2.1 y). Cleansing protocols and irrigation solutions were varied depending on the size and activity of the patients.
Results: Complications included: leakage of the irrigation solution (n=2, in laparoscopic group only), development of granulation tissue (n=4 in laparoscopic vs n=7 in open), and tube dislodgement (n=3 in laparoscopic vs n=3 in open). Duration of hospitalization (laparoscopic (3.2±1.03) vs open (3.5±1.24)) and requirement for pain medications (laparoscopic(2.06±1.03) vs open (2.23±1.21)) were similar. Patient/parents satisfaction rate (scale 1-3) was higher in laparoscopic group (+1.7±0.3 vs open +1.5±0.4). Continuous data are expressed as means ± SE. Statistical differences between groups were determined by a Mann-Whitney U test. A p-value < 0.05 was considered statistically significant. However, our parameters, laparoscopic (p=0.406), vs open (p= 0.373) values did not reach statistical significance between two groups.
Conclusions: Our results suggest that laparoscopic cecostomy

has efficiency equivalent to the open procedure with no difference in morbidity, postoperative recovery and with superior cosmetic results. In our institution the laparoscopic procedure has given a new standard, well tolerated and widely accepted by patients. Future studies are required to correlate between different techniques of cecostomy insertion (laparoscopic/open/percutaneous).

S038

LAPAROSCOPY ASSISTED STOMA CLOSURE (LASC), Go Miyano MD, Atsuyuki Yamataka MD, Toshihiro Yanai MD, Tadaharu Okazaki MD, Hiroyuki Kobayashi MD, Geoffrey Lane MD, Takeshi Miyano PhD, Department of Pediatric General and Urogenital Surgery Juntendo Universuty School of Medicine

Purpose: Despite complications after stoma closure remaining relatively high, there are few reports about improving its surgical management. The aim of this study was to describe our improved technique for stoma closure, Laparoscopy Assisted Stoma Closure (LASC).

Methods: 8 children with stoma had LASC at our institute during 2005. Age at LASC ranged from 4 months to 23 months and body weight ranged from 3.9 to 10.0 kg. Under general anesthesia, a 5mm trocar was inserted through an infraumbilical, left-lower, or upper quadrant incision. A laparoscope was used to visualize the bowel and the abdominal wall involved in the stoma and determine the line of separation. From this intraabdominal perspective, the presence or absence of underlying adhesions and their location could be determined. Externally, an incision was made along the stoma circumferentially, and a pair of mosquito forceps was inserted into the abdomen along the attachment between the stoma and the abdominal wall where there were no intraabdominal adhesions seen laparoscopically. The tip of the mosquito forceps was used to dissect the stoma off along the proposed line of separation. Electrocautery was used for hemostasis and to complete the separation. After the stoma was taken down, the bowel was anastomosed and the abdomen closed in layers. Results: All stomas were easily taken down in all cases using our LASC technique without injuring the underlying bowel at the stoma site. The average time, from the beginning of incision around the stoma to the stoma taken-down, was 21.3 minutes (range: 17 ~ 25 minutes). There were no intraoperative complications. There was less injury to the abdominal wall muscles around the stoma site compared with conventional stoma closure without laparoscopic assistance. After a mean follow-up of 3.4 months, are no postoperative complications such as wound infection, incisional hernia, or intestinal obstruction.

Conclusion: Although our experience is limited to only 8 patients, our LASC appears to be an effective option for stoma closure.

S039

LAPAROSCOPIC TOTAL CYST EXCISION WITH ROUX-EN-Y HEPATOENTEROSTOMY FOR CHOLEDOCHAL CYST: 68 CASES EXPERIENCE, Long Li MD, Xuelai Liu MD, Liuming Huang MD, Dept. of Pediatric Surgery, the Capital Institution of Pediatrics,Beijing,China

Purpose: this study is to describe the technical experience and outcome in laparoscopic total cyst excision with Roux-en-Y hepatoenterostomy for choledochal cyst in children.

Methods: Sixty-eight patients with choledochal cyst underwent laparoscopic cyst excision with Roux-en-Y hepatoenterostomy between June 2001 and July 2005. Their ages ranged from 2 months to 15 years (average age 3.6 years). The choledochal cysts were cyst type in 62 cases with the average diameter of 3.8 cm (2.5 to 21 cm) and fusiform type in the other six cases with the diameter of 1.5 and 2.2cm. Four trocars were utilized with 3 to 5 mm instrumentation. Under laparoscopic guidance, the gallbladder and the dilated bile duct were completely excised. The Roux-en-Y jejunojejunal anastomosis was performed extracorporeally by exteriorizing the jejunum through the extending umbilical incision (1 to 1.5 cm), and an end-to-side anastomosis was carried out intracorporeally by the continuous hand suture methods between the stump of the hepatic duct and the Roux-en-Y limb.

Results: 68 laparoscopic hepaticoenterostomies were accomplished laparoscopically without conversion. Average duration of operation was 4.3 hours (ranged from 3.5 to 7.6 hours), intraoperative bleeding was 5 to 10 ml without necessity for blood transfusion. 12 of 68 patients were associated with hepatic ductal stenosis and underwent laparoscopic excision of the cyst and ductoplasty. In one of the 12 cases, the bile leak was noticed from day 1 through 26 postoperatively. 2 patients developed GI bleeding from day 2 throught day 5 and 7 postoperatively. The postoperative course was uneventful in the other 65 patients with hospital stay ranged from 3 to 6 days after the operation. One patient developed roux-Y limb intestinal obstruction at the sixth month after operation and underwent the intestinal resection and the jejunal limb re-anatomosis. There was no intra- or postoperative complication in the other cases on three months to three years follow-up visits.

Conclusion: Laparoscopic total cyst excision with Roux-en-Y hepatoenterostomy is feasible, safe and effective for the treatment of choledochal cyst in children. The laparoscopic magnified view supplying the detail variations of the biliary system and accurate hepatic hilum visualization are great helpful and facilitate for the successful operation.

S040

A COMPARISON STUDY OF LAPAROSCOPIC VERSUS OPEN PORTOENTEROSTOMY FOR BILIARY ATRESIA, xue-lai Liu MD, long Li MD, jun Zhang, capital institute of pediatrics

Background Biliary atresia (BA) is one of the most common pediatric surgical disease, and open portoenterostomy is standard treatment, the aim of this study was to investigate whether the recently developed laparoscopic portoenterostomy of BA is superior to open surgery.

Methods From August 2003 to July 2005, 29 cases of patients (27-92d, mean54.8d) associated with type III BA underwent laparoscopic portoenterostomy in our departments. 3 cases were excluded from the study for conversional operation, and the other 26 patients (laparoscopic group) were compared with 34 cases (33-105d, mean: 58.5d) with type III BA who underwent open portoenterostomy (open group) in the same period. The blood loss, liver function, complications, the time and the expenditure for hospital stay, and long-term effects were used to assess the operative effects between the two groups. The patients were followed up for 3 to 26 months.

Results The blood loss in laparoscopic group and open group were averagely15.4ml and 33.8ml, the former was significantly less than latter (P=0.0354). Serum bilirubin in the laparoscopic group and open group were averagely 185.4 umol/L and 195.7umol/L respectively before the operation, and they were averagely 91.5umol/L and 155.9umol/L respectively after the operation, the former decreased more significantly than the latter(P=0.028). Hospital stay of laparoscopic group was not significantly different from the open groups (mean, 18.9d vs 19.5d P=0.691), also expenditure of hospital stay (P=0.191). Bile flow was seen immediately after the operation in all laparoscopic patients, and only 1 case (3.85%) has the early complication (port site herniation), whereas complications were observed in 4 cases of open group, including 1 acute hepatic failure, 1 incision rupture, 2 incision infection (p=0.027). During follow-up period, 3 cases in laparoscopic group died and 23 patients were alive. 10 of the 23 cases still had jaundice and the other 13 (50%) cases kept jaundice free. 5 cases in open group died during the follow-up period and 29 patients were alive. 11 of the 29 cases had jaundice and the other 18 (52.9%) cases were jaundice free. The incidence for jaundice free in laparoscopic group was not significantly different from the open group (p>0.05).

Conclusions our study suggests that laparoscopic portoenterostomy has less blood loss, a quicker recovery, good wound cosmesis, and long term result seems identical to open surgery.

S041

ENDOSURGICAL TREATMENT OF LIVER HYDATID DISEASE IN CHILDREN: PRELIMINARY RESULTS OF 12 YEARS EXPERIENCE, V. Kotlobovsky MD, S. Dosmagamdetov MD, A. Ergaliev, D. Dzenalaev MD, Department of Laparoscopic Surgery, Regional Pediatric Hospital, Aktobe, Kazakhstan

Aim. To evaluate the efficiency of laparoscopic approach in treatment of liver hydatid disease in children.
Materials. Since 1993 114 children ranging from 4 to 15 (7,3+-3,2) years of age with liver hydatid disease underwent laparoscopic surgery. 59 (51,8%) patients were males, 55 (48,2%) ? females. We used abdominal ultrasonography, x-ray chest examination, CT scan as diagnostic procedures before surgery. All patients accepted 10 mg/kg of albendazolum during 2 weeks preoperatively. There were 49 (43%) patients with solitary cysts, 37 (32,5%) ? with double and 28 (24,5%) ? with multiple cysts. The diameter of cysts ranged from 3 to 15 cm. We used 4 trocars approach in cases of one lobe and 5 or 6 trocars in cases of booth lobes cysts location. In 3 (2,6%) cases of back diaphragmatic cysts location in VII or VIII segments we used our original ?lateral? 4 trocars approach. Puncture and aspiration of hydatid fluid performed as a first step of the procedure. Then 2% formaldehyde solution injected into the cysts cavity. This antiseptic solution aspirated after 3 minutes exposition. Then fenestration of the roof of cysts performed. We used 11, 15, 18 or 22 mm trocars for our original technique of endocysts vacuum extraction. We use 2% formaldehyde solution for the secondary processing of fibrous capsule. One tube used for draining of every residual cavity, one, or two - for draining of the abdominal cavity. All patients accepted 10 mg/kg of albendazolum postoperatively during 6 weeks. Operation time, conversion rate, minor and major complications rate, length of hospital stay were analyzed.
Results. There were no cases of mortality. Contraindications were identified in 5 (4,2%) cases. Conversion rate ? 2 (1,8%) cases. Duration of operation time ? 58.1+-18 min. Minor surgical complications rate ? 5 (4,2%) cases Major surgical complications rate ? 3 (2,6%) cases. Recurrence rate ? 1 (0,9%) case. Residual cysts formation rate - 3 (2,6%) cases. Duration of the hospital stay - 9.7+-2.1 days.
Conclusion. Laparoscopic approach could be successfully performed in 95% cases of liver hydatid disease in children. It demonstrates good post-operative results, low rate of complications and recurrence, short duration of operation and hospital stay.
Prospective, comparative, randomized study has been performing in our clinic for it?s final evaluation.

S042

THERAPEUTIC LAPAROSCOPY FOR ABDOMINAL TRAUMA IN CHILDREN, Henri Steyaert MD, françois varlet MD,jean-françois colombani MD,jeff valla PhD, Fondation Lenval, Nice, CHU hôpital Nord, St Etienne ,CHU Zobda Kitman, Fort de France

In order to study the effectiveness of the use of a laparoscopic approach in traumatic abdominal injuries a retrospective questionnaire was sended to all the members of the Groupe d?Etude de Coeliochirurgie Infantile (GECI) (french group of endoscopic paediatric surgery).
24 french centers collected 38 cases of abdominal trauma were a laparoscopy was used in order to specify lesions and or treat them either by laparoscopy or after conversion to laparotomy. Hemodynamic unstable patients were excluded.

Reasons for laparoscopy were, essentially, suspicion of bowel or biliary tree perforation, presence of an abdominal wound with possible transgression of the peritoneum and pancreatic injury. There was no false negative laparoscopy but in 6 cases surgery was considered as unnecessary.

Laparoscopy revealed 19 bowel perforations, 2 stenotic haematoma of the duodenum and 1 of the ileum, 2 gallbladder and 2 hepatic duct perforations, 3 pancreatic injuries with pseudocyst formation, 1 omentum necrosis, 1 hepatic and 2 splenic wounds. Treatment consisted in 13 bowel sutures by laparoscopy (7 after conversion including one stenosis) 1 cholecystectomy (one after conversion) 3 external drainages in case of pancreatic injury and 2 in case of biliary duct injury and, finally,1 partial omentectomy.

There were 2 complications: 1 haemorrhage leading to a secondary laparotomy (hepatic artery branch ligation) and 1 pancreatic fistula.
There was no death and follow-up was uneventful for all children except one who presented a left liver atrophy.

This paper discusses the advantages and limitations of laparoscopy in hemodynamically stable children who have sustained injuries from abdominal trauma. The authors recommend laparoscopy as an additional tool for the optimal management of selected trauma cases, essentially when clinical examination,ultrasound scanning and CT scanning suspect a bowel perforation.

S043

U-STITCH LAPAROSCOPIC GASTROSTOMY TECHNIQUE HAS A LOW RATE OF COMPLICATIONS AND ALLOWS PRIMARY BUTTON PLACEMENT: A SINGLE INSTITUTION EXPERIENCE WITH 461 PEDIATRIC PROCEDURES, Charles J Aprahamian MD, Traci L Morgan RN, Carroll M Harmon MD, Keith E Georgeson MD, Douglas C Barnhart MD, Division of Pediatric Surgery, University of Alabama-Birmingham

Introduction: Gastrostomy tube placement is among the most common gastrointestinal procedures performed in children. The u-stitch laparoscopic technique allows primary button placement and the advantages of laparoscopy. The purpose of this study was to quantify the occurrence of complications in a large single-institution experience.
Methods: All laparoscopic gastrostomy procedures over 64 month period were reviewed. Complications occurring within 90 days were considered early. Analyses were performed using Fischer exact test and logistic regression. IRB approval was obtained.
Results: 461 laparoscopic gastrostomies were created during the study period with primary buttons being placed in 444 (96%). An additional 7 patients underwent conversion to open procedures due to inability to establish adequate domain for laparoscopy. The average age was 3.6 years with the youngest patient being 2 days old. 222 patients (48%) were neurologically impaired. Seventy-two percent of patients underwent a concomitant laparoscopic fundoplication. Seven surgeons performed the operations. Follow-up duration was on average 2.6 years (standard deviation 1.5 years).
No procedure-related deaths occurred. The overall complication rate was 5.3%. Early complications occurred in 16 patients (3.5%). These included: dislodgement requiring re-operation (7 patients, 1.5%), port site complication (hernia, omental eviscer-ation) (3 patients , 0.7%), possible gastric outlet obstruction (2 patients, 0.4%), major wound complication requiring re-operation or re-admission (2 patients, 0.4%), intraperitoneal leak at gastrostomy site (1patient, 0.2%), and extra-luminal placement (1patient, 0.2%). Late complications occurred in 8 patients (1.7%) with three (0.7%) requiring revision of the gastrostomy due to local site problems. Five patients (1.1%) had intraperitoneal placement of tubes during attempted replacement after 90 days with three occurring more than 8 months after gastrostomy creation. Age, infancy and neurological impairment were not associated with a higher rate of complications.
Conclusions: The u-stitch gastrostomy technique is safe and allows primary button placement in infants and children. Its complication rate compares favorably to other reported gastrostomy techniques.

S044

ESOPHAGO-GASTROSCOPY FOR INTRA-OPERATIVE ASSESMENT OF LAPAROSCOPIC NISSEN FUNDOPLICATION : IS IT INDICATED ?, Georges Azzie MD, Lena Perger MD, Robert Weinsheimer MD, Libby Watch MD, Children's Hospital of New Mexico,University of New Mexico

Background/Purpose: Traditional intra-operative criteria for assessing the adequacy of a laparoscopic Nissen fundoplication are arbitrary (length of wrap, tightness of wrap), and involve examination from outside the gastro-intestinal lumen. We describe the benefits of an alternative method for assessment of the fundoplication: intra-operative esophago-gastroscopy. This allows calibration of both the wrap and the crural repair, as well as assesment of competence of the fundopli-

Oral Presentation Abstracts

cation. Competence is assessed by insufflating the stomach and retroflexing the endoscope to examine the gastro-esophageal (GE) junction from within the gastric lumen.This mimmicks what will take place when the patient is fed, allowing a more functional assessment of the fundoplication.
Methods: We retrospectively reviewed the charts of all children who underwent intra-operative esophago-gastroscopy at the time of laparoscopic Nissen fundoplication since September 2002. Particular attention was paid to:
- Whether endoscopy had prompted the surgeon to adjust the wrap,
- Whether symptoms had improved post-operatively,
- Presence of post-operative dysphagia.

Results: We performed 66 Nissen fundoplications with intra-operative endoscopy. In nine cases (14 %), the wrap was modified after endoscopic evaluation. In three cases, the wrap was taken down completely and reconstructed. In five cases, an extra stitch was added on the basis of inadequate indentation of the fundoplication as assessed by retroflexion of the endoscope within the stomach. In one case, a crural stitch was removed to relieve the constricted hiatus. Follow-up has been between two and 37 months (average of 20 months). The failure rate of fundoplication is 9.1%. 92% of patients are doing better on follow-up.There are no cases of post-operative dysphagia.
Conclusions: Intra-operative esophago-gastroscopy is a useful adjunct in assessing the integrity of a laparoscopic Nissen fundoplication. It allows recognition of possible post-operative problems which may be addressed at the time of operation. We recognize that surgeon preference and experience will dictate its use.

S045

ELIMINATION OF COMPLICATIONS OF LAPAROSCOPIC PYLOROMYOTOMY, Shaun McKenzie MD, Daniel A Beals MD, Andrew R Pulito MD, Joseph A Iocono MD, University of Kentucky

OBJECTIVE: In a previous review at our institution, the first 150 laparoscopic pyloromyotomies completed resulted in 4 patients with omental evisceration (2.7%) and 3 incomplete myotomies (2%). Although low, these are unacceptabe complications that do not occur in the open technique. The objective was to see if simple changes in the procedure (stitch closure and wider spread) would eliminate these complications.
METHODS AND PROCEDURES: Retrospective chart review from January 2002 through September 2005. This compromised a review of a total of 249 charts. The chart review was subdivided into 2 time periods: before and after changes. The demographics, OR time, post-operative LOS, and complications were collected and reviewed. The pyloromyotomies were performed with an attending and either an R3 or R4 general surgery resident.
RESULTS: Both groups had similar demographics and disease states. The complcation rate for both stated complciations dropped to 0 during the second time period.
CONCLUSIONS: Simple changes to the laparoscopic pyloromyotomy technique can eliminate unique complications of the laproscopic approach.

S046

PERIOPERATIVE HYPNOSIS REDUCES HOSPITALIZATION IN PATIENTS UNDERGOING THE NUSS PROCEDURE FOR PECTUS EXCAVATUM, Thom E Lobe MD, Blank Children's Hospital

Aim of Study: To assess whether perioperative hypnosis can reduce hospitalization and alter the need for post-operative analgesics in patients undergoing the Nuss procedure.
Methods: Ten consecutive patients undergoing the Nuss procedure were managed the same operatively. For pain management they were divided into two sequential groups as follows: The Non-hypnosis group (n=5) was managed with an epidural catheter and analgesia was supplemented with intravenous (IV) or oral (PO) narcotics as requested. These patients all required Foley catheters for bladder drainage while the epidural was in place. The second group (n=5) was prepared by teaching them self-hypnosis (SH) for post-operative pain management in one or two brief sessions. Post-op SH was prescribed and encouraged. These patients were allowed Patient Controlled Analgesia (PCA) and were supplemented with IV or PO narcotics as requested. All but one patient required a straight catheterization of the bladder the evening of surgery. Data collected included hospitalization and analgesia requirements as well as other unusual findings. Student?s ?t? test was performed. This study was IRB approved.
Main Results: The mean findings are seen below:

Group	# Hospital Days	# Days Parenteral Pain Management	# Doses IV Narcotics	# Doses PO Narcotics
Hypnosis	2.8	1.8	5.8	6.8
Non-Hypnosis	4.6	2.8	6.8	3.6
p<	0.01	ns	ns	ns

ns = not significant Parenteral Pain Management = PCA or Epidural Catheter

There were no adverse affects from the hypnosis.Conclusion: Perioperative hypnosis proves effective as a tool to significantly reduce hospitalization in patients undergoing the Nuss procedure for pectus excavatum. The likelihood of success can be accurately determined at the outset.

S047

ENDOSCOPIC DISOBLITERATION OF STENOSES OF BRONCHI AND THORACIC TRACHEA IN 245 CHILDREN USING RINGKNIFE, BALLOON AND LASER, Jürgen Waldschmidt MD, Lutz Meyer-Junghänel MD, Henning Giest MD, Pediatric surgery, St. Joseph Children´s hospital, Berlin, Germany

Purpose: We would like to report about our experience concerning disobliteration of intrinsic stenoses of the deep airways in children.
Material: In the period from 1981 to 2003 245 children in our department underwent the endoscopic disobliteration. Etiology in most cases were postinflammatory granulations and scar formation with strictures, followed by congenital anomalies, hemangiomas, cysts and tumours. In 118 cases the pathology was located in thoracic trachea, in 64 cases in a main bronchus, and in further 63 children in a peripherial bronchus. History: The clinical manifestations were variable depending on the etiology and the location of the stenoses and more over of the age of children. In most cases recurrent bronchopneumonia, atelectasis or lobar emphysema were observed. In 15 infants a lobar emphysema caused an air trapping syndrome ith life-threatening complications. Additional special aspects arised in very low birth weight premature newborns suffering from necrotizing tracheobronchitis (NTB).
Therapy: We used the STORZ equipement, metal ringknife, balloons and NdYAG-Laser 1064 nm MBB ? Donier. In most of the cases one or two intervention were successful, in some cases further sessions were necessary.
Results: In three cases minor complications were observed: in one case - mediastinitis due to perforation of the bronchus, in another case ? subcutaneus emphysema and in the third a pneumothorax resulted. Above mentioned children are alive.

S049

COST ANALYSIS OF MINIMALLY INVASIVE SURGERY IN A PAEDIATRIC SETTING, Vanessa Mc Lean, Anies A Mahomed MD, Royal Alexandra Children's Hospital

Aims & Objectives: To evaluate theatre cost of laparoscopic surgery across a range of commonly performed procedures. To document change in cost over time and identify factors adversely influencing cost. To determine if the surgeon is a factor in the cost of a procedure.
Methodology: This is a prospective audit of common laparoscopic procedures performed in a single unit over a 22 month period. Detailed costs of inventory for laparoscopic procedures were compiled on a case by case basis and recorded on a proforma form. Cost of laparoscopic equipment were based on estimates provided by hospital managers. Overall costs per procedure were collated and changes in cost over the period of the study were analysed. Factors responsible for increased costs were flagged and detailed appraisal of each undertaken to enable implementation of cost saving measures. In this study no long term outcome measures were taken into account.
Results: A total of 151 cases were performed over the period of

study with no adverse intra-operative events. Procedures included 45 appendicectomies, 12 cholecystectomies, 22 fundoplications, 9 nephrectomies and 10 Fowler Stevens operations. The cost of appendicectomy varied from £46 to £483 with a mean of £235. The Kruskal Wallis Test was used to detect differences in cost over time and was significant p=0.017. The cost of fundoplications varied from £302 to £651 with mean cost of £416 but there was no significant change over time. The limited numbers of Fowler Stevens, nephrectomy and cholecystectomy operations did not allow for an evaluation of costs over time but showed a trend towards a decrease in cost over time. For appendicectomies there was a significant difference in costs between 6 surgeons who undertook the procedure p= 0.007. Other factors which influenced costs were use of disposables particularly for hemostasis, magnitude of case and a lack of resources for replacement of reusables.
Conclusion: Cost of commonly performed laparoscopic procedures are falling. The experience of a surgeon is a factor in the costs of some procedures . A cost saving strategy has not compromised patient safety nor denied access to state of the art surgery. However some cost saving measures though attractive are labour intensive and not practical. Overall, a commitment to sensible use of healthcare resources translates into savings for hospitals strengthening the case for laparoscopic surgery.

S050

LONG TERM OUTCOME OF ENDOLUMINAL GASTROPLICATION (ENDOCINCH) IN CHILDREN, B Antao MD, M Thomson MD, A Fritscher-Ravens MD, S Hall MD, N Afzal MD, P Ashwood MD, C P Swain MD, Sheffield Children's Hospital, Sheffield, Royal Free Hospital, London and Royal London Hospital, London, UK

Objective: Endoluminal gastroplication (EG) is emerging as a minimally invasive procedure for the treatment of gastroesophageal reflux disease (GORD). The aim of this study is to describe the paediatric experience and evaluate the long term outcomes after EG.
Methods and procedures: Seventeen children [median age 12.4 (range 6.1-15.9) years] with GORD underwent EG using a flexible endoscopic sewing device (Endocinch) over the last 3 years. Three plications were placed in the gastric tissue below the lower oesophageal sphincter. The median procedure time was 65 (range 54-126) minutes. Drug dose requirement, pH measurements, symptom severity and frequency and validated quality of life scores (QOLRAD) were compared before, one and three years after EG. Statistical analysis was done using Wilcoxon rank sum test, where $p < 0.05$ was considered significant.
Results: All patients showed a post-treatment improvement in symptom severity, frequency and quality of life scores. Completed 1 and 3 years data was obtained from 16 patients. Four cases required a repeat procedure due to recurrence of symptoms and did well subsequently. Fourteen (88%) patients at one year and 9 (56%) at 3 years remained off all antireflux medications. A sustained improvement in heartburn (p=0.004), regurgitation (p=0.017) and vomiting (p=0.018) was seen at 3 years. The total QOLRAD (max 175) improved from a median 87 (range 69-142) to 156 (range 111-175) at 1 year ($p<0.0001$) and 153.5 (range 55-174) at 3 years (p=0.002). The only complication was gastric bleeding in a child with undiagnosed coagulopathy, which resolved spontaneously.
Conclusions: EG is an effective and safe procedure in children. It is a viable option for the treatment of GORD refractory to or dependent on anti-reflux medications.

Video Presentation Abstracts

V001

SMA SYNDROME WITH DUODENAL PULSION DIVERTICULA: ROBOT ASSISTED DIVERTICULECTOMY AND DUODENO-JEJUNOSTOMY, RAVINDRA K VEGUNTA MD, RICHARD H PEARL MD, UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE AT PEORIA and CHILDREN'S HOSPITAL OF ILLINOIS

Purpose: This is a video presentation of the management of a child who presented with superior mesenteric artery syndrome (SMA syndrome) and duodenal diverticula.
Method: The patient is a 14 year old girl who presented with history of five kilograms loss in weight over the previous two to three months. She also had non-bilious post prandial emesis and upper abdominal pain for four days. An upper gastro-intestinal contrast study showed that she had SMA syndrome and two diverticula in the duodenum proximal to the partial obstruction. She was treated with naso-gastric tube feeds for about three weeks. Once she gained back about three kilograms of her weight, surgery was performed using a combination laparoscopic and robotic assisted techniques.
Results: She made an uneventful recovery. Three months after surgery she had gained six kilograms and had no nausea, vomiting or abdominal pain. A repeat upper gastro-intestinal contrast study showed an open duodeno-jejunal anastomosis.
Conclusion: Complex intestinal surgery is feasible and safe in children with robotic assistance.

V002

DA VINCI ASSISTED AORTOPEXY FOR TRACHEOMALACIA, Cristiano Boneti MD, Brendan T Campbell MD, Richard J Jackson MD, Samuel D Smith MD, Evan R Kokoska MD, Arkansas Childrens Hospital

Purpose: The purpose of this video is to demonstrate the use of the Da Vinci robot for aortopexy in a ventilator dependent patient with tracheomalacia.
Methods: A 12mm trocar for the 30 degrees thoracoscope was inserted in the left mid-axillary line at the 6th interscostal space for the camera. Two 8mm trocars were placed anterior to the camera port 8 cm superiorly and inferiorly, respectively, for the robot working arms. A fourth 5mm port was placed for retraction on the aorta. The anterior mediastinum was bluntly dissected to expose the pericardial sac and the pericardium opened sharply to allow clear visualization of the aorta. Bronchoscopy was performed while anterior traction was placed on the aorta to determine optimal suture placement. Three 2-0 Ethibond sutures were placed in the adventitia of the ascending and transverse aortic arch to displace the aorta anteriorly thus relieving compression on the trachea and left main stem bronchus. Improved tracheal diameter following suture placement was confirmed with real-time bronchoscopy.
Results: Approximate operating time was four hours. Excellent visualization was achieved with the 3D camera system and dexterity for precise suturing was facilitated by the robot endowrists.
Conclusion: The Da Vinci robot system facilitated dissection and suturing to the chest wall in the performance of aortopexy.

V003

NEONATAL THORACOSCOPIC DIAPHRAGMATIC HERNIA REPAIR, Karen Diefenbach MD, Milissa McKee MD, Yale University School of Medicine

The video submitted demonstrates the successful thoracoscopic repair of a congenital diaphragmatic hernia in a neonate. The procedure was performed on the fourth day of life in a 2.5 kg infant with a left sided defect. Three ports 3-4 mm in size were used to complete the repair. Low flow carbon dioxide insufflation was used to provide adequate visualization. All physiologic parameters were stable throughout the procedure. A standard closure of simple, interrupted nonabsorbable sutures were used to close the defect. The entire operative time was just over 1 hour in this first attempt at thoracoscopic repair at our institution.

V004

ROBOTIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA, John J Meehan MD, John Lawrence MD, Laura Phearman RN, Paula Francis RN, Anthony Sandler, Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

This Abstract is submitted with IRB approval
Minimally invasive repair of congenital diaphragmatic hernia (CDH) in the neonatal period has been met with skepticism and has been reported to be less than ideal by several authors. The technical challenge for the surgeon and the high recurrence rates have left some surgeons returning to open repair for this anomaly. We hypothesize that robotic surgery may help overcome the technical challenges which have hindered CDH closure with traditional MIS equipment. However, robotic surgery has it's limitations, too. Specifically, the articulating instruments need a longer length than traditional MIS instruments in order to function adequately. The available operating domain was clearly the most important issue regarding the feasibility of a successful closure. But repair can be achieved with careful planning and the suitable candidate. We present our experience and lessons learned with robotic closure of this anomaly with an unsuccessful approach from the chest in one patient and a successful abdominal approach in another.

V005

THORACOSCOPIC RIGHT MIDDLE AND LOWER LOBECTOMY FOR PULMONARY SEQUESTRATION, Shawn D St. Peter MD, Daniel J Ostlie MD, Children's Mercy Hospital and Clinics

This video will show our approach to the thoracoscopic technique of right middle and lower lobectomy for an intrapulmonary sequestration in a 6 month old infant. Dissection and ligation of the infradiaphragmatic aortic arterial supply and subsequent hilar dissection will be shown.

V006

ROBOTIC RESECTION OF A CONGENITAL CYSTIC ADENOMATOID MALFORMATION, John J Meehan MD, Kerri Nowell, MD, John Lawrence MD, Laura Phearman RN, Paula Francis RN, Anthony Sandler MD, Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

This abstract is submitted with IRB approval
Congenital cystic adenomatoid malformation (CCAM) has been successfully resected thoracoscopically . However, no reports of robotic resections have been published. We present a video demonstration of our first successful robotic CCAM resection in a 3 month old baby boy. This patient had a CCAM in the left upper lobe which occupied about 1/3rd of the volume of this structure. A lobectomy seemed too extreme and we elected to perform a segmentectomy. The robot was instrumental in assisting with the demarcation of the segment we intended to resect as well as securing the bronchus to this segment. However, we still find thermal sealing devices to be the ideal method in which to seal and divide the pulmonary parenchyma.

V007

LAPAROSCOPIC PARTIAL SPLENECTOMY, Wendy Su MD, Thomas Hui MD, Pramod S Puligandla MD, The Montreal Children's Hospital

Case Report: A three year old girl presented to our emergency department with a left lower lobe pneumonia and vague abdominal pain. Ultrasound examination for the abdominal pain revealed a 5x4x4 cm sub-diaphragmatic mass with a feeding vessel. A CT scan subsequently revealed a large, solid vascular lesion adjacent to the tail of the pancreas, the spleen and the left adrenal gland. The differential diagnosis at this time was a lesion involving the spleen or pancreas, an adrenal mass or a pulmonary sequestration. All laboratory investigations, including HVA/VMA were normal. A diagnostic laparoscopy was performed which revealed a solid, well-circumscribed mass arising from the the superior pole of the spleen. The physical characteristics of the mass suggested that it was a benign splenic hamartoma. Partial splenectomy was performed by isolating and dividing the short gastric and superior pole vessels using the harmonic scalpel. With the vessels taken, the

superior pole was clearly demarcated by an ischemic line. The splenic parenchyma was then serially divided along this line using the harmonic scalpel. Hemostasis was excellent and the resected surface of the spleen was covered with fibrin glue. The mass was placed in an endocatch bag and removed intact through a widened umbilical port site. Pathology confirmed the diagnosis of a splenic hamartoma. The patient was discharged on post-operative day 2 without evidence of bleeding. At 1 year follow-up, the patient is well and asymptomatic. There is no evidence of recurrence on ultrasound. **Conclusion**: Most splenic lesions in children are benign and may be amenable to resection by laparoscopy using the harmonic scalpel. Partial splenectomy may be beneficial in children since it preserves an adequate amount of normal functioning splenic parenchyma, thus avoiding the potential risk of overwhelming post-splenectomy sepsis.

V008

ROBOTIC-ASSISTED THYROID LOBECTOMY, Thom E Lobe MD, Simon K Wright, Blank Children's Hospital

This video submission details the use of the da Vinci robotic system in the performance of a right thyroid lobectomy for a cold nodule in a 17 year old female patient using a transaxillary approach with no cervical incision.

V009

LAPAROSCOPICALLY ASSISTED ANORECTAL PULL-THROUGH FOR HIGH IMPERFORATE ANUS: REFINEMENTS OF A TECHNIQUE, Philip K Frykman MD, Keith E Georgeson MD, Division of Pediatric Surgery, Cedars-Sinai Medical Center; and Departments of Surgery and Pediatrics, UCLA; Division of Pediatric Surgery, University of Alabama School of Medicine at Birmingham.

Background: The laparoscopically assisted anorectal pull-through (LAARP) for high imperforate anus has become a frequently performed procedure. Refinements of the original LAARP have been made in attempt to avoid the occasional complication of a urethral diverticulum. This video shows the modified LAARP technique.

Method: A newborn boy with imperforate anus underwent a divided descending colostomy shortly after birth. At three months of age, a modified LAARP was performed. A U-suture is placed to retract the bladder to make pelvic dissection easier. Meticulous dissection of the rectum and clear visualization of the rectourethral fistula prior to its division is accomplished. The fistula is opened anteriorly to better visualize it?s connection with the urethra when necessary. Placement of an absorbable suture ligature at the fistula-urethral junction is critically important. An adequate lip of fistula should be left on the urethra to prevent slippage of the ligature. A 1 cm incision is made over the sphincter complex on the perineum and the oval plane inside the external sphincters is dissected bluntly. With the babies legs flexed onto the abdominal wall, the plane inside the muscle complex runs at right angles to the perineum and does not angle anteriorly. A Veress needle surrounded by a radially expandable sheath is placed in the midline, splitting the pubcoccygeus muscle. The tract is serially dilated and the rectal fistula is pulled through the tract to the perineum. Anoplasty is performed with interrupted absorbable sutures.

Results: Eleven months after LAARP the patient is having 3-6 stools per day. Postoperative voiding urethrogram shows no posterior urethral diverticulum.

Conclusion: Refinements to the LAARP technique to avoid development of posterior urethral diverticulum are summarized.

V010

LAPAROSCOPIC CONTINENT APPENDICOCECOSTOMY INTO A CONCEALED STOMA: OPTIMIZING COSMESIS AND CONTINENCE, Lisandro A Piaggio MD, T Ernesto Figueroa MD, Ricardo Gonzalez, A I duPont Hospital for Children, Wilmington, Delaware, USA

INTRODUCTION: We report a technique to construct a laparosocpic appendicocecostomy (LA) for antegrade colon enemas (ACE), which creates a submucosal tunnel, mimicking the open technique used at our institution (Modified Malone Procedure).

METHODS AND PROCEDURES: Patients are admited 24 hs before surgery for a mechanical bowel preparation and intravenous antibiotics. A "V? incision is done in the umbilicus before gaining access to the abdominal cavity to create a concealed stoma afterwards and a 5 mm port placed for the camera. Two accesories ports are used: 5 mm hypogastrium and 3 mm right flank. The appendix is isolated and the cecum mobilized. A percutaneous prolene sticth on the right lower quadrant is placed in the cecum and traction applied towars the abdominal wall to facilitate the disection. A 3 cm seromuscular incision is done from the base of the appendix along the taenia and the proximal appendix is placed in a submucosal tunnel created by reapproximating of the seromuscular layer of the cecum with interrupted sutures. The camera is placed now in the hypoastrium and under laparoscopic vision the appendix is brought out through the umbilical site and anastomosed to the V flap previously prepared in the umbilical skin. A catheter is left in place for four weeks.

RESULTS: Blood loss and postoperative analgesia requierement are minimal. ACE are started 48 hs after the procedure. Cosmetic results are excellent. Continence of stool is achieved without the risk of leakeage through the stoma.

CONCLUSIONS: The open appendicocecostomy for ACE with submucosal tunnel located at the umbilicus provides a concealed and reliable stoma. We were able to reproduce this technique with the advantage offered by laparoscopy: minimal invasiveness and improved cosmesis

V011

EFFICACY OF THE ULTRASONICALLY ACTIVATED SHEARS IN LAPAROSCOPIC TOTAL COLECTOMY, Luciano Mastroianni MD, Alba Cruccetti PhD, Giovanni Cobellis PhD,Ascanio Martino MD, Pediatric Surgery Unit, Salesi Children?s Hospital ? Ancona

Total colectomy is performed for different diseases such as ulcerative colitis, familial polyposis and total colon Hirschsprung?s disease. Total colectomy is frequently combined with a mucous proctectomy and completed by an ileoanal anastomosis, usually after fashioning an ileal reservoir.

Recently laparoscopic colon surgery has been widely performed. The ultrasonic scalpel has been widely used in laparoscopic surgery and is documented to be safe and fast for cutting and coagulating tissue. We report our experience in total colectomy using the ultrasonic scalpel. In 2004 we performed 2 total colectomy: in a 13 years old girl with ulcerative colitis and in a 14 months old boy with total colonic aganglionosis. We used a 5 trocars technique: one 10-mm port inserted though the umbilicus and four 5-mm port. The all colon dissection was performed utilizing the ultrasonic scalpel with good result for cutting and coagulating tissue. There was no need for endosurgical clips, endoscopic suture loops or vascular endoscopic stapler. There were no intra or or early/late post-operative complications.

Our preliminary experience shows that ultrasonic scalpel for laparoscopic colon surgery can be safely used with good efficacy.

V012

SECONDARY ESOPHAGEAL ATRESIA REPAIR, Mark L Wulkan MD, Emory University School of Medicine/Children's Healthcare of Atlanta

The video submitted depicts a patient who was born at 35 weeks gestational age (2040g) with esophageal atresia with tracheoesophageal fistula. Initial thoracoscopic exploration revealed a short proximal esophagus. A plastic clip was placed on the fistula and a gastrostomy tube was placed. The patient underwent dilatations for 5 weeks until the proximal pouch was of sufficient length.

The video shows the successful thoracoscopic re-exploration and anastamosis of the proximal and distal esophagus.

The patient has had an uneventful post-operative course and is currently tolerating all feedings by mouth and doing well.

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V013

THORACOSCOPIC RESECTION OF A LARGE TRACHEAL POUCH FOLLOWING TEF REPAIR AS AN INFANT, Steven S Rothenberg MD, Scott Sagel MD, The Mother and Child Hospital at P/SL , The Denver Children's Hospital

Purpose: To illustrate a thoracoscopic technique for resection of a giant tracheal pouch following TEF repair as a neonate.
Methods: An eight year old female with trisomy 21 and previous TEF repair as a neonate suffered from recurrent respiratory infections, often resulting in ICU admisssion. Work-up including bronchoscopy showed a giant residual tracheal pouch which appeared to be a sink for secretions and a possible nidus for the recurrent infections. Resection of the pouch was performed through a right thoracoscopic approach with the patient in a modified prone position with the right side elevated 30 degrees. Three ports were used and the pouch was resected with an Endo-GIA stapler (USSC)
Results: The thoracoscopic approach was successful and there were no operative or post-operative complications. Operative time was 70 minutes. The patient was extubated immediately post-operatively and no chest tube was left in place. The patient was discharged the next morning and since surgery 10 months ago has had no further respiratory problems. The patient underwent thoracoscopic ligation of a large PDA 2 months later without complication.
Conclusions: A thoracoscopic approach in this unusual case shows the thoracic trachea can be safely approached even in cases of a previous open thoracotomy. This approach could also be useful in cases of recurent or iatrogenic TEFs.

V014

DOUBLE AORTIC ARCH DIVISION WITH HARMONIC SCALPEL IN THE COURSE OF A THORACOSCOPIC TEF REPAIR, Marcelo Martinez-Ferro MD, Department of Pediatric Surgery. "Fundacion Hospitalaria" Children's Hospital. Buenos Aires. Argentina

Purpose: A double aortic arch results from the bifurcation of the aorta so that one branch passes in the normal position anterior to the trachea and the other between the trachea and the esophagus. Often one branch is larger than the other. When associated to esophageal atresia, apart of provoking different degrees of tracheal compression, this vascular ring impedes the accomplishment of the esophageal anastomosis. The surgical approach to division of the vascular ring depends on the anatomical evaluation of the malformation. When the posterior arch is the minor, its simple division relieves the compression. To our knowledge there are no previous reports of thoracoscopic resolution of a vascular ring in the course of an esophageal atresia repair.
Case Report: A full term neonate with a diagnosis of TEF was referred to our institution for surgical treatment. During thoracoscopy a large vessel leaning across the posterior tracheal wall was observed. After the fistula ligation, the esophageal anastomosis could not be achieved because of the abnormal vessel interposition. Further dissection and temporary vessel occlusion helped to diagnose a double aortic arch. The abnormal posterior arch was divided by means of a 5mm Ultra Shears® scissors (Autosonix ®Ultrasonic System, Tyco Healthcare) and immediate relief of the tracheal compression was observed. An end to end esophageal anastomosis was performed as we currently do in the esophageal atresia cases. No intraoperative or postoperative complications were observed.Cosmetic and functional results were excellent.
Conclusions: This case report reveals a further unknown benefit or the thoracoscopic TEF repair, as some associated vascular malformations may be treated during the initial approach. The author wants to share in the present video, all the technical aspects that resulted extremely useful for achieving a thoracoscopic esophageal reconstruction.

V015

LAPAROSCOPIC URETERO-URETEROSTOMY FOR DUPLICATION ANOMALIES OF THE URINARY TRACT, Lisandro A Piaggio MD, Ricardo Gonzalez, A I duPont Hospital for Children, Wilmington, Delaware, USA

INTRODUCTION: ipsilateral ureteroureterostomy is a validated option to treat duplication anomailes with upper pole ureteral ectopia or lower pole vesicoureteral reflux (VUR) when the affected moiety has significant function and the other ureter is normal. We report a tecnique of transperitoenal laparoscopic ureteoureteroscomy (LUU).
METHODS AND PROCEDURES: Patients are drapped from the torax down and stockinets placed in the lower extremities. The genitalia remains on the field for cystoscopic access. The table is tilted 30 degrees with the interest side up and slight Trendelemburg applied. Ports are: camera 5 mm (umbilical), and two 3 mm for work loacated on the hypogastrium off midline and the corresponding flank of the site to be operated.. A double ?J? stents is placed cystoscopically in the recipient ureter. If cystoscopic placement is not achieved a guide wire is placed percutaneously once the ureteral disection and ureterotomy are done. The wire is retrived from the bladder with cystocopy and the stent placed with the assitante of laparoscopic maneuvers (combined ?antegrade-retrograde? technique). An end-to-side anastomosis is performed transperitoneally with running or interrupted sutures of 6-0 PDS. An intraabdominal drain is left.
CONCLUSIONS: End-to-side ureteroureterostomy can be performed laparoscopically in infants with good results. Magnification and excellent anatomical visualization favors a good anastomosis. Operative time is longer than an open procedure. We believe that LUU should be incorporated into the pediatric urology armamentarium and offered as a valid approach for management of functional renal moieties wiht ureterel ectopia or VUR in duplication anomalies of the urinary tract.

V016

ROBOTIC REPAIR OF A DUODENAL ATRESIA IN A 1 DAY OLD FEMALE, John J Meehan MD, John Lawrence MD, Laura Phearman RN, Paula Francis RN, Anthony Sandler, Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

This abstract is presented with IRB approval
Robotic Surgery is a new technology which may help surgeons to perform minimally invasive procedures that are difficult using standard laparoscopic instruments. We present a video demonstration of the first minimally invasive repair of a duodenal atresia in a one day old newborn at our institution. This was accomplished in under 2 hours using robotic technology. The procedure was performed using one 5 mm camera port, two 5 mm robot instrument ports and one 3 mm accesory port. The pateint tolerated the procedure well and had no complications.

V017

LAPAROSCOPIC SLEEVE GASTRECTOMY AS A DEFINITIVE OPERATION FOR THE TREATMENT OF MORBID OBESITY, Raul J Rosenthal MD, Cleveland Clinic Florida

Background: The most common restrictive procedures for weight loss are vertical banded gastroplasty and gastric banding. Sleeve gastrectomy is a novel technique used mostly as the initial step for malabsorptive procedures. We describe a laparoscopic sleeve gastrectomy technique that is utilized as a definitive operation for the treatment of morbid obesity.
Material and Methods: We present our surgical technique for laparoscopic sleeve gastrectomy. The patient is placed in the supine position and the abdominal cavity is accessed with an Optiview trocar. At 6 cm proximal to the pylorus, the lesser sac is accessed and short gastric vessels are divided with the ultrasonic scalpel to the level of the gastroesophageal junction. A 52 French bougie is passed into the pyloric channel. A linear cutting stapler is used to resect the stomach in a vertical fashion, creating a gastric tube that is approximately 200 cc in diameter. The staple line is over-sewn with a 2-0 Vicryl suture. A drain is placed near the staple line and the specimen is placed in an endobag and extracted through the enlarged supraumbilical trocar site.
Conclusions: Laparoscopic sleeve gastrectomy is a safe and feasible technique that offers similar advantages to other current restrictive procedures for weight loss. Our preliminary

results show a morbidity of 5% and excess body weight loss of 31% at three months postoperatively.

V018

BARIATRIC SURGICAL DANGER ZONES AND HOW TO AVOID THEM, Thomas Inge MD, Maria Alonso MD, Victor Garcia MD, Marc Levitt MD, Cincinnati Children's Hospital Medical Center

The surgical care of the adolescent with morbid obesity carries numerous potential risks. Following roux en Y gastric bypass patients can develop numerous postoperative complications which are either directly related to the operation performed, indirectly related, or unrelated. Among the most important problems related to the operation are leakage from gastrointestinal anastomoses, and bowel obstruction from internal hernial orifices created. The cases presented will highlight a number of the danger zones commonly encountered during performance of the laparoscopic roux en Y gastric bypass and will present techniques for avoidance of postoperative complications.

V019

LAPAROSCOPIC LEFT LATERAL SEGMENTS RESECTION OF THE HUGE TUMOR OF THE LIVER, Pawel Nachulewicz PhD, Piotr Kalicinski PhD, Dariusz Polnik MD, Marek Szymczak MD, Ludmi?a Bacewicz PhD, Children?s Memorial Heath Institute. Department of Pediatric Surgery and Organ Transplantation. Warsaw, Poland

Laparoscopic anatomical resections of the liver are rarely reported. The procedure is technically difficult and should be performed by surgeon experienced in liver surgery and/or by transplant surgeon acquainted with liver anatomy. The authors present case of 16 old year girl with huge tumor located in segment II and III of the liver. Anatomical study of the CT scan revealed that the tumor, was about 11 cm in diameter, located in left lateral segments. The morphological study of the CT scan strongly suggested that the lesion had the features characteristic for FNH tumor. Laparoscopy was performed using four 10 and 5 mm ports and 0 degree camera located in umbiliculus. In the first step of operation the left liver ligament was divided and possibility of safe and complete resection was established. After that the left hepatic artery was exposed and clipped without dividing. The line of the resection which was parallel to hepatic falciforme ligament was coagulated by radiofrequency thermal ablation device. The guide probe was inserted directly by abdomen wall and inserted into the liver in the line of the resection. After thermal ablation the liver parenchyma was divided by ultrasonic hook without any bleeding. The resection started from the anterior margin of the liver until the resected segments, with tumor inside, were left on the left hepatic vein. The left hepatic vein was divided by Endo-GIA stapler but after division a bleeding from hepatic vein was observed. The control of bleeding was achieved by radiofrequency thermal ablation device. The intra abdominal pressure was lowered to 8-6 mm Hg during preparation of the liver parenchyma and end respiratory positive pressure was used during ventilation. After resection the tumor was put in a plastic bag, disintegrated inside and removed through 4 cm extrapubic incision. It is worth to notice that the left portal vein and left biliary duct were cut without any additional ligation. The whole blood loss was less than 50 ml. The postoperative histological investigation disclosed FNH tumor. The patient didn?t need any blood transfusion during and after operation. The postoperative course was uneventful and patient was discharged from the unit in the in 9th postoperative day. After six month observation any abnormalities in control USG and laboratory tests were revealed. The authors present video film from operation.

V020

LAPAROSCOPIC CHOLEDOCHAL CYST EXCISION AND BILIARY RECONSTRUCTION, Hanmin Lee MD, Cortes Raul MD, Diana L Farmer MD, University of California, San Francisco

Purpose: Complex biliary surgery remains one of the final frontiers of minimal access surgery. We describe our operative technique and present a single institutional experience of laparoscopic resection of choledochal cysts with roux-en-y reconstruction.

Methods: This study was performed with Institutional Review Board approval. All procedures were performed after confirmation of the choledochal cyst with Ultrasound and/or MRCP imaging. Operative technique is described. A review of the medical records of all patients undergoing laparoscopic approach was performed (n=8).

Resuls: Two three millimeter and two five millimeter ports are used. The gallbladder is dissected free and then divided at the infundibulum and left attached to the liver. The fundus of the gallbladder is used to retract the liver cephalad similar to a cholecystectomy. This allows excellent visualization of the porta hepatis. The choledochal cyst is dissected free and divided proximally and distally between titanium clips where bile duct narrows to normal size. An area of the jejunum that is appropriate for the roux-en-y is identified. This area is marked with 2 vessel loops of different colors separated by 1 cm to identify the more proximal and distal aspects. The umbilical port site is enlarged to approximately 1cm. The marked area of jejunum is brought out through this site and the roux-en-y limb is created. The roux limb is then returned intraabdominally, and the reconstruction is performed laparoscopically. The gallbladder and the choledochal cyst are removed at the end of the case. Seven of the eight patients had the procedures completed laparoscopically. One patient early in our experience had a conversion to open to complete separate anastamoses of the left and right hepatic ducts. There were no postoperative complications. All patients have normal bilirubins. Cosmetic results have been excellent.

Conclusion: A minimal access approach to children with choledochal cysts results in excellent outcome. Several technical modifications such as using the gallbladder to retract the liver and expose the porta hepatis and marking the the jejunum prior to creating the roux limb are useful in limiting operative time.

V021

LAPAROSCOPIC TREATMENT OF FOCAL HYPERINSULINISM, Pablo Laje MD, Foong Y Lim MD, N S Adzick MD, The Children's Hospital of Philadelphia

We present the case of a 6-month-old girl with diagnosis of congenital Hyperinsulinism (CHI), who failed the medical management. PET scan and PET-CT reconstruction were done and showed a single hot spot located between the body and tail of the pancreas. The procedure was done using only 3 trocars (1 x 3 mm in the right flank, a 4 mm scope in the umbilicus, and a 5 mm trocar in the left flank). Percutaneous stitches were used to lift the stomach and expose the lesser sac. We found a 4x4 mm lesion located in the anterior aspect of the pancreatic body. We resected it completely using a monopolar hook. Total operative time was 95 minutes. Post-operative recovery was uneventful, and the patient re-started feeding 6 hours after the procedure. The cosmetic result was excellent. In this particular case, the laparoscopic approach was safe and effective to find and remove a very small pancreatic lesion.

V022

LAPAROSCOPIC REPAIR OF AN IATROGENIC URETERAL INJURY, Lisandro A Piaggio MD, Ricardo Gonzalez MD, A I duPont Hospital for Children, Wilmington, DE, USA

INTRODUCTION: laparoscopic ureteral repair of iatrogenic injuries to the ureter has been described in the adult population during gynecologycal procedures. We report a laparosocpic end-to-end ureteroureterostomy (LUU)in a small child with inadvertent intraoperative transection of a ureter.

METHODS AND PROCEDURES: A 25 months old patient with duplication and right upper pole ureterocele with a history of pyonephrosis had an elective upper pole partial nephroureterectomy 6 months after the ureterocele punction. During the transperitoneal laparoscopic heminephroureterectomy the lower pole ureter was transeceted unintentionally. The injury became evident during the hiliar disection. The distal ureter was identificed at the pelvic rim. The ureteral edges were spatulated and an end to end ureteroureterostomy performed with interrupted stitches of 6-0 PDS over a double ?J? stent.

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RESULTS: The anastomosis was done through the same three trocars of the original procedure (one 5 mm and two 3 mm ports). Prior disection and spatulation of the ureter allowed a wide, tension free anastomosis. Postoperative course was uneventful. The abdominal drain was removed at 48 hs and the patients discharged on postoperative day three. At the time of the stent removal a retrograde pyelogram showed patent anastomoses with no strictures or leaks. Three months after surgery a renal ultrasound showed no hydronephrosis of the remaining moiety with normal doppler sign and normal looking parenchima.

CONCLUSIONS: early recognition of an iatrogenic ureteral injury is a key factor in the outcome of these lesions. In this case a LUU was carried out with good results avoiding the need for convertion to an open procedure. To the best of our knowledge this is the first pediatric report of a LUU with this application.

V023

GASTRIC TRICHOBEZOAR REMOVED BY LAPAROSCOPY, Guillermo Hernández-Peredo R MD, Pastor Escarcega-Fujigaki. MD, Virginia Campillo. MD, María Elena Sanchez. MD, Centro de Especialidades Medicas del Edo de Veracruz "Dr. Rafael Lucio"

The current case report, according to medical literature may be considered the first in Mexico and probably the third in the word. In this paper, the way a pediatric gastric bezoar removal by laparoscopical technic is shown. The case report is based on a twelve year old girl who presented a chronic abdominal pain. Endoscopic tests showed a trichobezoar involving body and antrogastric leavig aside pilorous and duodenus. Surgical procedure.- Under total balanced anesthesia and by means of laparoscopy technique by two ports (5mm) procedure and one optical (10mm). Trichobezoar gastric was removed by placing it inside a plastic bag. The gastric incision was then sewed with absorbable suture, and the trichobezoar was then removed through the umbilical scar (optical port 10mm), As trichobezoar was too big for the scar to come through,it was necessary to cut into pieces inside the bag. The bezoar´size was aproximately 13x10x5cm. The surgery procedure took 3 hours and a half and the patient was released from hospital seven days after the surgery. Trichobezoars are generally found in the stomach and rarely extended to small intestine. Several methods for the trichobezoar treatment have been suggested. Gastroscopy for big ones have been tried with very little success. Fragmentation with litotriptor and lazer treatment have also shown little success. Nirasawa and cols have reported laparoscopic removal by of four ports and incision. For the current case, only 3 ports were used for the surgery procedure which may be considered as a conventional one. The bezoar was removed through the umbilical scar with no laparotomic incision. As a result the option may be considered a good one for gastric bezoars, besides the benefits laparoscopic surgery may provide.

V024

LAPAROSCOPIC REDUCTION OF INTERNAL HERNIA DUE TO MECKEL'S DIVERTICULUM, Steven D Noe MD, Joseph A Iocono MD, Kentucky Children's Hospital, University of Kentucky

Video Summary: Patient is an 8 year old male. He presented with peri-umbilical abdominal pain x 12 hours duration. He initially responded to hydration but his pain recurred and was accompanied by nausea. His pain was out of proportion to his physical exam findings. A CT scan demonstrated isolated dilated small bowel loops and a large amount of free fluid in the pelvis. At laparoscopy, an attachment of a fibrous remnant from a Meckel?s diverticulum to the distal ileal mesentery caused an internal hernia with closed loop obstruction. The hernia was reduced; the fibrous remnant cut, and the Meckel?s diverticulum as well as the appendix were removed. Operative time was 68 minutes. Length of stay was 36 hours. The video is edited to 7 minutes and includes CT scan slices, and all operative detail.

The trick that is highlighted here is the ability to reduce internal hernias or intussuceptions laparoscoically. Gentled traction is easily done and negates the old idea of having to "push" the affected bowel out of its obstruction. The concept that underlies this presentation is the ability to adapt a standard 3 port laparo\scopic appendectomy approach to almost any pathology in the right lower quadrant.

V025

LAPAROSCOPIC MORGAGNI HERNIA REPAIR USING A NOVEL "SEE-SAW" SUTURING TECHNIQUE, Raul A Cortes MD, Hanmin Lee MD, Division of Pediatric Surgery, University of California, San Francisco

Purpose: To describe a novel extra-corporeal suturing used in Morgagni hernia repair

History: A 3-year-old boy with mild respiratory symptoms and recent diagnosis of a Morgagni hernia refered for laparoscopic repair.

Methods: After "frog-leg" positioning, 3 trocars (one 5mm camera port [umbilical] & two 3mm working ports [lateral, midaxillary position]) are placed intraperitoneal and access achieved. After visualization of the diaphragmatic defect, hernia sac excision is achieved using sharp and blunt dissection techniques. After the edges of the defect are freed, defect approximation commences utilizing the "see-saw" technique. A large 2-0 PDS suture needle is first passed trans-abdominally through a 1 cm epigastric incision and is guided purchase to puchase the defect rim. Further extracorporeal supination allows for ?fixation? of this needle to and then through the anterior abdominal wall. Re-grasping of the needle-point then allows for extra-corporeal guidance in the reverse direction. The needle is passed through the original entry point and tied extra-corporeally and the defect approximated. Interrupted knots are buried subcutaneously. The procedure took less than 60 minutes and the patient was discharged within 24 hours of surgery and remained without occurrence at 12 months follow-up.

Conclusion: Use of the "see-saw" extra-corporeal tying technique allows for simple, rapid, and effective tissue approximation as demonstrated in this video presentation. This technique can be applied more broadly in laparoscopic surgery as we have used it repair inguinal hernias and for Stamm gastrostomy placement.

V026

U-CLIP ASSISTED LAPAROSCOPIC MORGAGNI HERNIA REPAIR, Michael V Tirabassi MD, Kevin P Moriarty MD, Rajeev Prasad MD, Baystate Children's Hospital, Tufts University School of Medicine

Video Summary: This is a case of a female child born with multiple congenital anomalies including; imperforate anus with a rectovaginal fistula, A uterine didelphis with an obstructed right hemivagina, amulticystic dysplastic kidney, bilateral inguinal hernias, and a Morgagni hernia. She now presents at 2 ? years of age for definitive repair of her Morgagni hernia. The video begins with laparoscopic confirmation of the liver incarcerated within the hernia sac. After lysis of a ligamentous attachment the liver was reduced into the abdomen. The hernia was closed transversely with 2-0 Ethibond interrupted sutures. Suture placement was facilitated by maintaining traction on the prior stitches. Once only 2-4 mm gaps were left between the edges of the hernia sac U-Clips were used to complete the repair. The U-Clips proved well suited for this task as several clips could be laid in place prior to their final deployment maximizing visualization of the edges of the hernia defect. The patient tolerated the procedure well and had an uncomplicated post-operative recovery. Chest X-Rays both in the PACU and 3 months post-operatively confirmed placement and stability of the U-Clips in this application.

V027

DA VINCI ASSISTED LAPAROSCOPIC HELLER MYOTOMY AND TOUPET FUNDOPLICATION FOR ACHALASIA, Cristiano Boneti MD, Brendan T Campbell MD, Evan R Kokoska, Samuel D Smith, Richard J Jackson, Arkansas Childrens Hospital

Purpose: The purpose of this video is to demonstrate the use of the Da Vinci robot for a Heller myotomy and Toupet fundoplication in a patient with achalasia.

Methods: A 12mm trocar for the 30 degree scope was inserted into the umbilicus for the binocular camera. 5mm trocars for the robot working arms were placed bilaterally in the mid-abdomen approximately 4 cm from the umbilicus, A 3 mm trocar under the left subcostal margin was used for gastric retraction and a 5 mm trocar under the right subcostal margin used for liver retraction. A 40 French Maloney dilator was placed through the GE junction. The phrenoesophageal ligament was incised and esophagus bluntly dissected in its intraabdominal and lower mediastinal portions in order to allow a satisfactory esophagomyotomy and a posterior gastric wrap. Longitudinal esophagomyotomy was carried out with cautery extending 2 cm into the stomach and 6 cm proximal to the GE junction. Esophagomyotomy was extended approximately 180 degrees anteriorly. The gastric fundus was passed posterior to the esophagus and secured to the esophageal muscle and to the diaphragmatic crura bilaterally using a total of six interrupted 2-0 Ethibond sutures.
Results: Operating time was two hours and nineteen minutes. Excellent visualization was achieved and myotomy facilitated with the 3D camera system and robot endowrist technology.
Conclusion: The Da Vinci robot system greatly facilitated esophagomyotomy with the flexibility provided by the robotic endowrists. Visualization of the gastroesophageal junction was significantly improved by the binocular vision of the daVinci camera system.

V028

ROBOTIC-ASSISTED VNS PLACEMENT, Thom E Lobe MD, Simon K Wright MD, Blank Children's Hospital

Vagal Nerve Stimulation is now accepted therapy for siezures and depression. Placement of the electrode complex typically requires a conspicuous lateral cervical incision and the patient population is often young. This video details the novel use of the da Vinci robotic system for VNS placement. Access the the vagus nerve is achieved from the axilla and a robot is used to place the electrodes around the nerve. Given the implications of the unique incision (that the patient either has epilepsy or is depressed, the cosmetic advantage of this approach is not trivial.

V029

FETOSCOPY OF CONJOINT TWINS, Oluyinka O Olutoye MD, Mary P O'Day MD, Robert Carpenter MD, Darrell L Cass MD, Texas Center for Fetal Surgery, Baylor College of Medicne, Texas Children's Hospital and St. Luke's Episcopal Hospital, Houston, Texas.

Fetoscopy (or hysteroscopy) in mid gestation presents unique challenges. Unlike conventional endoscopy, fetoscopy is typically performed in a semi-opaque, liquid medium. Concern for pre-term labor and trocar site leaks necessitates the use of small instruments with limited optics. These and other challenges are highlighted in the case of a 39 year-old lady with monochorionic, diamniotic triplets discordant for thoracopagus conjoint twins referred for evaluation of feto-fetal transfusion syndrome. Fetoscopy was performed at 19 weeks gestation. This video shows the fetoscopic confirmation of conjoint twins and the delineation of the extent of fusion.

V030

RETROPERITONEAL EXCISION OF STAGE II NEUROBLASTOMA IN A NEONATE, Banieghbal B, Ch Baragwanath Hospital, Johannesburg, South Africa

A 4-week-old male was noted to have abdominal mass on routine examination. A CT scan confirmed a right adrenal mass. The child was HIV positive with a very high viral load and low CD4 count.

Prior to commencement of anti-retroviral therapy (i.e. HAART), a retroperitonoscopic excision of the mass was performed.

The technique essentially is:

1. Standard creation of retroperitoneal space with blunt dissection.
2. 5mm x 2 and 3mm x 1 trocars inserted
3. Arterial supply to the lesion was first dissected and coagulated with a 5mm curved Liga-Sure electrodes
4. Venous supply is then visualized and also coagulated with Liga-Sure
5. The lesion is then fully mobilized and removed after placing it in a sterile-glove's finger
6. The flank incision was enlarged to 12mm for intact removal of the mass

The histology confirmed an adrenal neuroblastoma , it was N-myc negative but serum Ferritin remained high after excision. The pediatric oncologists consider the tumor to be stage II.

The child is well and tumor free at 3 months, no chemotherapy is planned as yet

V031

SELECTIVE TRANSPERITONEAL ASPIRATION OF THE BOWEL (STAB). A SIMPLE AND EFFECTIVE METHOD FOR ACHIEVING SURGICAL FIELD IN CHILDREN WITH SIGNIFICANT INTESTINAL DISTENSION., Marcelo H Martinez-Ferro MD, Bignon Bignon, Department of Pediatric Surgery. Fundacion Hospitalaria, Children's Hospital. Buenos Aires. Argentina.

PURPOSE: Evaluate a method for achieving adequate surgical working space in patients with massive intestinal distension.
METHODS: From January 2003 to August 2005, 36 patients with different surgical conditions required STAB. The age of the patients ranged between 1 day and 18 years. The first trocar is placed through the umbilicus with an open technique. Using a regular 25G or 21G needle and a 20 or 60cc syringe, under endoscopic vision the dilated intestinal loops are punctured and its contents aspirated. The procedure can be repeated as many times as needed until an adequate surgical field is achieved. Technical aspects such as correct selection and grasping of the intestinal loop, avoiding of the mesenteric vessels and avoiding needle lateral movement during the procedure, resulted crucial to avoid complications.
RESULTS: Small intestine was punctured in 25 patients, Colon in 6 patients and both in 5 cases. The amount of punctures needed ranged from 2 to 9 on each patient. Surgical conditions that required STAB were: Biliary atresia (n:10), GER (n:7), Hirschsprung (n:5), Imperforate Anus (n:3), Intestinal occlusion (n:3), Appendicitis (n:3), Malrotation (n:2), Other (n:6). In all patients STAB resulted effective for achieving adequate surgical room for laparoscopy. No patient needed intestinal suture or any further sealing maneuver after STAB. No complications were observed during or after surgery. In 10 cases, STAB avoided a conversion, in the rest of the cases the procedure helped to perform the surgery faster and with an optimal view.
CONCLUSION: STAB is a very practical and effective method for achieving adequate laparoscopic surgical field in patients with dilated intestinal loops and helped to avoid conversions in a considerable number of cases. The absence of complications suggests that STAB should be freely used as a routine procedure in laparoscopic surgery.

Poster Abstract Listings

IPEG 2006

Basic Science

P001 Garcìa-Hern·ndez, Carlos "VIDEO-ASSISTED LAPAROSCOPIC INGUINAL HERNIOTOMY IN CHILDREN. ONE PORT APPROACH."
P002 Laje, Pablo "LAPAROSCOPIC JOINING OF THE EDGES"
P003 Saxena, Amulya "TAKING THE LAPAROSCOPIC ABDOMEN FOR GRANTED: PRUNE BELLY"
P004 Turial, Salmai "SUTURELESS LAPAROSCOPIC HERNIA REPAIR IN A SMALL ANIMAL MODEL"

Cancer

P005 MacKinlay, Gordon "REDUCING BOWEL IRRADIATION IN PELVIC RADIOTHERAPY"
P006 Nachulewicz, Pawel "LAPROSCOPIC RESECTION OF FRANTZ'S TUMOR OF THE PANCREAS"
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Poster Abstracts

P001

VIDEO-ASSISTED LAPAROSCOPIC INGUINAL HERNIOTOMY IN CHILDREN. ONE PORT APROACH. García-Hernández Carlos, Carvajal L, Dueñas JC, Diaz A. Copto A., Hospital Infantil Privado, Mexico City. Mexico.

Introduction:. There are a lot of reports about the laparoscopic approach in the treatment of inguinal hernia, but in almost all of them they use two or three ports to suture the internal inguinal ring, they have had good results, however they produced the sensation that they are using a very big procedure to resolve a very simple problem.The objective of this work is to know the possibility and advantages of the video-assisted laparoscopic inguinal herniotomy with one port over the traditional open herniotomy technique in children.

Methods and procedures. Prospective and comparative report. Group I open herniotomy with high ligature of the sac. The Group II, laparoscopic approach with one 5 mm port in the umbilicus. In the affected side, in a percutaneous way, we introduced a needle trough the peritoneum of the internal inguinal ring avoiding the vas deferens and vessels. We catch the tip of the needle and return it in subcutaneous way to its original insertion site, we knotted it and with this we close the inguinal ring.

Results: In two years we operated 52 patients. The group I, open surgery, had 25 children. The ages were from 2 to 138 months. In total they were 37 herniotomy procedures. The surgical time was from 13 to 51 minutes. One patient had stab infection and other had testicular atrophy. Group II video/assisted surgery, had 27 children, The ages were since 1 month old. We performed 40 herniotomy procedures. The surgical time were from 4 to 12 minutes. One patient suffers abdominal wall hematoma. No conversion in any case. With a follow up from 7 to 32 months there were not recurrences.

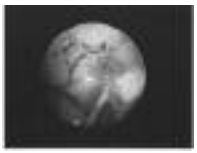
Conclusion: The video-assisted laparoscopic herniotomy with one port is as effective as the open technique in the control of the disease however the laparoscopic approach has some advantages; is an easy technique, it does not need special equipment, it permits to review the contralateral side and with this avoid unnecessary inguinal explorations. Another advantage is that it is not necessary to dissect the spermatic vessels and it preserves the testicular integrity. In the incarcerated hernia it permits to review the bowel irrigation. And finally it is possible to do in a very short time avoiding in this way the exposition to CO2.

P002

LAPAROSCOPIC JOINING OF THE EDGES, Pablo Laje MD, William H Peranteau MD,Alan W Flake MD, The Children's Hospital of Philadelphia

Background: The laparoscopic treatment of inguinal hernias in children has been constantly rejected by most of pediatric surgeons, probably because none of the techniques developed so far has demonstrated to be easier and/or more effective than the open procedure. From the placement of a percutaneous purse-string-like stitch, to the application of chemical sealants to the deep inguinal ring, all the existing techniques failed to convince surgeons, for different reasons.

Materials and Methods: Searching for a better option, we developed a new technique: the ?Laparoscopic Joining of the Edges?. It consists in the placement of nitinol clips to the edges of the deep inguinal ring in order to create a scar that eventually will close it forever. It is performed using one 3-mm trocar for the needle holder, and a 2,7 mm needle-scope. We tested the procedure in New Zealand rabbits because most of them have physiologic inguinal hernias, then being an excellent animal model. Ten adult male New Zealand rabbits were divided in two groups: A= Experimental animals (n = 8), and B= Control animals (n = 2). Animals in group A underwent laparoscopic placement of clips on day 0, were laparoscopically examined on days 15, 30 and 60, and sacrificed for histological assessment on days 90 (half of the group) and 120 (half of the group). Control animals underwent laparoscopy on day 0 (to confirm the presence of the hernias), and were sacrificed on day 120. All animals had bilateral inguinal hernias. A total of 8 inguinal rings were clipped. Mean operative time was 39 minutes, with an average of 2 minutes per clip.



P003

TAKING THE LAPAROSCOPIC ABDOMEN FOR GRANTED: PRUNE BELLY, Amulya K Saxena MD, Cornelia van Tuil MD, Pediatric Surgical University Medical Centre, Münster, Germany and Department of Pediatric Surgery, Medical University of Graz, Austria

AIM OF THE STUDY: Laparoscopic surgeons generally take the abdominal wall for granted. However, the normal abdominal wall ceases to exist in case of Prune-belly syndrome cases. To date, there has been no evaluation of the Prune-belly abdomen with regards to its mechanics in the context of laparoscopic procedure.

PATIENTS AND PROCEDURE: Eleven Prune-belly patients presenting with intra-abdominal testis had undergone laparoscopic evaluation and intervention. Access to abdomen was gained using the Hasson?s open access technique. Work port placement was also obtained using open access method. The procedure performed in all patients were either unilateral or bilateral Fowler-Stevens Stage-I operation.

RESULTS: All the procedures were completed without complications. The behavior of the prune-belly mechanics were best described using the ?half-soap bubble? theory. The surface tension was calculated to be markedly decreased with the increased in the abdominal radius. The partially present or absent abdominal wall muscles further accentuated this calculation in the lower abdomen.

CONCLUSION: The Prune-belly abdominal wall mechanics differ from normal abdominal wall. The insertion of trocars using ?closed? techniques is extremely dangerous. The mathematical evaluation and clinical interpretation of abdominal wall mechanics along with comparison to normal abdominal values are presented.

P004

SUTURELESS LAPAROSCOPIC HERNIA REPAIR IN A SMALL ANIMAL MODEL, Salmai Turial MD, Siree Häußer, Marc Kreutz, Felix Schier MD, Department of Pediatric Surgery, University Medical Centre Mainz, Germany

Introduction: The aim of this study is to verify the technical operability and therapeutic security of a new minimal invasive, ?sutureless laparoscopic hernia repair? with implantation of biocompatible fleece and/or fibrin glue in a small animal model.

Methods: 42 male CD rats (84 Op-procedures) were operated on the inguinal hernia by performing either laparoscopical or open surgery. In group 1, an incision was made at the internal inguinal ring which was adhesived with 0,5 ml fibrin glue (Beriplast (AVENTIS)). In group 2, a biocompatible fleece (soft PGA Felt (AVENTIS)) was applied to the fibrin glue, additionally. Group 3 was only treated with a Semiincision. The first half of each group was treated laparoscopically, second half by open laparotomy. After 4 weeks a relaparoscopy and/or relaparotomy was accomplished.

Results: The internal hernia ring was not closed completely, neither in the laparoscopic group, nor in the open group. The reason is to be found in the physiology of the rat and the lipom like tissue along the Ductus deferens. In our open operated test groups (partial-resection of the lipom tissue was done), the lipom like tissue grew to normal size. In two cases, we found minimal intestine adhesions, one testicular abscess and one testicular atrophy.

Conclusion: Due to the existence of a paraductal lipoma and physiological habit, the rat as being a small animal model is not qualified for this trial. We plan to continue the experiment on a suitable animal model.

Poster Abstracts

P005

REDUCING BOWEL IRRADIATION IN PELVIC RADIOTHERAPY, Gordon A MacKinlay MD, Gregor M Walker MD, Frances Yuille MD, Jon Pritchard MD, The Royal Hospital for Sick Children and The Western General Hospital, Edinburgh

Introduction: A 15 year old boy presented with a large left pelvic and loin mass. Imaging showed the mass to involve the left iliac bone and to extend from just above the acetabulum to just below the left kidney. Biopsy confirmed this to be a Ewing?s sarcoma and after 6 courses of chemotherapy he required radiotherapy. The radiotherapist requested displacement of the bowel from the pelvis to minimise radiation enteritis.

Objective: To displace the bowel from the pelvis using a minimally invasive approach and avoid delay in commencement of radiotherapy.

Method: A 2 cm abdominal incision was made at the level of the left anterior superior iliac spine and muscle splitting down to the peritoneum was achieved by blunt dissection. The peritoneum was swept medially and a 10mm port with a Hassan cone was introduced. Using a 10mm telescope and CO2 insufflation to a pressure of 15mmHg the retroperitoneal space was developed deeply into the pelvis and upwards towards the flank. A croissant shaped tissue expansion device (Nagor) was then introduced with the inflation port placed subcutaneously just above the ilium. 500ml of saline was injected into the device and the inflation observed using a laparoscope introduced via a subumbilical port.

Result: The retroperitoneal tissue expander was clearly visualised displacing the sigmoid colon to the right and preventing small bowel from lying over the ilium. The testicular vessels could be seen stretching over the device. Clinical examination in the post-operative period showed no varicocele and an ultrasound scan showed no evidence of ureteric obstruction. The patient went for radiotherapy planning on the second post-op day.

Conclusion: This laparoscopically-assisted technique enables the safe introduction of a tissue expander, through a very small incision, to displace bowel or other structures from the radiotherapy field and hopefully minimises the effects of radiation.

P006

LAPROSCOPIC RESECTION OF FRANTZ'S TUMOR OF THE PANCREAS, Pawel Nachulewicz PhD, Piotr Kalicinski, Margherita Budner MD, Ludmila Bacewicz PhD, Dariusz Polnik MD, Children's Memorial Heath Institute. Department of Pediatric Surgery and Organ Transplantation. Warsaw, Poland

Pancreatic malignances are relatively rare in childhood. Franz described solid and papillary endothelial tumor of pancreas originally in 1959, and since then the incidence of that tumors has been increased. The tumors are found predominantly in girls and young women and present as quickly enlarging mass in upper abdomen mostly confounding the diagnosis. The tumors have relatively low-grade malignant potential and surgical resection is in the most cases curable. We present a case of a 15 years-old girl who was admitted to our department with a history of upper quadrant abdominal pain. The control ultrasound examination revealed a 5 cm in diameter round mass located in the tail of pancreas and hilus of the spleen. The CT scan confirmed the diagnosis and patient was qualified to laparoscopic exploration. The 10 mm camera port was inserted below umbilicus and three 5 and 10 mm ports were located above and on the both sides of the umbilicus. The omentum minor was opened and the pancreas and spleen hilus was visualized The transverse colon was moved down and the round shape tumor hidden in spleno-colic ligament was located. The tumor was prepared with connectivity with pancreas tail. The end part of pancreas was freed and cut by Endo GIA stapler. The bleeding from the cut line was couagulated. The cut line was also sutured with prolene running suture. The tumor was inserted in plastic bag and removed out of the abdomen cavity through dilatated umbilical incision. The Redon catheter was left in the place of resection. The histopatologic study revealed solid and papillary epithelial tumor (Frantz?s tumor). The postoperative course was uneventful, the Redon catheter was removed in four postoperative day, and amylase level never elevated above normal range. The patient was discharged from hospital in 10th postoperative day. The authors present operative technique of laparoscopic pancreas resection.

P007

THE ROLE OF THORACOSCOPIC RESECTION OF METASTATIC LUNG REGION IN PEDIATRIC MALIGNANCY, H. Okuyama PhD, A. Kubota PhD, H. Kawahara PhD, Y. Shimizu PhD, T. Watanabe MD, H. Yamanaka MD, G. Tani MD, Department of Pediatric Surgery, Osaka Medical Center for Maternal and Child Health

Introduction: Recently aggressive treatments including intensive chemotherapy and surgical excision have improved the outcome of advanced malignant tumors in children. This paper evaluates the role of a thoracoscopic approach for metastatic lung region in pediatric malignant tumor.

Materials and Methods: Seven thoracoscopic operations for metastatic lung regions (2 were bilateral and 5 were unilateral) were performed in 6 children. There were 3 boys and 3 girls, aged 1 to 12 years, and weighed 10 to 50 kg. The primary tumors were Wilms tumor in 3, rhabdomyosarcoma in 2, and hepatoblastoma in 1 patient. The operation was performed through two 5-mm and one 12-mm thoracic ports using single lung ventilation. After pneumothorax was established at 4 mmHg with CO2 insufflation, the surface of the lung was carefully inspected to identify the metastatic regions detected by preoperative CT scan. The lung including metastatic regions was partially resected using multiple staplings devices. The number of the resected specimens ranged 1 to 4 (mean 2.1). In 2 patients, thoracoscopic operation for the metastatic regions and abdominal operation for the primary tumors were performed simultaneously

Results: The mean operative time was 2 hours. The intraoperative blood loss ranged 1 to 5 ml. There was no surgical morbidity. The minimum size of the metastatic region was 1-2 mm in diameter. All of the regions detected preoperatively were able to be identified and resected under thoracoscope without difficulty. All patients recovered from the operations uneventfully. After the operations, appropriate regimen of chemotherapy was decided based on the histological findings of the lung specimens, which showed viable tumor in 5 and scar tissue in 2. Finally 4 patients survived without disease (one of them died of an unrelated disease in the long-term follow-up period) and 2 patients died of the primary tumors.

Conclusions: Thoracoscopic approach for metastatic lung region is minimally invasive and provides useful information in the treatment of advanced malignant tumor in children.

P008

LAPAROSCOPIC RESECTION OF POSTOPERATIVE ADHESION BANDS UNDERNEATH THE SURGICAL INCISION, CAUSING RECURRENT ABDOMINAL PAIN IN CHILDREN, Jorge R Beltran MD, Fernando Fierro MD, Ivan D Molina MD,Juan J Valero MD, Pediatric Surgery Department, Clinica Infantil Colsubsidio, National University of Colombia, Bogota, Colombia

PURPOSE: Causes of recurrent abdominal pain in children are varied and sometimes reaching an etiology is difficult. Prior surgery could be a confusing factor, adding challenges to this problem. We perform Minimally Invasive Surgery as part of the diagnostic armamentarium and we found a possible cause in children with history of abdominal surgery.

METHODS: We reviewed the clinical charts of patients with recurrent abdominal pain and history of prior surgery that underwent laparoscopy in a two year period.

RESULTS: We found seven cases; all were girls, ages from 10 to 17 years old. None had a history of intestinal obstruction. Images and endoscopies taken during the initial workup were inconclusive. The onset of the abdominal pain was after an open surgery (5 appendectomies, one fundoplication and one umbilical herniorraphy) varying from three months to three years after the procedure. Laparoscopy was abnormal in six cases. Five had a localized adhesive band from the inner surface of the surgical incision to the bowel or the omentum, exerting traction to the bowel towards the abdominal wall. The other one had adhesions in pelvis not related to the incision.

Laparoscopic resection of the adhesions was accomplished in all cases. One girl had a relapse one month after surgery that subsided with intestinal rest and analgesics for two days. Follow up ranges from 6 to 20 months and all patients are pain free.

CONCLUSION: In a patient with history of surgery and subsequent recurrent abdominal pain adhesions are common, predominantly, a single adhesive band to the abdominal wall beneath the incision that causes an abnormal fixation of the bowel. This finding is likely to be the cause of the pain, and should be considered among the causes of recurrent abdominal pain. Laparoscopy is a very useful diagnostic tool and division of adhesions is easy to perform through this approach.

P009

LAPAROSCOPIC SUTURE RECTOPEXY IN CHILDREN, David A Partrick MD, Jennifer L Bruny, John K Petty MD, Denis D Bensard MD, The Children's Hospital, University of Colorado

Introduction: Laparoscopic rectopexy has been described in adults as an effective procedure for rectal prolapse. The aim of this study is to evaluate the outcomes of the first reported series of pediatric patients treated with a sutured laparoscopic rectopexy.

Methods: Between 2003 and 2005, five children have undergone laparoscopic rectopexy at a single institution. The charts of these patients were retrospectively reviewed for pre-operative symptoms, operative course, and post-operative outcomes. All patients received a pre-operative mechanical bowel preparation and an intra-operative enema at the beginning of the procedure. Two 5mm ports and one or two 3mm ports were used to elevate rectum, dissect in the pre-sacral space, and suture the rectum to the pre-sacral fascia. All patients were discharged to home after tolerating a diet and having their first bowel movement.

Results: The five children ranged in age from 4.5 to 11 years. Two patients had a neonatal resection of a sacrococcygeal teratoma. The other three patients suffered from ideopathic chronic constipation. Three patients had undergone multiple prior phenol injections and one had and ACE procedure previously. All five children had failed medical management. There were no intra-operative complications. The average length of stay was 1.6 days. The median follow-up is 5 months, with the longest follow-up being 2.5 years. None of the patients have had recurrence of their prolapse. One patient currently complains of an occasional sensation of leakage.

Conclusions: Laparoscopic sutured rectopexy is an effective method for treating recurrent rectal prolapse in children. Initial experience shows this to be a successful treatment for chronic patients who have failed medical management, including those with structural abnormalities such as prior sacrococcygeal teratoma resection. This can be achieved with minimal complications. Increasing length of follow-up will ultimately prove the durability of this repair.

P010

SUCCESSFUL REPAIR OF A DIAPHRAGMATIC HERNIA THROUGH A PERICARDIAL WINDOW WITH ACELLULAR DERMAL MATRIX, Earl C Downey MD, Kevin J Bruen MD, Division of Pediatric Surgery, University of Utah. Salt Lake City, UT, USA

Introduction: Although laparoscopic transabdominal pericardial window has been reported with success in adults, the procedure is not without complications. We present a case report of a 5 month old, former 31-week premature infant with pulmonary lymphangiectasia who developed a chronic, symptomatic, pericardial effusion after excision of an extensive mediastinal cystic hygroma.

Methods and Procedures: The effusion was treated with a laparoscopic pericardial window. The abdominal approach offered direct access to the pericardial space avoiding previously operated areas.

Results: The procedure was successful in that he recovered from his ventilatory failure, however post-operatively intestinal herniation occurred through the window. The defect was successfully repaired with acellular dermal matrix.

Conclusion: Diaphragmatic herniation through a pericardial window can be successfully repaired with acellular dermal matrix. The case report presents the surgical issues surrounding our initial attempt to utilize a laparoscopic pericardial window in a neonate.

P011

ORIGINAL THREE-TROCAR APPROACH OF LAPAROSCOPIC APPENDECTOMY, Vladimir Kotlobovsky MD, Anatoly Dronov MD, Department of Laparoscopic Surgery, Pediatric Regional Hospital

Background. The classic three-cannula approach is the most popular technique of laparoscopic appendectomy. First cannula for telescope goes through the umbilicus, second 6 mm ? in left iliac fossa, third 6 mm ? in right iliac fossa. This approach is effectiveness for cases of regular and ?lower? localization of appendix. But in cases of rising and ?high? appendix surgeons usually use forth 6 mm ?upper? trocar.

Materials. We use our original three-canula approach in all cases of regular, lower and ?high? localization of appendix. First cannula for telescope goes through the umbilicus, second 6 mm ? not in left, but in right iliac fossa. The appendix position identifies. Then, in cases of regular or ?lower? localization of appendix the third 6 mm trocar goes in the left iliac fossa as usual. We call this ?lower? approach. In cases of rising or ?high? appendix third 6 mm trocar goes not in left iliac, but in right subcostal region (we call this ?high? approach).

Results. Since 1991 5012 children ranged from 7 days to 16 years of age underwent laparoscopic appendectomy. We successfully used ?lower? approach in 3672 (74%) cases of regular and ?lower? localization of appendix, and ?upper? approach in 1340 (26 %) cases of rising and ?high? appendix.

Conclusions. Our original flexible three-cannula approach is effectiveness technique of laparoscopic appendectomy for all cases of regular, ?lower?, rising and ?high? localization of appendix.

P012

LAPAROSCOPIC ASSISTED ANO-RECTAL PULL-THROUGH FOR HIGH IMPERFORATE ANUS: MULTICENTRIC STUDY, Mario Lima MD, J Schleef MD, Giovanni Ruggeri MD, G Pellizzo MD, Stefano Tursini MD, Marcello Dòmini MD, Lorenzo De Biagi MD, Pediatric Surgery - University of Bologna; Pediatric Surgery - IRCCS "Burlo Garofalo", Trieste - Italy

Purpose: The aim of this report is to describe the experience of two centres with the Laparoscopic Assisted Anorectal Pull-through for High Imperforate Anus (LAARP), using the laparoscopic muscle electrostimulation.

Methods: Since March 2000 to September 2005 twelve patients, with a diagnosis of high anorectal malformations underwent LAARP. The patients were ten males with a recto-urethral fistula and two females with rectovaginal fistula, and aged from 3 to 9 months (mean age 4.8 months). The following associated malformations were described: sacral malformation, laryngeal stenosis, urethral duplication, multicystic kidney, renal agenesis, non palpable testis, gastro-esophageal reflux and esophageal atresia. All were treated with a colostomy in the newborn period followed by a delayed LAARP. The laparoscopic step was characterized by the stimulation of the puborectal muscle, using a modified Peña electrostimulator introduced via a trocar. Medium time of surgery was 2,5 hrs. All patients underwent a post operative period of anal dilatations.

Results: In eleven cases the LAARP was succesful while in one case, due to a strong tension from the colostomy, a conversion to open technique, was needed. One boy presented with an anal prolaps which requested an anoplasty. Post MRI in five show a good centration of the anus. After a follow up from 5 years to 6 months (medium 40 months) the patients are good, with a satisfactory bowel activity with a symmetric contraction.

Conclusion: Although an evaluation regarding the continence is to be followed up, LAARP should be considered for the correction of the high imperforate anus; and according to our experience it represents actually the gold standard. It offers the advantage of a good visualization of the fistula and of the surrounding structures and minimally invasive abdominal and perineal wounds. With the laparoscopic Peña stimulator the

direct observation of the puborectal slings contraction allows an evaluation of the functional contractility and an accurate colonic pull through in the centre of the muscle complex.

P014

NEW PRIMALY MANAGEMENT FOR APPENDICEAL ABSCESS IN CHILDREN: LAPAROSCOPIC DRAINAGE, Takashi Marusasa MD, Atsuyuki Yamataka MD, Hiroyuki Koga MD, Go Miyano MD, Hiroyuki Kobayashi MD, Geoffrey Lane MD, Takeshi Miyano PhD, Department of Pediatric General & Urogenital Surgery Juntendo University School of Medicine

Purpose The management of appendiceal abscess (AA) in children remains controversial. We evaluated primary laparoscopic treatment for efficacy.
Methods Eleven consecutive cases of AA (mean age:8.1?}2.8) between 2000 and 2004 were the subjects for this study. All had laparoscopic drainage (LD) at presentation (two Penrose drains were used; one within the abscess wall and the other within the pouch of Douglas). If the appendix was easily seen after LD, laparoscopic appendectomy (LA) was also performed.
Results Eight patients underwent LD alone (LD-group) and 3 underwent LD/LA (LA-group). In the LD-group, mean operating time was 87.9?}23.2 minutes, oral feeding commenced after a mean of 2.3?}0.8 days, patients became afebrile within 4.3?}3.1 days, intravenous antibiotics were ceased after 5.3?}3.1 days, C-reactive protein normalized within 13.6?}4.2 days, drains were removed within 4.0?}1.3 days, and hospital stay ranged from 7-15 days. There were no intra- or post-operative complications related to the LD procedure. In 6 of the 8 LD patients, interval LA was performed at 6.8?}5.8 months after LD, but was not performed in the remaining 2 due to parental refusal. In the LA-group, operating time ranged from 125-150 minutes, and oral feeding commenced 4, 5, and 5 days after LA, respectively. One patient developed an adhesive bowel obstruction after LA, which resolved with conservative therapy; in the remaining 2, there were no complications. All 11 patients are well after a mean follow-up period of 3.1?}1.1 years. Histological examination of the excised appendices showed mild to severe inflammation.
Conclusion We recommend that laparoscopy be adopted for the primary management of AA as it would appear to be simple, safe, and effective.

P015

LAPAROSCOPIC TREATMENT OF A SMALL BOWEL VOLVULUS SECONDARY TO AN OMPHALO-MESENTERIC REMNANT., Mario Mendoza-Sagaon MD, Rudolf Leuthardt MD, Servizio Cantonale di Chirurgia Pediatrica. Ospedale Regionale di Bellinzona e Valli. Switzerland

Omphalo-mesenteric remnants such as Meckel diverticulum, fistulas and fibrous or vascular cords are common causes of small bowel obstruction in children. We present a case of a child with a small bowel volvulus secondary to a vascular omphalo-mesenteric remnant that was diagnosed and operated with a laparoscopic approach. A 9 year-old boy known for chronic episodes of abdominal pain with spontaneous resolution and a glandular hypospadias arrived in our institution with acute abdominal pain in the right hemiabdomen associated to biliar vomiting and abdominal distension. Clinical exam showed a painful distended abdomen with a palpable mass in the right hemiabdomen. The abdominal scanner showed data compatible with small bowel obstruction and a vascular structure coming from the umbilicus to the area of the intestinal obstruction. The child underwent laparoscopic exploration and a small bowel volvulus with intestinal ischemia was diagnosed. A vascular remnant coming from the umbilicus to the mesentery was at the base of the volvulus. After bowel detorsion and resection of the vascular cord the color and peristalsis of the bowel recovered and the intestinal resection was not necessary. The child was discharged on postoperative day 3. Exploratory laparoscopy is a safe and feasible option to evaluate children with intestinal obstruction and depending on the findings and the surgeon laparoscopic skills, a full surgical correction without open conversion could be achieved

P016

GIANT POLYPOID GASTRIC HETEROTOPIA OF THE JEJUNUM PRESENTING WITH INTERMITTENT INTUSSUSCEPTION, Philip A Omotosho MD, Rajeev Prasad MD, Michael V Tirabassi MD, Kevin P Moriarty MD, Baystate Children?s Hospital, Tufts University School of Medicine

Gastric heterotopia presenting as a tumorous mass in the jejunum is uncommon. A 17-year-old otherwise healthy female presented with a 6-month history of gastro-esophageal reflux like symptoms, epigastric pain, and occasional bilious vomiting. Medical therapy aimed at the reflux symptoms was unsuccessful. CT scan of the abdomen revealed small bowel intussusception. Laparoscopy was performed using a 3-port technique: a 12 mm supraumbilical Hasson port, a 5 mm port in the right upper quadrant, and a 5mm port in left lateral abdomen at the level of the umbilicus. The entire small bowel was inspected and ran from the ileocecal valve to the ligament of Treitz. A dilated and thickened segment of proximal jejunum, with a clear transition point about 60 cm from the ligament of Treitz was identified. The small bowel was delivered via a Tan-Bianchi circumumbilical incision. Proximal to the transition point there was a palpable intraluminal mass as the lead point. An enterotomy was made to expose a single bilobed polyp on the antimesenteric border. The polyp was excised using an endo GIA stapler, and the enterotomy was closed. Histologic examination rendered a diagnosis of giant polypoid gastric heterotopia of the jejunum without atypia. At 2-month follow-up, the patient remains asymptomatic.

P017

LAPAROSCOPIC CONTINENT APPENDICOCECOSTOMY INTO A CONCEALED STOMA: OPTIMIZING COSMESIS AND CONTINENCE, Lisandro A Piaggio MD, T Ernesto Figueroa MD, Ricardo Gonzalez MD, A I duPont Hospital for Children, Wilmington, Delaware, USA

INTRODUCTION: Previously reported techniques to construct a laparoscopic appendicocecostomy (LA) for antegrade continent enemas (ACE) do not create a continence mechanism with a submucosal tunnel which carries the risk of leakeage of stool. . We report a technique to construct a LA for ACE, which creates a submucosal tunnel, mimicking the open technique (Modified Malone).
METHODS AND PROCEDURES: Review of 2 patients who underwent LA as an isolated procedure. Technique: A ?V? incision was done in the umbilicus before gaining access to the abdominal cavity to create a concealed stoma afterwards. The procedure was done though three ports. The appendix was isolated and the cecum mobilized. A 3 cm seromuscular incision was done from the base of the appendix along the taenia and the proximal appendix was placed in a submucosal tunnel created by reapproximating the seromuscular layer of the cecum with interrupted sutures. Under laparoscopic vision the appendix was brought out through the umbilical site and anastomosed to the V flap previously prepared in the umbilical skin. A catheter was left in place for four weeks.
RESULTS: Patients were 8.5 and 8.6 years old and had neurogenic bowel dysfunction secondary to lipomeningocele and tethered spinal cord in 1 child and high imperforated anus and tethered spinal cord in the other . Mean operative time was 3.5 hours. Blood loss was negligible. There were no complications. Patients were discharge home at 3 and 4 days postoperatively. At 3 and 8 months after surgery, both patients are continent of stool and very satisfied with the cosmetic results. .
CONCLUSIONS: The open appendicocecostomy for ACE with submucosal tunnel located at the umbilicus provides a concealed stoma with no leaking problems. We were able to reproduce this technique with the advantage offered by laparoscopy: minimal invasiveness and improved cosmesis

Poster Abstracts

P018

LAPAROSCOPIC APPENDICECTOMY IN CHILDREN: 108 CONSECUTIVE CASES WITHOUT OPEN CONVERSION, Sai Prasad TR MD, Chan Hon Chui MD, Anette Sundfor Jacobsen MD, Department of Paediatric Surgery, KK Women's and Children's Hospital, Singapore

Purpose: Laparoscopic appendicectomy (LA) in children has growing acceptance worldwide but the same for complicated appendicitis is still contentious. Conversion to open surgery may be needed especially in cases of complicated appendicitis and it usually implies sound surgical judgment rather than a complication. We present the experience of a single surgeon in the successful and safe application of laparoscopy without resorting to open surgery for suspected appendicitis in children.

Methods: Single surgeon observational analysis of consecutive cases of laparoscopic application for suspected appendicitis.

Results: Between Sep 2003 and Sep 2005, 108 consecutive patients (60 males and 48 females) aged 3-15 years (mean 10.2±2.9) with suspected appendicitis underwent LA by the same surgeon. 19 (17.6%) patients had acute appendicitis (AA), 39 (36.1%) had acute suppurative appendicitis (ASA) adherent to the caecum with localized and/or pelvic pus pocketing, 42 (38.9%) had perforated appendicitis (APA) with generalized peritonitis and 8 (7.4%) had normal appendix [omental infarct (1), torted Meckel?s diverticulum (MD) (1), Meckel?s diverticulitis and perforation (1), torted ovary (1), ruptured luteal cyst and hemoperitoneum (1), acute pancreatitis (1), primary peritonitis (1) and mesenteric adenitis (1)]. 4 patients including 2 with incidental MD underwent simultaneous laparoscopic assisted trans-umbilical Meckel?s diverticulectomy. Partial omentectomy for omental infarct, oophorectomy for torted ovary and ovarian cystectomy for ruptured hemorrhagic luteal cyst was done in one patient each. There were no operative complications and none required conversion to open surgery. The operative duration ranged from 23-180 mins (56.7±26.1); AA: 23-60 mins (35.7±13.4), ASA: 25-95 mins (47.1±14.8), APA 33-180mins (74.7±26.8). The hospital stay ranged from 1-14 days (4.2±1.9); AA: 1-4 days (2.6±1.1), ASA: 2-7 days (3.6±1), APA: 3-14 days (5.4±2.1). There were 3 (2.7%) complications; 2 (1.8%)had adhesive intestinal obstruction and underwent successful laparoscopic adhesiolysis and 1 (0.9%) had umbilical wound infection.

Conclusions: Laparoscopic approach is the order of the day for children with suspected appendicitis. The magnified panoramic view of the peritoneal cavity allows safe and effective surgery for all stages of appendicitis including management of concurrent lesions and post appendicectomy complications.

P019

LAPAROSCOPIC APPROACH TO DIVERSE MECKEL?S DIVERTICULAR COMPLICATIONS IN CHILDREN, Sai Prasad TR MD, Fatima Reyaz Singaporewalla,Chan Hon Chui MD,Yee Low MD,Te-Lu Yap MD,Thichen Kalden Lama MD,Caroline Choo Phaik Ong MD,Anette Sundfor Jacobsen MD, Department of Paediatric Surgery, KK Women's and Children's Hospital, Singapore

Objectives: Meckel?s diverticulum (MD) presents unique challenges for a pediatric surgeon as it is prone to varied complications. This case series highlights the diverse presentations and laparoscopic management of MD in children.

Methods: Retrospective analysis of consecutive cases of laparoscopic assisted trans-umbilical Meckel?s diverticulectomy (LATUM) for diverse Meckel?s diverticular complications, at our Institute.

Results: Between October 2002 and October 2005, 30 patients (23 males and 7 females) aged 2-15 years (mean 9.1±3.5) underwent LATUM. 12 (40%) patients had painless per-rectal bleeding and 5 (16.7%) patients presented with intestinal obstruction; 3 due to a mesodiverticular band and 1 each due to intussusception and floppy giant cystic dilatation of MD causing intestinal obstruction. 3 (10%) patients presented with features masquerading as appendicitis; 2 had perforated MD with secondary inflammation of the appendix and one had a torted and gangrenous MD. In 10 (33.3%) patients, incidental MD with a narrow base was noted at appendicectomy for appendicitis. All patients underwent successful LATUM along with appendicectomy in 13 (43.3%) patients. The operative duration was 72-266 minutes (133.3±49.2). There were no operative complications and none required conversion to open surgery. The hospital stay was 3-9 days (5.3±1.5). There were 3 (10%) cases of postoperative adhesive intestinal obstruction; 2 underwent successful laparoscopic adhesiolysis and one necessitated conversion to suprapubic laparotomy to release the pelvic adhesions. There were no other complications during the follow-up.

Conclusions: LATUM is a safe and effective procedure with a better cosmetic outcome that can be performed for diverse manifestations of MD. The technique also allows palpation of the MD and avoids usage of expensive staplers.

P020

EVOLUTION OF LIGATURES PERFORMED ON INTESTINAL LOOP, DURING SOME SURGICAL TECHNIQUES, R. A. O Shidi MD, P. L. Castelfranchi PhD, Sergio Zucoloto PhD, Laboratory of Experimental Surgery, Department of Surgery, Orthopedic and Traumathology, University of São Paulo (USP) Ribeirão Preto SP. Brazil

Objectives: To investigate the causes of late failure of the ligated loop, that becomes permeable after some period of time permitting an entero-oesophagic reflux of bile and pancreatic juice in various surgical technique utilized to reconstruct digestive transit after total gastrectomy, linked to favor alkaline pancreato-bilio reflux, after the reestablishment of the intestinal transit,.

Methods: To study this phenomenon, gastro-jejunal anastomosis associated to ligature of the pyloric and afferent jejunal loops was performed on cats, grouped into three: I - Cotton Cord (cordonnet). II - Cotton Ribbon. III - Synthetic (supramide) thread. Animals were observed from 15 to 82 days following surgery.

Results: It was verified that various ligature materials (biologic and synthetic threads) used for ligature, tend to penetrate through the thickness of the intestinal wall, towards the visceral mucosa, and to be expelled into the lumen of the jejunum.

Conclusions: There was a similar evolutional tendency with all 3 threads utilized, although synthetic threads provoked lesser tissue reaction than the biologic threads.

P021

LAPAROSCOPIC PLACEMENT OF CHAIT CECOSTOMY TUBE: A SIMPLER APPROACH, Garret S Zallen MD, Machael G Caty MD, Nancy Jacobs RN,Michael Katz, Doernbecher Children's Hospital and The Women and Children's Hospital of Buffalo

Chronic constipation and incontinence are vexing problems that are challenging for children, parents and physicians. Multiple bowel regimes have been tried with varying success. In 1996, Shandling et. al. published a percutaneous technique to place a low profile cecostomy tube (Chait tube) for antegrade enemas. This tube has proven to be very effective with almost a 90% satisfaction rate. Demand for this device is now growing, but many centers do not have pediatric interventional radiologists with expertise in placement of this device. Two laparoscopic techniques have been presented, one using the appendix as a conduit for the Chait tube and the other using intracorporael suturing. We now present a technique that uses a disposable T-fastener system to secure the cecum and has substantially decreased OR time and increased the ease of placement. Methods: After overnight bowel prep, patients were taken to the OR and an umbilical camera port was placed along with a LLQ bowel grasper. Their cecum was fixed to the abdominal wall using comercially available (Cook Medical)T-fasteners in the four quadrants of the cecum. Before the fasteners were tightened a needle was placed into the cecum and a wire was advanced. An 11fr vascular introducer was then used to dilate a tract and the Chait tube was inserted down the sheath. The sheath was pealed away and the fasteners were then secured. Results: Eighteen patients had the above procedure, mean age 10.8 yrs and 11 patients had VP shunts. Average operating time was 52 minutes. There were no intraoperative complications. One patient had to have a T-fastener removed in clinic a few months post-op, there was one wound

infection and one VP shunt infection. All the patients report dramatically improved bowel habits. Conclusion: Chait cecostomy tubes are an effective tool in the management of constipation and incontinence. We describe a technique to place these tubes that is easy to master and can be preformed by anyone with laparoscopic experience.

P022

RATIONAL USE OF PELVIC DRAINS IN COMPLICATED LAPAROSCOPIC APPENDECTOMY, Jeffrey L Zitsman MD, College of Physicians and Surgeons, Columbia University; Morgan Stanley Children's Hospital of New York Presbyterian, New York, New York 10032

Laparoscopic appendectomy is now accepted treatment for acute appendicitis in children and adolescents. Infectious complications are uncommon due to timely diagnosis (often expedited by imaging studies), early use of broad-spectrum antibiotics, and small incisions with minimal tissue injury. Internal infectious complications remain problematic.

Since 1993 the author has performed 455 laparoscopic appendectomies, 92 of which were either perforated appendicitis or gangrenous appendicitis with peritonitis and purulent exudates in the pelvis. After pelvic abscesses developed in several cases, I began to place pelvic drains (Jackson-Pratt, either 7F or 10F) in patients with gangrenous or ruptured appendicitis who 1) had established pelvic abscesses, or 2) were found to have peritonitis manifested as abundant fibrinous exudates on the peritoneum and other intrabdominal structures (e.g., bowel, fallopian tube) associated with the inflamed appendix. Free intrabdominal pus was present in each case. Intravenous antibiotic therapy was identical for all patients.

Prior to using drains, 9 pelvic abscesses developed in 53 patients. After instituting selective drainage, 2 pelvic abscesses developed in 39 patients. Patients who were not drained stayed an average of 7.5 days in hospital, while those who had drains placed at surgery stayed an average of 5.5 days. These findings do not reach statistical significance, but they suggest a trend toward fewer abscesses and shorter hospital stays in patients who have a drain placed at the time of laparoscopic appendectomy for complicated appendicitis.

P023

LAPAROSCOPIC RESECTION OF A GIANT MESENTERIC CYST, A CASE REPORT AND LITERATURE REVIEW, Jorge R Beltran MD, Fernando Fierro MD, Ivan D Molina MD, Juan J Valero MD, Pediatric Surgery Department, Clinica Infantil Colsubsidio, National University of Colombia, Bogota, Colombia

Mesenteric cysts are rare causes of benign abdominal masses. We report a case of a 9 years old girl presenting with a history of three months of intermittent abdominal pain in the left abdomen and urinary symptoms of frequency and discomfort during micturation. No mass was palpated. Work up included a urinalysis that was normal and an abdominal ultrasound that depicted a cystic mass in the left flank, mobile and multiloculated. The urinary tract was normal. A CT Scan showed a cystic mass of 14 cm in diameter, compatible with a mesenteric cyst. During laparoscopy we found a cyst covered by the great omentum and located at the jejunal mesentery. We used four trocars. The cyst was initially drained and resection was carried out using monopolar cautery and the ?spaghetti technique?: a grasper holding the cyst is rolled several times causing traction, thus facilitating dissection. Complete excision was accomplished through the umbilical port.

CT Scan 6 moths after the procedure did not show any recurrence and the patient is asymptomatic. A literature review is presented.

P024

MODIFIED LAPAROSCOPIC HELLER-DOR PROCEDURE IN CHILDREN WITH ACHALASIA, Juan I Camps MD, Prithvi Reddy MD, Rathna Amarnath MD, Randal L Croshaw MD, Palmetto Health Children's Hospital, Columbia, SC

Abstract: Incidence of achalasia in children is low and the post-surgical data is obtained mostly from adult literature. Surgery has become the best option for children as a definitive treatment. Postoperative dysphagia is the major disabling problem in the preoperative and postoperative period. We proposed a modification in laparoscopic Heller-Dor procedure in 6 patients to prevent recurrence of symptoms.

Methods: Over last 3 years, 6 pediatric patients have been referred for surgical evaluation. All were male, mean age ranged 14 years. Symptoms were dysphagia for solid and liquid with weight loss. Mean time of symptoms 6 months. All patients had confimation of diagnosis by esophageal motility study, barium esophagogram and upper endoscopy. None of the patients had sustained response to esophageal dilatation. One patient had laparoscopic Heller-Dor procedure 6 years ago in a different institution.

Description of the operation: After standard laparoscopic access to the abdomen, complete circumferential dissection of the intrathoracic and abdominal esophagus was done. Vagus nerves visualized and left intact. Length of myotomy was from dilated esophagus to 2 cm. distal of cardias. Myotomy edges were sutured to the crura and diaphragm with interrupted permanent sutures. Goal was to keep the myotomy edges always open to prevent recurrence of dysphagia and maintain low the resting endoluminal esophageal pressure. A partial anterior fundoplication was then performed and attached only to the diaphragm to prevent postoperative reflux, protect the exposed mucosa and avoid axial rotation of the distal esophagus. Upper endoscopy was done during surgery only in the first 3 cases.

Results: All patients were followed up for at least 6 months to 2 years. No early postoperative complications. First case required surgery 6 months later because dysphagia related to rotation of the distal esophagus. One case required pyloroplasty because preoperative severe delayed of gastric empyting. Mean hospital stay 72 hrs. Mean operative time 185 mts. Liquid diet during 10 days and progresion to regular diet in 2 weeks.

Conclusion: Achalasia in children can be treated surgically with excellent outcome. Our modification of Heller-Dor procedure provides stability in the esophageal myotomy, so both edges will remain wide open. Anterior fundoplication protects the exposed mucosa without causing rotation of the distal esophagus. Our modification improves and eliminates complications.

P025

LAPAROSCOPIC PYLOROMYOTOMY: IS COSMESIS REASON ENOUGH?, Karen Diefenbach MD, Milissa McKee MD, Yale University School of Medicine

Introduction: The purpose of this study was to assess the importance of cosmesis in patients undergoing laparoscopic pyloromyotomy(LP). Methods:After literature review and with IRB approval, we performed a survey of the parents of infants who had undergone LP regarding the importance of cosmesis, and their overall satisfaction. We are also following all patients prospectively to document the appearance of their scars. In addition, if a parent underwent open pylormyotomy(OP), they were questioned about their satisfaction with their own scars and photographed for objective documentation. Results:In our small cohort of patients, we had three parents with a history of OP. They were uniformly unhappy with the appearance of their scars. Overall, all parents were very satisfied with the cosmetic results after LP. Particularly the parents who had their own scar for comparison were extremely grateful for the improved appearance of their childrens scars.

Conclusions: LP has already been shown to be feasible, safe, and efficacious. OP has been a standard treatment for many years, but longterm followup of the scars is lacking. Based on

parental surveys, prospective followup of our laparoscopic cases and photographic documentation of all identified open cases in adults, we feel cosmesis is reason enough to pursue laparoscopic pyloromyotomy.

P026

NISSEN FUNDOPLICATION BY LAPAROSCOPY IN PEDIATRIC NEUROLOGICAL IMPAIRMENT PATIENTS IN A GENERAL HOSPITAL, Montes-Tapia Fernando MD, Garza Ulises MD, Martinez Guillermo MD, Silva Erick MD, Zarate Maricela MD, Cura Idalia MD, Menchaca Mario MD, Abrego Valdemar MD, Munoz Gerardo MD, Pediatric Gastroesophageal Reflux Clinic ? Regional Center of Laparoscopic Surgery. University Hospital of the Universidad Autónoma de Nuevo Leon. Monterrey-México

Objective: The Nissen fundoplication by laparoscopy (NFL) is the most common surgical treatment of gastroesophageal reflux disease (GERD) in the pediatric neurologically impaired patients. The aim of this study is to verify the safety and outcome of the NFL in ours patients in a general hospital.
Methods: Between May 2003 to October 2005, 42 patients with GERD were operated by NFL by the same surgical team, of those 24 patients (57.1%) with neurological impairment, the diagnosis are hypoxic isquemic encephalopathy in 14 patients (58%), 4 (17%) brain tumors and other neurological pathologies in 6 patients (25%). Spasticity in 19 patients (79%). Digestive symptoms in 10 patients (42%), respiratory 6 (25%) and with both symptoms 8 patients (33%). Age:1 month to 16 years, weight 2.9 to 45 kg. Diagnosis was based on upper gastrointestinal series (UGI) and gastric isotope emptying in all patients, endoscopy and pH studies in 2 patients.
Results: No convertions, 3 patients (12%) counted on previous gastrostomy and they were not retired. Hiatal hernia in 2 patients (8%), 4 patients sectioned short gastric vessels (12.5%). Gastrostomy in 20 patients (83%) and piloroplasty in 9 patients (37.5%). Intraoperative complications in 2 patients (8%): 1 perforation of the esophagus and 1 of the stomach treated by laparoscopy. Perioperative complications 3 patients (12.5%) one patient had intestinal occlusion by port hernia of 3 mm and 2 loosenings of gastrostomy, all reoperated by laparotomy. The beginning of the enteral route went the 3er. day in patients with gastrostomy and 6th. day with piloroplasty. Hospital stay was in range of 5 to 19 days. All the patients did UGI one month later without GER evidence. In the follow up 5 patients died of causes related to their pathology (4 brain tumors), the follow up is in range of 1 to 29 months.
Conclusions: Antireflux surgery in pediatric neurologically impaired patients can be trouble by significant complications, we have 2 loosening of gastrostomy in patients by spasticity but extracorporeal fixation of the stomach avoid this complication. We think that the absence of recurrence of GERD and paraeshopageal hernias in ours patients is due to the accomplishment of pyloroplasty in patients who therefore require it according to scintigraphy, and the more rational section of short gastric vessels, who are one of the natural fixation of the gastric fundus.

P027

LAPAROSCOPIC EXCISION OF A GASTRIC DIVERTICULUM VIA THE LESSER SAC, Monica E Lopez MD, Christine Whyte MD, Sylvain Kleinhaus MD, Yolanda Rivas MD, Albert Einstein College of Medicine, Children?s Hospital at Montefiore, Bronx, NY

INTRODUCTION: Gastric diverticulum is a rare entity, which may present with vague abdominal pain, nausea, vomiting, and weight loss. Diverticulectomy is recommended for patients with intractable symptoms or complications. We report the laparoscopic excision of a gastric diverticulum in a 15-year old girl who had been symptomatic for 5 years despite maximal medical therapy.
METHODS AND PROCEDURES: Endoscopy and upper gastrointestinal contrast examination demonstrated a posterior gastric diverticulum near the gastro-esophageal junction. Laparoscopic resection was performed via a five-port technique and the use of a linear cutting and stapling device. The left gastric vessels were divided to allow access to the lesser sac. Pre- and post-operative images plus a short video clip will be shown.
RESULT: The patient had an uneventful recovery and her symptoms resolved. She is well at one year of follow up.
CONCLUSION: The laparoscopic approach can be valuable and effective for the excision of gastric diverticula in children.

P028

LAPAROSCOPIC NISSEN FUNDOPLICATION. IS IT NECESSARY TO STITCH THE WRAP TO THE ESOPHAGUS ?, Georges Azzie MD, Lena Perger MD, Robert Weinsheimer, Libby Watch MD, Children's hospital of New Mexico,University of New Mexico

Background/Purpose: Traditional teaching is that Nissen fundoplications should be stitched to the esophagus to prevent slipping. There exist no prospective studies comparing fixed to unfixed fundoplications. Indeed, normal anatomy, physiology, and intra-operative observation would suggest that a degree of freedom is necessary at the gastro-esophageal junction. At our institution, we complete laparoscopic Nissen fundoplications by stitching together both sides of the wraped fundus without taking a bite of esophagus in between. The purpose of this study is to review our results and compare them to other published series.
Methods: We completed a retrospective chart review of children undergoing laparoscopic Nissen fundoplication at our institution over the past three years. We looked at patient age, weight and co-morbidities, as well as operative time, peri-operative complications, time when feeds were started, time of hospitalization, wrap failures and whether patients had improved on follow-up.
Results: 80 procedures were performed on 74 patients. Seven cases involved a re-do fundoplication. In 49 cases a feeding gastrostomy was placed at time of fundoplication. 23 cases were done in the face of pre-existing gastrostomy. In 12 cases other procedures were performed at time of fundoplication (tracheostomy, umbilical hernia repair, hiatal hernia repair, biopsy). One case was converted to open due to gastrotomy. It happened in the second re-do fundoplication for this patient. Ages ranged from one month to 19 years (mean 2.5 years) and weight between 2.5 and 60 kg (mean 11 kg). 64% of patients were neurologically impaired and in 38% of cases there was a history of previous abdominal procedure. 27% of children were born prematurely. Operative times ranged from 61 minutes to 7 hours 6 minutes. Dysphagia did not occur post-operatively. Wrap failure requiring re-operation occurred in 8.7% of cases. 95% of patients are improved on follow-up. 1 patient was lost to follow-up. 3 patients died of causes unrelated to surgery.
Conclusions: Laparoscopic Nissen fundoplication without fixation of the wrap to esophagus is successful in the treatment of gastro-esophageal reflux in children. The rate of dysphagia may be lower. The percentage of wrap failure is within acceptable limits.

P029

LAPAROSCOPICALLY SUPERVISED PEG AT TIME OF NISSEN FUNDOPLICATION: A SAFE OPTION, Georges Azzie MD, Lena Perger MD, Libby Watch MD, Robert Weinsheimer MD, Children's Hospital of New Mexico,University of New Mexico

Background/Purpose: Children with gastro-esophageal reflux disease often have associated feeding difficulties that warrant insertion of feeding gastrostomy at the time of anti-reflux procedure. Options for gastrostomy tube insertion at the time of laparoscopic Nissen fundoplication include laparoscopic, percutaneous endoscopic gastrostomy (PEG), and open. The complication rate of PEG can be decreased if it is placed under laparoscopic supervision. The purpose of this paper is to describe our experience with laparoscopically supervised PEG placement at the time of anti-reflux procedure.
Methods: A retrospective chart review was conducted on all children undergoing PEG placement at the time of laparoscopic Nissen fundoplication. Peri-operative complications were recorded.
Results: 43 patients had PEG placement at the time of laparoscopic Nissen fundoplication. There were 3 occasions where laparoscopic supervision was helpful in prevention of potential complication. One patient had the tube placed through the

mesocolon which was recognized and corrected intra-operatively. In the second patient, the liver was interposed between the stomach and the abdominal wall, making safe PEG placement difficult.The patient developed hemodynamic instability and PEG placement was deferred. It was successfully performed a week later. The third patient developed intra-operative anesthetic complications and PEG placement was deferred. The primary surgeon was not available at that time for a PEG,and the covering surgeon chose to perform an open gastrostomy. There were 4 cases of minor gastrostomy tube problems in the post operative period: all were transient and easily correctable. Follow-up ranges from 6 to 36 months.
Conclusions: Percutaneous endoscopic gastrostomy tube placement at the time of laparoscopic Nissen fundoplication is safe and effective. Combined laparoscopic and endoscopic modalities allow optimal PEG placement as well as endoscopic evaluation of the fundoplication at its completion.

P030

LAPAROSCOPIC APPROACH FOR DUODENAL OBSTRUCTION IN THE NEWBORN AND CHILDREN: PRELIMINARY REPORT, Mario Riquelme MD, Arturo Aranda MD, Jeslia Torres MD, Rodriguez Carlos MD, Tito Resendiz, Christus-Muguerza Hospital, Monterrey, Mexico - Centro de Ginecología y Obstericia de Monterrey, México. - Prog Postgrado Cir Gral. Hospital San Jose Tec, Monterrey, Mexico

BACKGROUND. There are few papers in the literature about laparosopic approach for duodenal obstruction, particularly for duodenal atresia. The aim of this study is to report the results of 4 cases treated laparoscopically, and conclude on its safety and feasibility.

MATERIAL AND METHODS-We report 4 cases of duodenal obstruction: one 72hr female newborn, 2,700gm weight with a duodenal atresia, one 48hr newborn, 3,400gm weight with annular pancreas and 2 with Ladd?s bands, 6 and 8 months old. Diagnosis was made with clinical evaluation, simple X-ray film in the Ladd patients, and contrast gastroduodenal X-ray series for the annular pancreas. All procedures were performed using 3 trocars: one 5mm in the umbilicus and two 3 mm ports for the working instruments, placed in the upper left quadrant at the anterior axillary?s line and one in the suprapubic area. A 4 mm 30 degree scope was used. In the first patient, with duodenal atresia, we made a one-layer diamond duodenal-duodenal anastomosis with six stitches of five-zero silk sutures with extra-corporeal knots. The surgical time was 2 hours and 30 minutes. The second patient had the diagnosis at birth of esophageal atresia plus major cardiac malformations. Esophageal repair was done at 48hr of birth, and seven days later contrast material was passed, detecting a duodenal obstruction. Annular pancreas was diagnosed and laparoscopic duodeno-duodeno anastomosis was done at 15 days, surgical time of 2hr 45 minutes. Patient died a month later after a cardiovascular procedure. The two patients with duodenal occlusion due to Ladds bands, were approached in the same way. We did lysis of adhesions and the surgical time was of 45 and 50 minutes hrs, hospital length of stay was 8 days.

RESULTS. ?In all the patients 5-7 days later, there was no duodenal obstruction nor leakage appeared in the X ray studies 5-7 days later, and were fed. The patient with annular pancreas died of cardiovascular complications, the other 3 patients clinic follow up of 36 months, have been asymptomatic.

CONCLUSIONS? We conclude that the laparoscopic approach to duodenal obstruction is a safe and effective approach, being less invasive and with less postoperative hospital stay. Doing the lysis of Ladd?s bands by laparoscopy is quite simple, but in the duodenal atresia and annular pancreas, the duodenoduodenostomy requires advanced laparoscopic skills

P031

LAPAROCOPIC NISSEN 4 TROCAR PROCEDURE IN NEUROLOGICALLY IMPAIRED (NI) CHILDREN VS. NON-NI CHILDREN. RESULTS AND SURGICAL OPTIONS, Mario Riquelme MD, Arturo Aranda MD, Carlos Rodriguez MD, Jeslia Torres MD, Hospital Christus-Muguerza, UDEM. Monterrey, Mexico. — Prog. postgrado en Cir. Gral. ITESM, Hospital San Jose, Monterrey, Mexico.

Introduction. GERD and its surgical treatment in the neurologically impaired (NI) children is a greater challenge than non-NI Children. The aim of this study is to present the results of Laposcopic Nissen fundoplication with 4 trocars and assess the complications in the two groups.
Materials and Methods. Between January 2001 and February 2004, 65 children diagnosed with Gastroesophageal Reflux Disease (GERD) by upper GI series, pH probe or Scintiscan were operated laparoscopically. 19 NI patients, 46 non-NI patients. A Nissen fundoplication was performed using 4 trocars, two work ports, one liver retractor port and scope port. Surgical time was measured, short and long term postoperative follow-up was done.
Results. The average surgical time was 140.8 minutes. Nissen only was 129.8 minutes, Nissen + G-tube 154.3 minutes. All procedures were successfully completed laparoscopically. The interventions that were reoperations of NI patients had the longest surgical time. The mean oral tolerance was 2 days. After a 15 to 49 months period of follow up, we had 2 NI patients deaths. One related to associate with religious based refusal of needed blood transfusion, second one as a complication of ENT procedure. We had 2 esophageal stenosis, treated with dilatations, one transverse colon superficial burn, repaired without perforation, one postincisional hernia, two granulomas of G-tube site, and one G-tube leak are reported.
Conclusion. The results in this study demonstrates that the less invasive 4 trocar laparoscopic Nissen fundoplication is a safe an effective approach. The rate of postoperative complications and hospital stay increase in NI children. Surgical times are also longer in NI patients. Surgical alternatives as Esophagogastric separation should be considered in failed fundoplication in NI children.

P032

EXPERIENCE WITH AN ATRAUMATIC SELF RETAINING LIVER RETRACTOR FOR FUNDOPLICATION AND HIATAL HERNIA REPAIRS, Steven S Rothenberg MD, The Mother ans Child Hospital at P/SL Denver, Colorado

Purpose: To demonstrate an easy, inexpensive, atraumatic, and hands free technique for liver retraction during laparoscopic fundoplication and hiatal hernia surgery.
Methods: From October 1992 to October 2005 over 1200 laparoscopic Nissen fundoplications were performed by the author. Exposure to the hiatus and gastro-esophageal junction were obtained initially through a right mid-quadrant trocar with the use of varied fan and then snake retractors. In 1996 this technique was changed to a mid-epigastic port site with placement of an atraumatic grasper secured to the diaphragm above the hiatus to provide a self retaining retractor. A further modification of an in-line handle was made in 2001. Patient age ranged from 7 days to 23 years and weight from 1.5 to 120 kg. Placement of the retractor took less then 30 seconds in all cases.
Results: 650 consecutive procedures were performed using this technique. All procedures were completed successfully laparoscopically. Retractor slippage requiring repositioning occurred in 48 cases (7.4%). In 27 cases 4.1% it was necessary for the assistant to hold the retractor for at least part of the procedure to give adequate exposure. In only one case, a 110 Kg 12 y.o. was exposure inadequate requiring placement of a 10mm fan retractor.
There were no significant injuries or abrasions to the liver in any of the cases.
Conclusion: Placement of a self retaining grasper on the diaphragm provides a safe, efficient, and atraumatic technique for liver retraction in surgeries at the esophageal hiatus. This allows the procedure to be performed easily with only one assistant and without the need for expensive, traumatic, and awkward retractors

P033

A CLINICAL AND FINANCIAL COMPARISON OF PEDIATRIC LAPAROSCOPIC VERSUS OPEN FUNDOPLICATION, Daniel J Ostlie MD, Shawn D St Peter MD,Troy L Spilde MD,Charles L Snyder,George W Holcomb, III MD, Children's Mercy Hospital and Clinics

Poster Abstracts

Introduction: Laparoscopic fundoplication (LF) is rapidly replacing open fundoplication (OF) as the surgical approach for GER not controlled by medical management in infants/children. We compared various clinical outcome and financial parameters to determine if one technique is superior.
Methods: With IRB approval, charts and charge data for the last 50 patients undergoing elective LF or OF were reviewed (n=100). Clinical variables evaluated included gender, age, weight, length of stay (LOS), operative time (OT), and time to initial (IF) and full (FF) feeds. Financial charges included: anesthesia, central supply/sterilization, equipment, operating suite, hospital room/board, pharmacy, and total charges.
Results: The groups were equally matched in relation to gender, age, and weight. The number of patients that had a gastrostomy placed at operation did not differ. The variables evaluated that reached statistical significance ($p<0.05$) between LF and OF were multiple. Those variables favoring LNF included; LOS (1.2 vs 2.9 days), IF (7.3 vs 27.9 hrs), FF (21.8 vs 42.9 hrs), equipment ($1006 vs $1609), hospital room ($1290 vs $2847), and pharmacy ($180 vs $461). Those variables favoring OF included; OT (77 vs 91 min), anesthesia ($389 vs $475), central supply/sterilization ($1367 vs $2515), and operating suite ($4058 vs $5142). Regarding pharmacy charges, the increased charges in the OF group were related to increased narcotic usage rather than more regular home medications, indicating that the severity of illness between the two groups was similar. Total charges were similar. (LF,$11,449; OF,$11,632).
Conclusions: Interestingly, although there were statistical differences in every charge category, total charges for LF and OF did not differ. Thus, traditionally higher expenses from longer OT for LF seem to be offset by cost benefits such as shorter LOS, reduced discomfort as evidenced by lower narcotic charges and earlier IF/FF.

P034

LAPAROSCOPIC NISSEN FUNDOPLICATION IN PATIENTS WITH PREVIOUS GASTROSTOMY. DESCRIPTION OF TECHNIQUE AND COMPARISON TO A SIMILAR OPERATIVE PROCEDURE ON A VIRGIN ABDOMEN, Georges Azzie MD, Lena Perger MD, Libby Watch MD, Robert Weinsheimer MD, Children's Hospital of New Mexico,University of New Mexico

Background/Purpose: When children develop gastroesophageal reflux disease after insertion of a gastrostomy tube, the challenge is how best to complete the laparoscopic anti-reflux procedure. Taking down the gastrostomy may be necessary if exposure is impaired. We have developed a simple method of port selection and placement that has allowed us to complete the laparoscopic procedure without the need for gastrostomy takedown. The purpose of this study is twofold:
1) To describe our operative technique
2) In children requiring anti-reflux procedures, to compare the group of patients with pre-existing gastrostomy to the group of patients without.
Methods: A five port technique for laparoscopic Nissen fundoplication in children with pre-existing gastrostomy has been carried out at our institution since 2002. These were compared to patients with virgin abdomens who underwent laparoscopic Nissen fundoplication with concomitant percutaneous endoscopic gastrostomy . Charts were reviewed retrospectively. Operative times as well as intra- and post-operative complications were considered.
Results: There were 16 cases of laparoscopic Nissen fundoplication performed in patients with pre-existing gastrostomies (group 1).Laparoscopic Nissen fundoplication without takedown of gastrostomy was successful in all cases. Operative time was on average 169 minutes. This compares favorably to an average operative time of 149 minutes for the group of 34 patients with virgin abdomens (group 2) who underwent laparoscopic Nissen fundoplication with concomitant percutaneous endoscopic gastrostomy (PEG). There were one intraoperative and two post-operative complications in each group. One child in group 2 died of a cause unrelated to surgery. Follow-up ranged from 2 to 25 months for patients in group 1 and from 6 to 36 months for patients in group 2.
Conclusions: Laparoscopic Nissen fundoplication is feasible and safe in the face of previous gastrostomy. Appropriate port selection and placement permit the necessary movement of camera and instruments for successful completion of the operation without gastrostomy takedown. When the final objective is laparoscopic Nissen fundoplication and gastrostomy, operative times as well as peri-operative complication rates are similar whether a gastrostomy is present or not pre-operatively.

P035

IS "U-STITCH TECHNIQUE" APPROPRIATE FOR GASTROSTOMY IN A PATIENT WITH ISOLATED ESOPHAGEAL ATRESIA?, Rahsan Vargun MD, Berktug Bahadir MD, Gulnur Gollu MD, Aydin Yagmurlu MD, Department of Pediatric Surgery, Ankara University School of Medicine

Gastrostomy placement is a common procedure performed in the pediatric population. A variety of techniques combining open, percutaneous endoscopic, and laparoscopic procedures have been reported in children. Laparoscopic assisted gastrostomy has become our procedure of choice in children and U-stitch technique is the most commonly used among all. Herein we report a complication of this procedure, which could have been mortal if not observed earlier.
A neonate with long gap isolated esophageal atresia was referred. After initial evaluation, a gastrostomy tube insertion was decided. She underwent a laparoscopic assisted gastrostomy tube insertion using U-stitch method. There was no drainage of the gastric secretions postoperatively. An abdominal x-ray using contrast material at 18th hours postoperatively demonstrated signs of tube dislodgement. At laparatomy, gastrostomy tube was found to be placed through both the anterior and posterior gastric walls. Tube was removed, posterior wall was repaired and a Stamm gastrostomy was performed. Although the U-stitch technique appears to be technically easy, small size of the stomach with no aerial dilatation makes it easy to pass the needle through both the anterior and posterior gastric walls leading to complications. Hence, a trocar- site can be more appropriate in patients with isolated esophageal atresia.

P036

PARAOVARIC CYSTS IN TEENAGERS, PRESENTING AS ACUTE APPENDICITIS, Jorge R Beltran MD, Fernando Fierro MD,Ivan D Molina MD,Juan J Valero, Pediatric Surgery Department, Clinica Infantil Colsubsidio, National University of Colombia, Bogota, Colombia

OBJECTIVE: In teenagers, ovarian pathology is a common differential diagnosis from acute appendicitis. Although ultrasound is very useful in detecting ovarian problems it is not as sensitive for diagnosing paraovarian cysts. The use of laparoscopy for appendectomy affords to visualize the internal genitalia more widely. We present an uncommon cause of gynecologic cysts, mimicking acute appendicitis.
METHODS: Medical charts review of patients with paraovarian cysts during one year.
RESULTS: We compiled four cases of paraovaric cysts found during laparoscopic approach for acute appendicitis. Age ranged from 14 to 16 years. Symptoms were onset of abdominal pain less than 24 hours, nausea or vomiting and shivers. Physical examination revealed tenderness and guarding in the right lower quadrant. Hemograms varied from normal to mild leukocytosis. Preoperative ultrasounds did not report a paraovaric cyst, but rather, in two cases they showed a hemorrhagic ovarian cyst and did not rule out acute appendicitis. All had hemoperitoneum and the appendix was normal at the time of laparoscopy. In the first case, an incidental appendectomy was carried out. Two girls had a necrotic Hydatid of Morgagni due to acute torsion, adjacent to the right ovary and were managed with laparoscopic resection. Two had a paraovaric cyst within the broad ligament and were big enough to produce torsion of the pedicle of the tube and ovary. In one case, these organs were already necrotic and a salpingo-oophorectomy was necessary along with resection of the cyst. In the other one, the pedicle was untwisted returning circulation and the cyst was excised with hydrodissection techniques. Pathology results showed acute necrosis due to infarction in all cases.
CONCLUSION: Acute torsion of paraovaric cysts present as

acute appendicitis and are not detected by ultrasound. When located within the broad ligament, they can compromise circulation of the ovary and tube. Laparoscopic resection was feasible in all cases.

P037

LAPAROSCOPIC FEMALE INGUINAL HERNIORRAPHY, nikunj chokshi MD, kasper wang MD, cathy e shin MD, childrens hospital los angeles university of southern california keck school of medicine, los angeles, ca

Introduction: The aim of this study is to report out initial experience with a new technique for female laparoscopic inguinal hernia repair. The method of laparoscopic inversion herniotomy was first described in 2003 by Hong et al. In this procedure, the hernia sac is inverted into the abdominal cavity, ligated and resected. Minimal access is achieved using only an umbilical trocar, with instruments being inserted through stab incisions placed laterally on the abdominal wall.

Methods and procedures: The procedure was performed in female children, ages 1 month to 15 ? years (median 4.9 yrs). A single 3mm umbilical trocar was placed, through which the camera was inserted. Two stab incisions were made in the lateral aspects of the abdomen for placement of an O vicryl endoloop and a Maryland dissector, both 2 mm instruments. The dissector went through the endoloop first, then through the patent internal ring to grasp the distal portion of the hernia sac. This sac was then inverted into the abdominal cavity and twisted upon itself. The sac was ligated singly with EndoloopÆ (Ethicon Inc, Somerville, New Jersey). After the first recurrence, the sac was then resected. Contralateral hernia was repaired if present, and the umbilicus was closed.

Results: The procedure has been performed in forty-seven females, (10 bilateral, 16 left and 21 right) from 2004-2005, by two attending surgeons at our institution. Follow up ranged from one month to almost 2 years. There were two recurrences, both of which occurred within the first 5 months. In the first patient, in whom the sac was not resected at the initial operation, an open repair was performed for the recurrence. The second patient with a recurrence was repaired laparoscopically. All patients were discharged same day. The cosmetic results were excellent.

Conclusion: Laparoscopic inversion herniorraphy is a feasible alternative method for repair of female pediatric indirect inguinal hernias. The procedure is easily learned, and allows evaluation of the asymptomatic contralateral side. As our experience showed us, resection of the sac appears to be crucial in preventing recurrence.

P038

ALTERNATIVE PROCEDURE FOR THE PREVENTION OF TENKHOFF CATHETER MALFUNCTION:LAPAROSCOPIC OMENTOPEXIA, Fernando Montes-Tapia MD, Garza Ulises MD, Hinojosa Miguel MD, Rubio Nadina MD, Silva Erick MD, Zarate Maricela MD, Abrego Valdemar MD, Munoz Gerardo MD, University Hospital of the Universidad Autónoma de Nuevo Léon. Monterrey-México.

Objective: The placement of Tenckhoff catheter (TC) for continuous ambulatory peritoneal dialysis (CAPD) in children with renal insufficiency represents the beginning of the patient?s rehabilitation. Usually during open surgery, omentectomy is made for TC placement , with the purpose to diminish the risk of obstruction by the omentum. The aim of this case is the presentation of one alternative for the prevention of malfunction of the CAPD

Clinical case: Female of 12 years old with diagnosis of renal insufficiency secondary to tubulointerstitial nephritis, which required CAPD for support treatment before receiving a renal transplant. Surgical technique: General anesthesia, insufflation with CO2 of 10 mmHg, optic 5 mm 30° in the umbilicus, trocar of 5 mm in RLQ and 7 mm in the LLQ, for TC placing, once the exploration of the peritoneal cavity is made, fixation of the omentum (omentopexia) to the supra-umbilical abdominal wall with 3 intracorporeal points (1 central and 2 lateral ones) having verified that the omentum does not migrate towards the pelvic hollow, the TC is placed thru orifice of trocar of 7 mm in the LLQ; dialysis was started immediately after surgery. After the surgical procedure, the parents were instructed for TC management and the patient was discharged 48 hours later .During the follow up, the DPCA was working properly even one month after the renal transplant.

Conclusions: Although minimally invasive techniques are use to reduce morbility of conventional surgery during TC insertion as the Seldinger?s technique, guided by ultrasound or videoasisted, the rate of malfunction is as high as 60% and mainly due to obstruction of the catheter by the omentum which is resolved by the resection of it, but if the omentum is fixed to the anterior abdominal wall we can obtain the same benefits of the omentectomy , reducing the risk of bleeding related to its resection. Although the use of TC in this case was for a short time, this could be used as an alternative procedure to reduced TC malfunction and a prospective study is needed to evaluate its benefits in pediatric patients.

P039

LAPAROSCOPIC REPAIR OF COMBINED IMPALEMENT INJURY OF THE RECTUM AND URINARY BLADDER, ANDRZEJ GOLEBIEWSKI PhD, MAREK KROLAK PhD,LESZEK KOMASARA PhD, MEDICAL UNIVERSITY OF GDANSK, DEPARTMENT OF PEDIATRIC SURGERY AND UROLOGY, GDANSK, POLAND

Combined penetrating trauma of the rectum and urinary bladder from impalement in children is rare, and constitutes a diagnostic and therapeutic challenge. We report a case of laparoscopic repair of an intraperitoneal bladder rupture caused by accidental impalement on a steel bar.

A 12-year-old boy was brought to the emergency room because he was stabbed through the rectum by a steel bar. Physical examination was unremarkable with the exception of small wound in the rectum and mild tenderness in the lower abdomen. Urine sample revealed mild hematuria. Abdominal CT scan showed a small amount of free intraperitoneal fluid. Because of the presence of unexplained free intraperitoneal fluid and equivocal signs of peritoneal irritation, exploratory laparoscopy was performed. Three 5-mm ports and a 5-mm laparoscope were used. Laparoscopic examination of the abdomen revealed urinary ascites in the rectosigmoid pouch and a 2-cm rupture at the dome of the bladder. The laceration was sutured in two layers using an intracorporeal technique. The abdominal cavity was lavaged and drained by the Penrose drain. The rectal wound was drained and closed primarily transanally- no colostomy was necessary. The patient was discharged on the fifth postoperative day with indwelling urinary catheter. Ten days after the operation, a repeated cystogram showed no evidence of leak.

Rectal injuries in the pediatric population most often result from accidental impalement, blunt trauma or sexual abuse. Signs of abdominal trauma may be minimal when rectal perforation exists, so delays in diagnosis are frequent. Laparoscopic exploration for trauma in hemodynamically stable patients is feasible. Repair of simple intraabdominal injuries such as bladder rupture can be safely performed endoscopically.

P040

POST-TRANSPLANT LAPAROSCOPIC HAND ASSISTED BILATERAL NEPHRECTOMY FOR PERSISTENT POLYURIA, Dragan Kravarusic MD, Silviu Grisaru MD, Osama Bawazir MD, David Sigalet PhD, Alberta Children?s Hospital, Calgary, Alberta, Canada

Introduction: Sustained pre and post- transplant polyuria is not considered an absolute indication for nephrectomy; however, it may complicate fluid management with prolonged admissions. We are presenting selected patients where post-transplant bilateral nephrectomy facilitated fluid management and improved significantly quality of life.

Patients and Method: Bilateral native kidney laparoscopic hand assisted nephrectomy was performed in two patients (4 kidneys) one month after receiving a living related donor renal transplant. The indication for nephrectomy was severe post-transplant polyuria secondary to the patient?s underlying disease; juvenile nephronophthisis. Both patients had a persistent post-transplant daily urine output of 7-8 liter/day for more then 3 weeks and continued to have a variable serum creatinine, dependent on intravenous hydration.

Results: The procedure was well tolerated and did not affect renal graft function. Following the procedure, serum creatinine levels stabilized while daily fluid requirements decreased to 2.5-3.5 liter/day in both patients. Bilateral laparoscopic native kidneys nephrectomy in children has previously been reported, however to the best of our knowledge not after kidney transplantation and certainly not in the immediate post-transplant period.
Conclusion: Bilateral native kidneys nephrectomy can be safely performed in pediatric renal transplant recipients in the immediate post-transplant period. This new approach may allow preemptive transplantation and avoid the need for a transition period on dialysis in cases in which pre-transplant nephrectomy is not absolutely indicated.

P041

THE SIGNIFICANCE OF LAPAROSCOPY IN XY FEMALE INTERSEX DISORDERS, Dragan Kravarusic MD, Elad Feigin MD, Emmanuelle Seguier-Lipszyc MD, Naomi Weintrob MD, Revital Nimri MD, Nessia Nagelberg BS, Moshe Phillip MD, Enrique Freud MD, Schneider Children?s Medical Center of Israel, Petah Tiqva, Israel

Purpose: The goal of this presentation is to reinforce the value of laparoscopic gonadectomy in management of selected intersex disorders. Management of gonadal disorders poses a series of problems for the treating clinician. Even after complete investigation and imaging there is uncertainty about the exact nature of the disease and management options. Optimal timing, necessity for removal of the gonadal tissue, and risk of malignancy have been debated issues.
Patients and Methods: A retrospective chart review of eleven XY phenotypic females (mean age 10.4±4.1 y), evaluated by a diagnostic protocol which included; clinical, hormonal profile, sonographic and cytogenetic examination. Patients/parents were counseled by the team concerning the different diagnostic/treatment modalities and laparoscopy was offered to them. Uneventful bilateral laparoscopic gonadectomy was performed in all patients and gonads were submitted for histopathological examination.
Results: In four patients (36.36 %) with triplet among them, findings were uncertain and the final diagnosis was established only after gonadectomy and microscopic examination (Leydig cell hypoplasia). In five patients (45.45 %) pre-operative diagnosis of complete androgen insensitivity syndrome was clarified by laparoscopy and they underwent prophylactic gonadectomy owing to completed pubertal growth. Microscopic findings were equivalent to normal testes except one where Sertoli adenoma was found. Laparoscopic gonadectomy was a curative procedure for two patients (18.18 %) with gonadal dysgenesis since histopathology revealed malignancy (gonadoblastoma and bilateral dysgerminoma). All patients were discharged the next day with no complications and good cosmetic outcome.
Conclusions: In complementation to hormonal tests and cytogenetic techniques, laparoscopic exploration and eventual gonadectomy are completing the diagnostic work up and enabling adequate therapeutic approach. Our results suggest that timing for procedure depend on diagnostic certainty, and specific syndrome. Since laparoscopic procedure has given a new standard, well tolerated by patients and widely accepted by surgeons, it should be included in routine management of the practice for XY female individuals.

P042

LAPAROSCOPIC NEPHROURETERECTOMY IN CHILDREN - A PROSPECTIVE STUDY ON LIGASURE TM VERSUS CLIP/LIGATION, Martin L Metzelder MD, Joachim F Kuebler MD, Claus Petersen PhD, Sylvia Gluer PhD, Rainer Nustede PhD, Akihiro Shimotakahara PhD, Benno M Ure PhD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

Purpose: The present study was conducted to compare dissecting the renal hilar vessels in laparoscopic transabdominal nephrectomy in children using the Endo-Ligasure TM vessel sealing system versus clip/ligation.
Patients and Methods: In a prospective and comparative study, from February, 2003, to April, 2004, 10 consecutive patients (group 1) underwent laparoscopic transabdominal nephroureterectomy using clips or intracorporally performed ligations, respectively. From April, 2004, to April, 2005, 10 consecutive patients (group 2) underwent above procedure using the Endo-Ligasure TM vessel sealing system. Indications for surgery were confirmed non-functioning kidneys secondary to benign unilateral renal disease and no prior surgery.
The age and underlying disease distribution and the affected side were not significantly different between these groups.
Results: The operating time was significantly lower in the Endo-Ligasure TM group (group1: median 167 vs. group 2: 108 minutes, $P < 0.05$). A bleeding of the renal artery occurred due to dislocation of a suture ligation, which was treated laparoscopically with an intracorporal suture ligation. Blood loss was negligible in all patients. All procedures were completed laparoscopically and recovery was uneventful.
Conclusions: Endo-Ligasure TM is a beneficial tool in laparoscopic transabdominal nephrectomy. It is safe, effective, and reduces operating time compared to clip application and intracorporal suturing.
Key words: laparoscopy - nephrectomy - Ligasure TM - transabdominal approach - children

P043

LAPAROSCOPIC EXCISION OF PROSTATIC UTRICLE IN BOYS, H. Okuyama PhD, A. Kubota PhD, H. Kawahara PhD, Y. Shimizu PhD, T. Watanabe MD, H. Yamanaka MD, G. Tani MD, Department of Pediatric Surgery, Osaka Medical Center for Maternal and Child Health

Introduction: The prostatic utricle, originating from Mullerian duct remnants in boys, is an enlarged diverticulum in the posterior urethra. Because prostatic utricles have been reported to cause recurrent urinary tract infection, stones, voiding troubles, recurrent epididymitis, and neoplastic degeneration, surgical excision is necessary for symptomatic utricles. Surgical access to the prostatic utricle is difficult because of its location, deep in the pelvis. The authors report an experience of laparoscopic excision of prostatic utricles in boys.
Materials and Methods: Two boys aged 1 and 3 years presented with recurrent urinary tract infection. Both of them had mixed gonadal dysgenesis. Cystourethrography revealed prostatic utricles (3 and 5 cm in length) located just behind the posterior urethra. Under general anesthesia, laparoscopy was conducted via a 5-mm port inserted through an infra-umbilical incision. Additional three 5-mm working ports were inserted at the right and left lower abdomen. The peritoneal reflection adjacent to the bladder was incised with electrocautery. The prostatic utricle was found to be located in the retrovesical space easily with the guidance of cystoscopic transilumination. The prostatic utricles were grasped and carefully dissected from the surrounding tissue. Finally they were completely mobilized and divided at its confluence with the urethra using endoscopic loops. The specimens were removed through the umbilical port.
Results: Mean operative time was 2 hours. Both of them recovered uneventfully with no complications. Feeding started on postoperative day 1. The patients were discharged on postoperative day 7 and 8 days after the postoperative urethrography confirmed the intact posterior urethra.
Conclusions: Laparoscopic excision under cystoscopic guidance is a minimal invasive procedure, which can offer a good surgical view and an easy dissection in a deep and narrow pelvic cavity.

P044

A COMPARISON OF ENDOSCOPIC SUBURETERIC DEXTRANOMER VS.DEXTRANOMER SEPHADEX COPOLYMER INJECTION TO TREAT VUR IN CHILDREN:PRELIMINARY REPORT, ILHAMI SURER MD, CUNEYT ATABEK MD, HALUK OZTURK MD, GULHANE MILITARY MEDICAL ACADEMY, DEPARTMENT OF PEDIATRIC SURGERY

Aim: The treatment of VUR using endoscopic injection with biocompatible and biodegradable microparticles(Dextranomer/HA copolymer-DefluxÒ)has given good success rates .We conducted a study to compare the efficacy of an

recently marketing positive charged bulking agent (Dextranomer/HA sephadex- UrodexÒ) for the endoscopic treatment of various reflux grades as an early report.
Materials and methods: From December 2004 to October 2005 , 36 children (70 ureters) were treated for reflux endoscopically; 37 ureters with grade II-III reflux received a single subreteric injection with Deflux and 33 with Urodex; the mean(range) age was 32 (9- 126) and 30(7-120) months, respectively. The procedure was performed on an out-patient basis. The follow-up assessment consisted of a voiding cysto-urethrogram at 3 months after the injection.
Results: At the 3-month follow-up 29 of 37 refluxing ureters (78%) were cured using Deflux, whereas Urodex cured the reflux in 29 of 33 (88%) ureters. There were no complications during or after surgery in either group.
Conclusion: After single endoscopic injection with Urodex was more effective than Deflux in short term period. This finding may be attributed to the positive charged particles in Urodex. But long term results and more large series are necessary to conclude overall success.

P045

LAPAROSCOPIC RESECTION OF GIANT PARAOVARIAN CYST, Amulya K Saxena MD, Thomas Petnehazy MD, Johannes Schalamon MD, Michael E Hollwarth MD, Department of Pediatric Surgery, Medical University of Graz, Austria

AIM: The case of an adolescent female with an unusual giant paraovarian cyst is presented. The presenting signs were gradual abdominal distention with discomfort. Ultrasound examinations revealed a huge abdominal cyst extending from the xiphoid to the lower pelvis. Magnetic resonance imaging located the origin to the area around the left gonads.
PATIENT AND PROCEDURE: After gaining access to the abdominal cavity using the Hasson?s open access technique, the wall of the giant cyst was punctured and the clear cystic fluid evacuated. After obtaining sufficient work space in the abdominal cavity, two work trocars were placed to allow manipulation and resection.
RESULT: The giant paraaovarian cyst had a thickend wall of 4mm and a fluid content of 3.4 liters. The cyst was resected using the harmonic scalpel and the huge cyst wall extracted through the umbilical port incision. The postoperative course was uneventful and the patient was discharged without complications
CONCLUSION: Paraovarian cysts are rare and present in the 2nd and 3rd decade of life. The algorithm of clinical investigation as well as the laparoscopic approach to paraovarian cysts has been presented. Giant paraovarian cyst in the adolescent population along with successful laparoscopic management has not been reported to date.

P046

LAPAROSCOPIC AUGMENTATION OF BLADDER, Krishnasamy Selvarajan MS, Manickam Ramalingam MS, Kallappan Senthil MS, Ganapathy Pai MS, K.G.Hospital and Post Graduate Institute, Coimbatore, India

Methods: From 2002, certain cases of neurogenic bladder where augmentation was required were undertaken for laparoscopic augmentation namely laparoscopic autoaugmentation, laparoscopic ureterocystoplasty or laparoscopic Intestinocystoplasty. The age group include from 1? yrs to 14 yrs. Autoaugmentation was done by detrusor myotomy technique transperitoneally.
Results: Autoaugmentation was done in 4 cases. The children improved in bladder capacity and dry period significantly about minimum of 3 hours to 4 ? hours. In the case of ureterocystoplasty, the child improved with bladder capacity and decrease in frequency. Intestinocystoplasty done in two cases yielded significant results with stable bladder, reduced pressure and improved dry period more than 4 hours. Complications include prolonged ileus in one and sub acute intestinal obstruction in 1 case 6 months after lap-intestinocystoplasty.
Conclusion: Follow up for a significant period is necessary before we conclude lap autoaugmentation is really useful. Lap intestinocystoplasty or lap ureterocystoplasty are comparable to open procedures in terms execution of good technique and results. Time and cost have to be evaluated before accepting it as the standard.

P047

MINIMAL INVASIVE PARTIAL NEPHRECTOMY – STATE OF THE ART?, Philipp O Szavay MD, Henrike Flechsig MD, Tobias Luithle MD, Joerg Fuchs MD, Dept. of Pediatric Surgery, Children's Hospital, University of Tuebingen

Introduction: The emergence of usage of minimal invasive techniques in pediatric urology has been fast within the last 5 years. Aim of our investigation was to assess efficacy and surgical advantages as well as peri- and postoperative parameters in children undergoing laparoscopic partial nephrectomy (PN).
Patients and methods: We report on 11 children, 6 girls and 5 boys, who underwent laparoscopic PN between January 1st, 2004 and October 31st, 2005. Mean age was 0.53 years (3 months-4.16 years) at time of operation.
Results: We performed a PN of an upper pole in 6 cases and of a lower pole in 5 patients. Resected upper poles were both on the right and on the left side in 3 children. Lower poles operated on were on the left and on the right side as well. Diagnosis was dysplasia/non-function in all patients. One girl had a ureter draining into the bladder neck. In the cases of both the two lower poles indication for operation was a significant vesicoureteral reflux. An additional ureterocystoneostomy of the remaining ipsilateral ureter was carried out in 4 children. Mean operating time was 80 min (35-180 min). All children could be discharged from hospital after a mean stay of 6 days (5-12 days).
Conclusion: PN is predestined for minimal invasive surgery as a clear anatomical and vascular plane to be followed surgically divides upper and lower poles in opposite to renal malignancies. Reviewing the literature, there might be less collateral damage in the retroperitoneal approach. Urinoma is described to be a significant complication ranging from 6-20%, but didn?t occur in our patients. Operating times can well compete with open surgery.

P048

LAPAROSCOPIC SURGERY FOR LARGE HIATAL HERNIA ASSOCIATED WITH MICROGASTRIA AND A PREDUODENAL PORTAL VEIN IN AN INFANT WITH ASPLENIA, Takeo Yonekura PhD, Takuya Kosumi PhD, Mitugu Owari MD, Dep of Pediatric Surgery, Kinki University School of Medicine

Background: Association of a hiatal hernia, microgastria and a preduodenal portal vein with asplenia is rarely reported. The authors present a case of laparoscopic repair of a hiatal hernia associated with heterotaxia, microgastria and a preduodenal portal vein in an infant of asplenia.
Patient: A male infant with asplenia and a single ventricle was consulted for intermittent melena. Barium study of the intestinal tracts revealed herniation of a small tubular small stomach and the right sided colon through the large esophageal hiatus located to the right of the vertebra. Contrast CT scans demonstrated a preduodenal portal vein and left sided inferior vena cava. He underwent laparoscopic surgery for the hiatal hernia at the age of 1 month. After pneumoperitoneum, five trocars were placed in the upper abdomen. It was impossible to retract the liver from the esophageal hiatus because of a transverse liver. Laparoscopy revealed abdominal heterotaxia, a preduodenal portal vein run sagittally across the subhepatic recessus at the porta hepatis, and a large esophageal hiatus located in the cranial portion of the subhepatic recessus. After reduction of the herniated stomach, duodenum, pancreas and ascending colon, approximation of the crura were performed with nonabsorbable sutures. Nissen fundoplication, however, was abandoned because of microgastria. Boerema gastropexy was performed to prevent gastroesophageal reflux disease (GERD). He is now three years old, and needs tube feeding for anorexia because of microgastria and residual GERD.
Discussion: A laparoscopic surgery with accurate preoperative diagnostic evaluation to avoid inadvertent damage of the vein can be an advantageous alternative to laparotomy providing

an excellent operative view and easy repair of a hiatal hernia and a preduodenal portal vein in an infant of asplenia. However, problems resulting from microgastria and GERD still remain.

P049

LAPAROSCOPIC PUNCH BIOPSY FORCEPS. A NOVEL LAPAROSCOPIC INSTRUMENT FOR SOLID ORGANS OR TUMORS., Mario Riquelme MD, Arturo Aranda MD, Carlos Rodriguez MD, Hospital Christus-Muguerza, UDEM, Monterrey, Mexico — Prog. postgrado en Cir Gral. ITESM, Hospital San Jose, Monterrey, Mexico

Introduction. The most used instrument for solid organ and solid tumor biopsies is the Tru-Cut needle and the Cup biopsy forceps. The disadvantages of Tru-Cut needle insufficient tissue removal and that it can not be used through the laparoscopic trocars. The Cup biopsy forces can only acquire superficial tissue. There is no laparoscopic instrument for deep solid tissue taking.

Methods: To design a laparoscopic instrument, used through the regular laparoscopic trocars, capable of of taking deep solid tissue samples for biopsy purposes, with more quantity of tissue sampling. Also, that obtains these biopsies of 3mm of diameter and is able to measure the depth.

Results: Laparoscopic liver biopsies in newborn patients with Biliary Atresia diagnosis were performed, with all of the cases having informed sufficient pathological sample tissue result. More tissue was obtained than regular Tru-Cut biopsies, allowing multiple and special stainings. No major bleeding was reported during the procedure.

Conclusion: We believe that this prototype instrument is unique taking superficial and deep tissue biopsies, with more sampling tissue than the ones already in the operating room that can obtain only either superficial tissue biopsies or, deep biopsies with insufficient tissue.

P050

LAPAROSCOPIC MORGAGNI HERNIA REPAIR: EMPHASIS ON THE ENDOSCOPIC SUTURE PASSER, Ioana Bratu MD, Tom Hui MD, Jean-Martin Laberge MD, Winnipeg Children?s Hospital and The Montreal Children?s Hospital

Objective: Our purpose is to show that the endoscopic suture passer is a helpful adjunct in the repair of laparoscopic Morgagni hernia repair.

Methods: Seven patients aged 4 months to 8 years old (median 9 months) had an elective laparoscopic assisted Morgagni hernia repair. A 5 mm telescope was inserted through an umbilical port, and a 3 or 5 mm right and a 5 mm left subcostal working ports were placed. The hernia contents were reduced. A small 1-1.5 cm incision is made down to the fascia over the anterior margin of the hernia. Ethibond 2-0 suture bent to a ski needle is then passed from the anterior wall fascia into the peritoneal cavity, and a U stitch is then made through the diaphragm. The needle is cut. The endoscopic suture passer is guided though the anterior wall fascia and the suture is directed to the passer?s grove where it picks up the suture, and drags it out through the fascia. After adequate sutures are placed to close the defect, the sutures are pulled up and tied on the fascia.

Results: There were no intra-operative complications. Mean operative time was 110 minutes. Patient mean length of stay was 2 days. There was one umbilical trocar site infection. No recurrence of Morgagni hernia was noted at 2 year follow-up.

Conclusion: The endoscopic suture passer is a helpful adjunct in the repair of laparoscopic Morgagni hernia repair.

P051

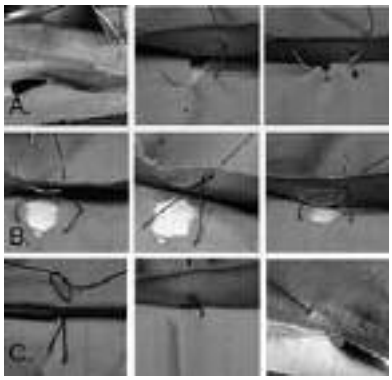
A NEW EXTRA-CORPOREAL TISSUE APPROXIMATION TECHNIQUE: THE "SEE-SAW" STITCH, Raul A Cortes MD, Hanmin Lee MD, Division of Pediatric Surgery, University of California, San Francisco

Purpose: Efficient intra-corporeal suturing requires higher-level skills and may increase operative time. We describe a novel extra-corporeal suturing technique applicable to a variety of laparoscopic settings

Methods: Once a small 1cm skin incision is made at the tissue defect level a large suture needle is placed/passed through the anterior defect (A). With further supination the needle curve directs the tip out the incision. Re-grasping of the suture from the sharp end then allows for a ?back stitch? though the inciion (B). The blunt tip is directed oppositely and with further pronation the blunt-tip is directed out the incision (C).

Results: We have utilized the ?See-Saw? stitch for tissue approximation in a variety of procedures. We have noted decreased suturing time for this technique when used to close anterior diaphragmatic defects, inguinal hernias, and Stamm Gastrostromy defects. This technique can also assit in port sites closure .

Conclusion: The ?See-Saw? extra-corporeal method is a relatively simple but effective tissue closure method that allows for increased efficiency of movement compared to sometimes awkward intra-corporeal tying.



P052

TRANSVESICAL ENDOSCOPIC PERITONEOSCOPY: A NOVEL 5 MM-PORT FOR INTRA-ABDOMINAL SCARLESS SURGERY, Estevão Lima MD, Carla Rolanda MD, José M Pêgo MD, Tiago Henriques-Coelho MD, David Silva BA, José L Carvalho MD, Jorge Correia-Pinto PhD, Life and Health Sciences Research Institute (ICVS), School of Health Sciences, University of Minho, Braga, Portugal.

Purpose. Recently various authors reported successful attempts to perform intra-abdominal surgery through a transgastric pathway. We assessed the feasibility and safety of a novel transvesical endoscopic approach to the peritoneal cavity through a 5 mm port in a porcine model.

Materials and Methods. Transvesical endoscopic peritoneoscopy was performed in eight (3 non-survival and 5 survival) anesthetized female pigs. Under cystoscopic control, a vesical hole was created on the ventral bladder wall with an open-end ureteral catheter. An overtube (lumen diameter 5.5 mm) was placed in peritoneal cavity guided by a 0.035 inch guide-wire. In all animals, we performed peritoneoscopy of entire abdomen as well as liver biopsy and falciform ligament section. A vesical catheter was placed for 4 days in all survival animals, which were sacrificed by 15th day post-operatively.

Results. After a learning curve with the first three non-survival animals, the creation of a vesical hole and placement of the overtube were performed without complication in all survival animals. In these animals, we easily introduced an EndoEye® into the peritoneal cavity that provided a superb view of all intra-abdominal viscera as well as a 9.8 Fr ureteroscope that allowed simple surgical procedures without complication. In the survival experiments all pigs recovered, whereas post-mortem examination revealed complete healing of vesical hole and no signs of infection or adhesions into the peritoneal cavity.

Conclusions. Transvesical endoscopic peritoneoscopy was technically feasible and could be safely performed in a porcine model. This work gives encouragement for additional preclinical studies of transvesical surgery with or without combination with other natural orifices approaches to design new intra-abdominal scarless procedures in what seems to be the third generation surgery.

P054

EXPERIENCE WITH PURE 2MM LAPAROSCOPIC PROCEDURES, Salmai Turial MD, Gaber Abdel-Aziz MD, Veronika Engel MD, Katrin Wolf, Felix Schier, Department of Pediatric Surgery, University Medical Centre Mainz, Germany

Introduction: Exclusive use of 2mm instrument sets is uncommon. We report our experience with these small instruments.
Material und Methods: A 2mm laparoscope was inserted at the umbilicus. Additional 2mm trocars were placed according to the type of procedure. In 31 children (aged 2 weeks to 14 years, median 3.6 years) 39 procedures were carried out, 23 for inguinal hernia, five for undescended testes, two for chronic recurrent abdominal pain, one excision of a urachal fistula , one pyloromyotomy, one extraction of a disconnected VP shunt and one adhesiolysis. Among the hernias, there were four associated hydroceles, three irreducuble hernias, one ovarian torsion and one recurrent hernia after open repair. Average skin-to-skin time was compared to a similar age and type-of- intervention group.
Results: No complications occurred. The average operative time for the 5mm group and for the 2mm group was related. There was no difference at the >0.0001 p -level. Two-mm instruments provide less indirect depth perception such as parallaxe and shadowing, thus making suturing and knot tying more difficult. The small diameter passes less light, reducing view. None of the instruments was mechanically damaged. Discussion: The time lost in suturing/knotting is compensated for when finishing the procedure. The suturing of 5mm trocar sites is unnecessary. A simple band aid suffices. Spacious abdominal cavities require 5mm laparoscopes for better distant view.
Conclusion: The routine use of pure 2mm instrument sets is feasible.

P055

RETROPERITONAL LAPAROSCOPIC RESECTION OF INTRAABDOMINAL PULMONARY SEQUESTRATION., Jason Q McKee MD, Daniel S Kim MD, Francois Luks MD, Hasbro Children's Hospital and Brown Medical School

Introduction: Intraabdominal pulmonary sequestration is a rare congenital lesion. We present two such cases diagnosed in utero and resected in infancy through retroperitoneal laparoscopy.
Case Report: Both patients were diagnosed prenatally with a left suprarenal mass. Fetal magnetic resonance imaging (MRI) confirmed the findings and suggested a diagnosis of intraabdominal pulmonary sequestration. Both pregnancies were otherwise uncomplicated, and both patients were asymptomatic at birth. Because the presence of cystic adenomatoid malformation (CCAM) elements could not be excluded, and because of the potential for malignancy that these lesions may exhibit, elective resection was performed (at 6 and 13 months, respectively). Retroperitoneal laparoscopy was performed using a 10mm and two 3-5 mm diameter ports. Following balloon dissection of the retroperitoneum and under low pressure carbon dioxide insufflation (8 torr), the lesion was dissected free from the adrenal gland, the tail of the pancreas and the diaphragmatic crus. Harmonic scalpel and 5 mm clips (for large feeding vessels) were used for vascular control. Both patients could be discharged home within 36 hours. Pathological examination revealed pulmonary sequestration with elements of CCAM and rhabdomyomatous dysplasia in both cases.
Conclusion: Widespread use of prenatal ultrasound screening and improved imaging techniques will likely increase the diagnosis of prenatally diagnosed pulmonary lesions, including intraabdominal sequestrations. The exact diagnosis can only be made by pathological examination, and more than 50% are hybrid lesions (containing CCAM, which may later be associated with malignancy). The availability of minimally invasive techniques, including retroperitoneal laparoscopy, allows safe removal of these lesions, even in the very young child.

P056

LAPAROSCOPIC GASTROSTOMY IN CHILDREN WITH CONGENITAL HEART DISEASE, Erik Norén, Anna Gunnarsdóttir MD, Katarina Hanséus PhD, Einar Arnbjörnsson PhD, Department of Pediatric Surgery and Pediatric Cardiology, University Hospital in Lund, Sweden

Objective: Malnutrition is common in children with congenital heart disease (CHD). Enteral feeding improves weight growth. Surgical gastrostomy avoids long term complications associated with nasogastric tube feeding and allows for parallel oral and enteral feeding. Laparoscopic gastrostomy (LG) eliminates the risk for gastroenteric fistula associated with percutaneous endoscopic gastrostomy (PEG).
The aim of this study is to establish the frequency and type of complications and the weight change during follow-up in children with CHD operated with LG. Also to compare the results to previously studied patients with neurological diseases with LG.
Methods and procedures: A retrospective review of medical charts of children with CHD who underwent a LG in the time period 1995-2004 at the department of pediatric surgery, Lund University Hospital, Sweden, was performed.
Results: 31 patients were identified, of which 26 were cyanotic and 14 had univentricular circulation.. Mean age was 14 months (range 3 to 77 months) and mean age-matched body weight was ?1.9 standard deviations (SD) (range -3 to 0 SD). Mean follow-up was 20 months (range 0 to 74 months). There were no gastrostomy related mortalities but four patients succumbed due to their heart disease. Two life-threatening complications, both intraabdominal leakages requiring laparotomy, occurred (7%). Four patients (13%) developed gastrocutaneous fistulas after removal of the gastrostomy button requering operative closure. 20 patients (65%) had minor stoma related complications. Mean increase in age-matched body weight during the first year was 0.4 SD (n = 26, p=0.025), the second year 0.8 SD (n=18, p=0.010), and 1.0 SD (n=8, p=0.023) after two years.
Conclusion: Weight increase was lower and frequency of major complications was higher compared to children with neurological disability. This is probably related to the graveness of the underlying disease, reflecting catabolism and reduced healing conditions. A tendency of LG being performed after cardiac surgery or before the last cardiac operation was noted, the latter at a time when the circulatory demands are very high. Although the frequency of major complications was high, it is still lower than that of PEG in children without CHD. LG in children with CHD is associated with major complications and should not be considered a harmless procedure

P057

SUCCESSFUL LAPAROSCOPIC RESECTION TO INTRAPELVIC AND INTRA-ABDOMINAL COMPONENT OF SACROCOCCYGEAL TERATOMA (TYPE-III) IN AN INFANT, Hiroo Takehara1) MD, Hiroki Ishibashi1) MD, Kouzo Yoshikawa2) MD, Mituso Shimada2) MD, Department of Pediatric Surgery and Pediatric Endosurgery, Tokushima University Hospital1), Department of Digestive and Pediatric Surgery, University of Tokushima School of Medicine2)

Purpose: To describe the first report of successful laparoscopic strategy for sacrococcygeal teratoma growing into the intrapelvic and intra-abdominal cavity.
Case report: A male infant, weighing of 3,430 gr., was born by normal delivery after full-term pregnancy without abnormality of antenatal ultrasound examination. At the age of 7 days, he was transferred to our hospital because of scrococcygeal mass measured 4.0 x5.5 cm in which some calcifications were revealed by x-ray examination. A dynamic CT-scan examination showed huge cystic tumor growing into the intrapelvic and intra-abdominal cavity, and mixed component of sacrococcygeal tumor without hypervascularity. His serum level of a-fetoprotein revealed 7,809 ng/dl. He was diagnosed with a sacrococcygeal teratom of type III according to the classification of Altman. He was treated by laparoscopic strategy for the intrapelvic and intra-abdominal tumor and a sacral incision for the exterior tumor on the 14-day of his life. Subsequently, the

tumor, weighing of 578gr. With cystic and solid component, was completely excited without any complication.
The histological examination showed a mature teratoma benign. His hospitalized course was uneventful after surgery.
Discussion: There were 3 previous reports concerning to laparoscopic ligation of the median anterior median artery of huge sacrococcygeal teratoma. This paper is the first description of successful laparoscopic excision for sacrococcygeal teratoma growing into the intrapelvic and intra-abdominal cavity.

P058

LAPAROSCOPIC PYLOROMYOTOMY FOR CHILDREN WITH CONGENITAL HYPERTROPHIC PYLORIC STENOSIS: SIMPLE TECHNIQUE ., Saeed Alhindi MD, Salmaniya Medical complex, Division of Pediatric Surgery, Kingdom Of Bahrain

Aim: Different laparoscopic method have been used to treat congenital hypertrophic pyloric stenosis in children. We describe simple laparoscopic technique .
Methods: A prospective study was conducted between January 2002 to June 2005.All children with congenital hypertrophic pyloric stenosis underwent laparoscopic pyloromyotomy .
Laparoscopic pyloromyotomy were done by 2-trocar 5mm in diameter and by using an ophthalmic knife eor seromascular incsision.. All patients had local anaesthesia at trocar sites
Results: 20 children with congenital hypertrophic pyloric stenosis underwent laparoscopic pyloromyotomy. The age of the patients range between 1 ? 8 weeks. The operative time was 20 minutes in average and hospital stay range between 1-2days .Oral feeds started 12 hour postoperative day. No blood transfusion required. Two patient had vomiting for two days postoperative.
Conclusion: Laparoscopic pyloromyotomy in children with congenital hypertrophic pyloric stenosis is an alternative technique and can be done simply by this way required

P059

LAPAROSCOPIC ASSISTED SPLENECTOMY FOR YOUNG CHILDREN WITH SICKLE CELL DISEASE: DIATHERMY TECHNIQUE, Saeed Alhindi MD, Salmaniya Medical complex, Division of Pediatric Surgery, Kingdom Of Bahrain

Aim: We describe simple laparoscopic assisted technique for young children with Sickle cell disease.
Methods: A prospective study was conducted between January 2003 to June 2005.All children with sickle cell disease underwent laparoscopic assisted splenectomy .
Laparoscopic pyloromyotomy were done by 4-trocar 5mm in diameter and by using diathermy for splenic vessels. The spleen was deliverd by small groin incsision. All patients had local anaesthesia at trocar sites
Results: 10 children with sickle cell disease underwent laparoscopic assisted splenectomy. The age of the patients range between 5-10 years. The operative time was 60 minutes in average and hospital stay range between 1-3days .Oral feeds started 24 hour postoperative day. No blood transfusion required. No intraoperative bleeding.
Conclusion: Laparoscopic assisted splenectomy in young children with sickle cell disease by using diathermy to control splenic vessels is prelimanary safe technique .

P060

LAPAROSCOPIC APPENDECTOMY IN CHILDREN WITH V-P SHUNT AND PERFORATED APPENDECITIS, Saeed Alhindi MD, Salmaniya Medical complex, Division of Pediatric Surgery, Kingdom Of Bahrain

Aim: We describe the outcome of laparoscopic appendectomy for children with V-P shunt.
Methods: A retrospective study was conducted between January 2000 to april2005.All children with V-P shunt and acute perforated appendicitis who underwent laparoscopic appendectomy included in this study .
Laparoscopic appendectomy was done by 3-trocar 5mm in diameter and by using endoloop . All patients had local anaesthesia at trocar sites
Results: 7 children with V-P shunt with acute appendicitis underwent laparoscopic appendectomy. The age of the patients range between 4-12 years. All had perforated appendicitis. The operative time was 70 minutes in average and hospital stay range between 7-12 days No patient required change of the V-P shunt p. No intraoperative bleeding or complication.
Conclusion: Laparoscopic appendectomy in children with V-P shunt and perforated appendicitis is prelimanary safe technique .

P061

DIAGNOSTIC LAPAROSCOPY IN BLUNT ABDOMINAL TRAUMA IN CHILDREN, Andriy Dvorakevych MD, Igor Golovchak MD, Marian Zakharus MD, Danylo Halytskyj Lviv national medical University Department of pediatric surgery

The purpose of the study is to assess the value of diagnostic laparoscopy (DL) perfomed in abdominal trauma in children and its impact on their tretment. Two groups of 25 and 24 consecutive patients were analyzed prospectively. All, hemodinamically stable, were admitted for blunt abdominal trauma. In on DL was performed electively. If no changes were found the patients were discharged 1-2 days after the procedure, otherwise they were treated by laparotomy if necessary the patients of a second, control group (CG) were observed and operated if indications appeared. In these two groups the risk of therapeutic delay, its coincidence with complications, omitting L, morbidity and mortality rate were assessed. In the LR group a risk of therapeutic delay was diminished in 17 cases, (it occurred in 1 patient in CG). The unnecessary hospital observation time was shortened (0 in the LR group, up to 5,66 day in CG). Median hospitalization time was also shortened up to 8,66 days (18,47 day LR group, 27,13 day in CG). The morbidity was smaller in the LR group (2 to 5 cases respectively). The number of cases where L was omitted was 8 in the LR group (32 %) while an unnecessary operation was performed in 4 patients in CG (16,6 %). Mortality, equal in both groups (2 and 2) was caused by non-abdominal factors (multiorgan trauma). Although presented material of patients is rather small, it seems that early diagnostic laparoscopy in abdominal trauma patients, despite initial cost increase, can reduce therapeutic delay, morbidity rate, observation time and at last can reduce the total treatment costs.

P062

LAPAROSCOPIC REPAIR OF DIFFICULT GROIN HERNIAS IN CHILDREN, Mohamed M Elbarbary MD, Khaled H Bahaaeldin MD, Tamer Yassin MD, Department of pediatric surgery, Cairo University Specialized Pediatirc Hospital

Background: Repair of Groin hernias are the most commonly performed surgical procedures done by pediatric surgeons. Inguinal approach to these hernias has been both effective and cosmetically accepted. However there still remain some cases, where inguinal approach is less than ideal. Laparoscopic approach may a more effective analogue to the conventional approach in these cases. These include, bilateral hernias, very large oblique hernias, hernia of canal of Nuck, recurrent inguinal hernias and femoral hernias. Repair of recurrent cases can prove difficult and carries the risk of injury to important inguinal structures. Moreover identification of femoral hernial defects can be difficult through the inguinal approach. Laparoscopic repair for groin hernias in children was first reported in 1995.
Purpose: The purpose of this study is to report the experience of Cairo University Specialized Pediatric Hospital (CUSPH) in the use of laparoscopy in management of difficult groin hernias of in children.
Patients and Methods: In a three years period 26 patients, presenting with potentially difficult groin hernias to our department were included in this study. There were 25 male patients and 1 female. Age group ranged from 7 months to 9 years. Hernias were recurrent oblique inguinal hernias in 22 patients, femoral hernias in 3 (one was misdiagnosed as recurrent inguinal hernia) and a clinical hernia in a case of crossed testicular ectopia. Laparoscopic repair of these hernias was done using 3 ports. In inguinal hernias the internal anatomy was clearly identified. The internal ring was narrowed using interrupted non absorbable sutures after incising the peritoneum it. In femoral defects the same technique was used but the defect

was reinforced with a polypropylene mesh.
Results: All procedures were successfully repaired laparoscopically, and there were no operative complications. The mean operative time was 46 minutes (range 35 to 65 min). An added benefit was the closure a contralateral patent processus vaginalis in three of our patients. No recurrence was noticed in a median follow-up period of 9 months.
Conclusion: Although still considered by some authors as an overly aggressive use of laparoscopy, it provides an easier, safer alternative to conventional surgery in the management of selected cases of difficult groin hernias in children.

P063

MINIMAL ACCESS TREATMENT OF PAEDIATRIC FACIAL HEMANGIOMAS IN LUCERNE, Andreas M Fette MD, Children`s Hospital, Paediatric Surgery, Lucerne/Switzerland

Introduction Complex hemangiomas show a predilection towards the head and neck region, an area where undue scarring is inacceptable for preservation of a sound body image. Thus, optimal treatment is still debatable why we want to present results out of our minimal access treatment (MAT) with intralesional and transcutaneous laser bare fiber application.
Methods and Procedures The center of the hemangioma was punctured by a Teflon canula, before a bare fiber was inserted and the Nd:YAG laser (wavelength 1064 nm) beam (5 ? 8 W, 0.5 s) applied. Additionally, percutaneously a continous laser beam in ice-cube-cooling technique (30 ? 35 W) was applied every 4 to 6 weeks in our day surgery clinic under general anesthesia. We treated 10 children with a mean age of 6 (range 3 to 29) months in a todate average of 6 sessions. All hemangiomas were classified according to their key characteristics, with an average diameter of 3 (range 1.5 to 5) cm measured. All presenting with rapid deteriorating growth.
Results Involution was induced in all treated hemangiomas. One patient completed treatment with a good result, one was lost for follow-up. Two patients are in a session break, voting for an excellent after achieving a good cosmetic result. The remaining six show constant success during treatment, finally voting for a good to excellent one. We have to consider slight scarring in one patient due to an infection of the puncture access of the teflon canula and two reflectoric respiratory depressions due to ice cooling in very immature infants without further sequealae.
Conclusion The majority of our cases is pending, though our experience is limited. But due to our promising results we recommend to consider this MAT in complex facial hemangioma, starting as early as possible as they usually show detoriating growth in one of the most important body areas.

P064

THE USE OF HYPNOSIS AS A COADJUVANT THERAPY IN THE TREATMENT OF COLONIC INFLAMATORY DISEASES., Jorge Mogilner MD, Roni Shaoul MD, Joseph Meyerson MSc, Igor Sukhotnik MD, Bnai Zion Medical Center.Rappaport Medical School.Technion.Israel &Hypnoclinic

Background: Hypnosis is an important adjuvant therapy in the treatment of certain gastrointestinal disorders. In the present study, we evaluated the efficacy of hypnosis in patient suffering from intestinal inflammatory diseases.
Patients and methods: 3 adults and 7 kids and adolescents who were treated conventionally by gastroenterology department for severe chronic colitis, abdominal pain, diarrhea, intra abdominal abscess, and GI Bleeding with no good response were referred to Hypnosis treatment.
Patients underwent between 5 to 12 hypnotic sessions. They receive suggestions for stress release, ego strengthening, immune system reinforcement, pain control, improve deposition rate.
Results: All the patients release the symptom/s for what they have been treated. Inflammation indexes dropped down. Follow up from 3 months to a year revealed that patients are symptom free, gaining weight, have a good quality of life.
Conclusion: We found Hypnotherapy very useful as a co adjuvant therapy in cases of severe colitis, influencing directly to reduce stress, improve ego strengthening and releasing GI symptoms.

P065

IMPACT OF ADDING AN MIS PEDIATRIC SURGEON TO AN ESTABLISHED PRACTICE, Evan P Nadler MD, Howard B Ginsburg MD, New York University School of Medicine

Background: The impact of adding a dedicated pediatric minimally invasive surgeon (MIS) to an established pediatric surgery practice has not been well established, especially since most pediatric surgeons perform some minimal access surgery. This analysis is a report of the impact of adding a dedicated MIS pediatric surgeon immediately after completing fellowship training to a long-standing pediatric surgery practice.
Methods: We retrospectively reviewed our database for all procedures performed from August 1, 2003 to July 31, 2005. The operations were divided into two groups based on the arrival of a dedicated MIS pediatric surgeon on August 1, 2004. Case distribution and operative approach were abstracted. The number and type of procedures were compared between the two eras using Chi-square analysis.
Results: A total of 797 operations were performed prior to and 922 after the arrival of an MIS surgeon. The overall percentage of MIS procedures performed was significantly greater after the arrival of an MIS surgeon (48/797 v. 121/922, p< 0.001). The greatest differences were in the number of laparoscopic appendectomies and laparoscopic Nissen fundoplications (Table). There was a trend toward an increase in the number of thoracoscopic procedures (Table).
Conclusions: The addition of a dedicated MIS pediatric surgeon, even one who has just completed training, significantly impacts the number and percentage of MIS procedures that are performed. Higher end procedures such as fundoplications and thoracoscopic procedures are impacted. The addition of a dedicated MIS pediatric surgeon to an established pediatric surgery practice provides greater availability of advanced MIS techniques and should be included in any pediatric surgical practice.

Procedure	No MIS (n=797)	MIS (n=922)	P-value
Lap Appy	6 (0.7%)	55 (6.0%)	0.001
Lap Nissen	0 (0%)	21 (2.3%)	0.001
Thoracosocpy	1 (0.1%)	6 (0.6%)	0.1

P066

EXPERIENCE IN SURGERY LAPAROSCOPIC IN PEDIATRIC HOSPITAL., Julian Alberto Saldaña Cortes MS, Francisco Raul Larios Arceo. PhD, Antonio H. Chavez Aguilar. MD, IMSS, Pediatric Hospital UMAE Num. 175

Our objective is to present our experience in surgery pediatric laparoscopic in the West Mexico (City Guadalajara).
We have 2 years (since January 2004) doing surgery laparoscopic (85 patients) 40 male and 45 female, whit spectrum big of patology betwen they colecistectomy (26), splenectomy (3), apendicectomy (6), funduplasty Nissen (22), diagnostic laparoscopic (10), reseccion cysts ovary in tannagers (4), to dissolve of bridas(1), Heller (1), Seromiotomia antropilorica (2), furthermore torachoscopic in pleural decorticacion (7), empiemas (2), pulmonary malformations (1),
The age average of our patients is of 8 years, (1-16) the time average of surgery is variable, depending on the type of patology, in funduplasty Nissen, in Toracoscopic, in splenectomy 2 hrs. (1-3 hrs), colecistectomy, reseccion cyst ovary in tannegers, diagnostic laparoscopic is 1 hr.
We not have all Material and instrument necesary for to good laparoscopic pediatric, and in any Time made the work whit instrumental for adult. between this we have lens of 10 mm of 30 degrees and last arrive the lens of 5 mm of 30 degrees too, trocars used are of 10 mm and of 5 mm, the single stapler we counted on one of 10 mm, in occacions when we made esplenectomy we have the facility to count on ligasurg.
The pressures CO2 used in average for patients 12-15 years, pressure of 12 mmHg, and 8-11 years we used 10 mmHg, for 4-7 years pressure of 8 mmHg and patients of 1-3 years pressure of 7 mmHg. We are making protocol with gasometric and capnografic control in relation to the use of CO2 to manage to find the suitable pressure but according to the age and weight

of the patient, which even not this finished.
we have turned surgery in 2 patients, one by gastric perforation in an a refunduplicatura and other by bled of the artery splenic in one splenectomy where we could not obtain ligasurg and single was available scalpel armonic, both patients end its open surgical problem by means of surgery and its recovery was adapted and actually free of complications.
The experience is to better whit Time, our curves learning its better. furthermore having ten resident in pediatric surgery that also is enabling throughout their residence. we with time hoped to improve our surgical tecnic and time, furthermore of which we hoped to count on suitable material of surgery laparoscopic pediatric, to improve the attention to our patients of west Mexico.

P067

TREATMENT OF THE INFECTED INTRA-PERITONEAL CYSTS IN INFANTS AND CHILDREN, Makoto Yagi PhD, Hiroshi Yoshida PhD, Takashi Nogami PhD, Hideki Yoshida MD, Harumasa Ohyanagi, Division of Pediatric Surgery, Department of Surgery, Kinki University Medical School

[Purpose] There are many kinds of intra-abdominal cystic lesions in infants and children. Although many of them are found by abdominal distention, abdominal pain, palpated abdominal mass, some shows the symptoms of acute abdomen. For the patients who show the infection of cystic lesions, we at first administer the antibiotics and then treat by laparoscopic surgery.
[Methods] Medical records of children, who showed the infection of cysts followed by laparoscopic surgery, were reviewed from 1997 to 2005. Clinical data were obtained during routine follow-up. Secondary cysts formed by perforative appendicitis were excluded form this study.
[Results] Six patients were treated during this period according to our protocol. The patients?f age ranged from 7 days after birth to 13 years. All showed the symptoms of acute abdomen. White blood cell count ranged from 14,000 to 35,000/mm3 and serum CRP level was from 9.2 to 25.4 mg/dl. CT examination and echogram revealed cystic mass in the abdomen. After the intravenous administration of antibiotics, all the patients showed the resolution within 3 to 5 days, and then laparoscopic operations were performed. Postoperative diagnoses were mesenteric cyst in two, and omental cysts, pancreatic lymphangioma, retroperitoneal lymphangioma, intestinal duplication in one each. Postoperative courses were uneventful without one case that showed adhesion intestinal obstruction.
[Conclusions] Our protocol can avoid the complications of emergency operations. Laparoscopic surgery after the resolution of the infection was feasible, safe, and showed excellent cosmetics.

P068

ROBOT-ASSISTED LADD'S PROCEDURE, Russell K Woo MD, Anthony D Caffarelli MD, Sanjeev Dutta MD, Division of Pediatric Surgery, Lucille Packard Children's Hospital, Stanford University Medical Center

Background: Congenital disorders of intestinal rotation and fixation typically present during infancy but may be discovered later in life. Laparoscopy has been used to determine the extent of malrotation and to carry out definitive surgical management. Standard laparoscopic optics and instrumentation can make identification and correction of the abnormality challenging. Computer-assisted robotic surgical systems have been used increasingly in pediatric minimally invasive surgery as they provide increased dexterity and stereoscopic visualization. We present a case of robot-assisted Ladd?s procedure in an adolescent with chronic, intermittent duodenal obstruction.
Case Report: A 15 year-old male adolescent underwent robot-assisted modified Ladd?s procedure using the da Vinci® Surgical System (Intuitive Surgical, Sunnyvale, CA). The patient was positioned supine with moderate reverse Trendelenburg and elevated several inches off of the operating table on blankets and foam to allow for downward pitch of the instrument back-ends. Five ports were utilized; one 12mm endoscopic port at the umbilicus, one 5mm robotic instrument port to the right of the umbilicus, one 5mm robotic instrument port in the LUQ, one 3mm left subcostal port for liver retraction, and one LLQ 5 mm assistant port. Recently available 5mm robotic bowel graspers were used. The procedure was completed robotically with division of congenital adhesions using hook electrocautery and scissors. Total robotic operating time was 2 hours and 30 minutes. No intraoperative complications or technical problems were encountered. Extensive atruamatic manipulation of the bowel was possible using the robotic bowel graspers. The patient recovered well and was discharged home in good condition on postoperative day #3.
Conclusions: Robot-assisted management of rotational abnormalities of the intestine is feasible. Stereoscopic visualization and wristed instrumentation aid in the identification of the abnormality and lysis of adhesions. Bowel handling and traction were enabled by specially designed robotic bowel graspers.

P069

LAPAROSCOPIC ADRENALECTOMY 3 CASES IN NEUROBLASTOMA STAGE IV, JAE HEE CHUNG PhD, YOUNG TACK SONG PhD, St. Mary's Hospital, The Catholic University of Korea

Background: Laparoscopic adrenalectomy is reported for the first time in 1992 (Gagner. M.) and it has prevailed for adult, while it is not well proven if laparoscopic adrenalectomy is safe and effective for children. The authors performed 3 laparoscopic adrenalectomies to the babies in nueroblastoma stage IV remained after the chemotherapy.
Case 1) A 4 year old girl was diagnosed as left adrenal neuroblastoma stage IV (5.8x4.9cm) with BM and multiple liver metastases and took chemotherapy by CoG N7 protocol 5 times, which resulted in declined BM and multiple liver metastases and decreased left adrenal mass size(3.3x2.5CM). She took an laparoscopic adrenalectomy 6 months after diagnosis. It took 150 minutes and there wasn¡¯t a complication. Possible metastasis which was white on the liver was found, but necrosis in neuroblastoma(3.5x3CM) was more than 50% with no cut margin involvement. Tissue of liver was proven to be neuroblastoma t. The baby started to be fed 3 days after operation and discharged on 7 days after operation. She is in the process of 6th anti-cancer treatment.
Case 2) A 6 year old boy was diagnosed as left adrenal neuroblastoma stage IV (6x5.2CM) with right neck metastasis, and took chemotherapy by CoG N7 protocol 5 times, which resulted in vanished mass in the neck and decreased left adrenal mass(2.6x2CM), and took an operation by laparoscopy 6 months later. It took 150 minutes. The pathology was 3x2CM ganlioneurofibroma without neuroblastoma cell. The baby started to be fed 3 days after operation and discharged from hospital 7 days after operation. He has gotten 6th anti-cancer treatment up to now.
Case 3) A 3 year old boy was diagnosed as left adrenal neuroblastoma stage IV with BM and dura metastasis, took CDEC protocol chemotherapy 4 times, which resulted in vanished BM metastasis, light dura metastasis, and 1.5cm adrenal mass, and took laparoscopic adrenalectomy after 5 months. It took 120 minutes and there hasn¡¯t been any complication. 1.5x1cm ganglioneuroblastoma was tested for tissue pathology and there wasn¡¯t cut margin involvement. The baby started to be fed 2 days after operation and discharged from hospital 5 days after operation. It has been 2 1/2 years and he is all right.
Conclusion: Laparoscopic adrenalectomy is safe and available for children in neuroblastoma stage IV remained after the chemotherapy. But long term observation and comparison to open surgery are left as future works.

P070

HEPATIC BIOPSY IN PEDIATRIC PATIENTS, UTILITY OF ELECTRO-SURGERY VERSUS ULTRA-FREQUENCY., Edgar Morales-Juvera PhD, Ricardo Villalpando Canchola PhD, Gabriel Reyes G. PhD, Jose A Ramirez PhD, Hospital of Pediatrics, National Medical Center, XXI, IMSS

INTRODUCTION: The hepatic biopsy it is a fundamental procedure, and the gold standard for many of the hepatic diseases like viral, autoimmune, drug-related, tumors, cystic fibrosis, chollestasis, metabolic inborn errors and many others. The quality of the specimen it is necessary to achieve a precise

diagnosis, and therefore a good treatment and a better prognosis.
We evaluate the quality of the biopsies with electrosurgery and the harmonic scalpel, done on patients with the usual indication for the biopsy.
MATERIAL & METHODS: All procedures were done by laparoscopic approach, in 11 patients diagnosed with a non conclusive hepatopathy. On each patient 2 biopsies were taken, one with a bipolar scissors and one with the harmonic scalpel. The statistical analysis was done with central measures, and the difference with the of Mann Whitney test.
RESULTS: 22 biopsies were obtained, the median age was 9 years, the median volume of the biopsies taken with harmonic scalpel was 1.4 cms3 , and 1.17 cms3 for the bipolar scissors, the median volume of the burn lesion was 1 mm3 for electrosurgery, and 0.25 mm3 for the harmonic scalpel. With no statistical significance.
DISCUSSION: Liver diseases could present at any of the pediatric ages, and the biopsy still the gold standard. On many papers the advantages of the harmonic scalpel have been described in various organs, when compared with electrosurgery (mono and bipolar), advantage that was not demonstrated in our study, maybe because of the potency of our study.
CONCLUSION: The hepatic biopsies taken with ultra/frequency and bipolar scissor are equally useful for the diagnosis, and equally safe in our study.

P071

LAPAROSCOPIC ASSISTED LIVER BIOPSY WITH A HAEMOSTATIC PLUG, A Numanoglu MD, J Karpelowsky MD, N M Bax MD, H Rode MD, Departments of Paediatric Surgery Red Cross Children?s Hospital, University of Cape Town, Cape Town, South Africa and Wilhelmina Children?s Hospital, University Medical Center, Utrecht, Holland

Aim: Percutaneous and open liver biopsies are routine procedures to diagnose liver pathology. The procedure however can carry significant morbidity and even mortality, especially in the event of an uncorrectable coagulopathy or highly vascular tumour. We present a technique which can be utilized in such circumstances. It utilizes laparoscopy for identification of the lesion to be biopsied, enables placement of a gelatin haemostatic plug into the core biopsy tract and confirms haemostasis following percutaneous plugging of the biopsy site.
Methods The true cut biopsy is performed under laparoscopic guidance through a 14G introducer. A piece of absorbable gelatin sponge hemostatic material (Gelfoam® Spongistan®) is cut equal to the length of previously measured biopsy tract. This is then segmented into 1 cm fragments (the length of a 2 ml syringe hub) and rolled into cylinders enabling them to be loaded into the hub of a 2 ml syringe after it is filled with 0.4 ml of normal saline. Hemostatic plaq is propelled with injection of saline from the syringe.
Results The technique was successfully used on seven patients, six with hepatic coagulopathy and one with a highly vascular liver tumour. There were no complications, during the intra or post operative period. Patients experienced minimal post operative discomfort and were back to baseline activity on the first post operative day. None of the patients required blood transfusion postoperatively.
Conclusion We believe that this technique of biopsy site plugging offers a safe alternative for liver biopsy in those patients with an uncorrectable coagulopathy or those requiring a biopsy prior to correction of the bleeding disorder.

P072

CHALLENGE OF A LAPAROSCOPIC SURGEON: MASSIVE SPLENOMEGALY IN LAPAROSCOPIC SPLENECTOMY, Rahsan Vargun MD, Gulnur Gollu MD, Berktug Bahadir MD, Aydin Yagmurlu MD, Department of Pediatric Surgery, Ankara University School of Medicine

BACKGROUND: Laparoscopic splenectomy as an alternative to open splenectomy for splenomegaly is regarded as controversial. It was aimed to appraise the impact of spleen size on operative and clinical outcome in a series of 17 consecutive laparoscopic splenectomies.
METHODS: A retrospective chart review of patients, which underwent laparoscopic splenectomy for a range of hematological disorders, was performed. Spleen size, primary indication for splenectomy, estimated blood loss, operative time, operative and postoperative complications, conversion to open procedure and duration of hospital stay were recorded. A weight of over 1000 g was accepted a massive splenomegaly (>1000 g).
RESULTS: Massive splenomegaly was recorded in 11 of 17 (64.7%) cases. In this group, splenic weight ranged from 1125 to 3500 g (median, 1800 g). Children with splenic weight >1000 g had a significantly longer median operating time (148 vs. 98 minutes, $P < 0.01$), conversion rate (3/11 vs. 0/6, $P < 0.01$), and median postoperative stay (5 vs. 3 days, $P < 0.01$). There were no postoperative complications. The indication for splenectomy was hypersplenism for the three children who were converted to open procedure. The diagnosis of these three children were; Hgb S-D, Wilson cirrhosis and myelomoncytic leukemia, and all of them had the history of recurrent abdominal pain. They were all found to have massive fibrous adhesions of the spleen to the lateral and posterior abdominal wall.
CONCLUSIONS: Laparoscopic splenectomy is feasible in patients withmassive splenomegaly. On the other hand, it is associated with greater morbidity, and the advantages of minimal access surgery in this subgroup of patients are not so clear.

P073

ENDOSCOPIC TRANSMURAL DRAINAGE FOR THE PANCREATIC PSEUDOCYST IN A CHILD, Ryuji Yoshida MD, Toshio Fujiwara MD, Takashi Tsuchioka MD, Saori Iwatani MD, Masakatsu Sunagawa MD, Department of Surgery 1, Dokkyo University School of Medicine

(Introduction) We describe an experience of endoscopic cystogastrostomy for a pediatric patient with a pancreatic pseudocyst.
(Case report) the pancreatic pseudocyst was revealed by CT scan two weeks later in a 6 years old girl who have had a blunt abdominal trauma. The cyst was observed for 6 weeks after the trauma and developed to the size of 10.4 X 8.5 X 7 cm and its wall was thick. At this time endoscopic cystogastrostomy was performed. Two 7Fr. 4cm double pigtail catheters were placed into the cyst endoscopically. Amylase level was extremely high in the absorbed fluid from the cyst. Serum amylase level was returned to normal immediately soon after the procedure. But suddenly 3 weeks after the procedure, serum amylase and total bilirubin levels were elevated. CT scan showed these pigtail catheters inside the stomach moved to the duodenum, which seemed to be pressing on the papilla of Vater. These catheters were removed out immediately endoscopically. Serum amylase and total bilirubin levels resulted normal soon after removal of catheters. The patient discharged 7 days after removal of catheters. No evidence of recurrence were detected in CT scans after the procedure.
(Conclusion) Endoscopic transmural drainage is easy and useful for management of pancreatic pseudocysts. However, a catheter of the optimal length should be selected to prevent the incident in this report.

P074

THORACOSCOPIC LIGATION OF THORACIC DUCT IN AN INFANT WITH SPONTANEOUS CHYLOTHORAX, Brian P Smith MD, Olga Achildi BS, Harsh Grewal MD, Temple University Children's Medical Center and Temple University School of Medicine

Objective: Spontaneous chylothorax is an unusual cause of respiratory failure or pleural effusion in a child. We present the management of this condition using a thoracoscopic technique.
Case Report: A 2-year old female presented with an acute onset of grunting and difficulty breathing.There was no significant past medical history. The mother denied recent trauma, sick contacts, or family history of cardiopulmonary disease. She was afebrile, with a pulse of 135 and blood pressure of 91/54mm Hg and respiratory rate was 20/minute. She had an elevated white blood cell count at 20,200 cells/mm3. She had

markedly decreased breath sounds over the right thorax, and a mildly distended abdomen. A chest x-ray revealed complete white-out of the right hemithorax. The child was then intubated and brought to CT scan, where she was found to have a large right-sided pleural effusion. A chest tube evacuated 310 cc of a milky-appearing fluid. Laboratory analysis of the fluid demonstrated a total cell count of 2,863 cells/μL, and triglycerides of 7.9 mmol/L. Lymphocytes represented 100% of the leukocytes, and the fluid was shown to be sterile. CT scan of the chest was negative for masses that might disrupt or obstruct the thoracic duct. The SVC and aorta appeared normal. She continued to have moderate chest tube output on a fat-restricted diet supplemented with medium chain triglycerides. On hospital day #8, the child was made NPO, and maintained on TPN and an octreotide infusion. However the chyle leak persisted and a decision was made to operatively locate and ligate the leaking thoracic duct. Pre-operatively, she was fed whole dairy cream to aid in thoracic duct identification. Using right-sided video assisted thoracoscopic surgery, a leak in the thoracic duct was clearly identified and over sewn using two 2-0 sutures in figure-of-eight fashion. In addition we performed mechanical pleurodesis and supplemented the closure with fibrin glue (Tisseel). A 16-French chest tube was placed, and the child recovered without complication, nor evidence of persistent thoracic duct leak and was asymptomatic with a normal chest radiograph at one month follow-up.

Conclusion: Thoracoscopy gives excellent visualization of the thoracic duct leak especially after the dairy cream meal given pre-operatively. Suture ligature of the thoracic duct with pleurodesis was successful in managing the chylothorax in this infant.

P075

VATS PLEURAL BIOPSY FOR BLASTOMYCOSIS EMPYEMA, loana Bratu MD, B. Louise Giles MD, Mohammed Barzanji MD, Deloar Hossain MD, Winnipeg Children?s Hospital, University of Manitoba, Canada

Objective: Blastomycosis is one of the endemic mycoses in the river valley areas of central North America. Initial presentation as empyema without lung parenchymal involvement in pediatric population has not been previously reported.

Methods: We report 2 cases of pleural Blastomyces dermatitidis infection diagnosed by VATS pleural biopsy.

Results: Two boys, one 10 years and the other 12 years old, each presented with a history of nonresolving pleural effusion. CT chest showed a massive, one-sided, non-locculated pleural effusion with a completely collapsed lung, and pleural nodularities. Diagnostic thoracentesis did not reveal Blastomycosis in pleural fluid. Diagnosis and treatment were attained by VATS pleural biopsy and decortication of thick pleural peel that showed numerous granulomas and Blastomyces. The patients were further treated with Itraconazole for 6 months, and have done well on follow-up 1 year later.

Conclusions: Pulmonary blastomycosis is unusual and sporadic. If present, it usually presents as a pulmonary infiltrate. Isolated pleural effusion without lung parenchyma involvement is now described in our two patients. Since serology, thoracentesis and skin testing is not helpful clinically in patients suspected to have Blastomycosis, we recommend that prompt VATS pleural biopsy at the time of anticipated chest tube drainage be performed for proper diagnosis.

P076

OPERATIVE INOVATIONS FOR NUSS PROCEDURE, Dragan Kravarusic MD, Bryan Dicken MD, David Sigalet PhD, Alberta Children?s Hospital, Calgary, Alberta, Canada

Purpose: During the Nuss procedure for pectus excavatum, blunt retrosternal dissection is a potentially hazardous maneuver. We describe a technique of relaxing incisions along the cartilaginous ribs which facilitates retrosternal dissection and reduces chest wall tension.

Methods: Twenty consecutive patients with pectus excavatum underwent a Nuss procedure with sternocostal incisions. Ten patients having previously undergone a standard Nuss procedure were selected from a pectus database, and matched to the study group. During bar insertion, multiple relaxing incisions were done using diathermy at the sternocostal junctions involving 3 to 4 ribs at the level maximum depression, under thoroscopic control. Operative, perioperative and patient-factors were compared between groups.

Results: There was no significant difference in mean pectus severity index (Classic Nuss = 4.66 vs. Modified Nuss = 4.34; p = 0.69). Relaxing incisions improved visibility and facilitated retrosternal dissection, bar insertion and stability. Sternocostal incisions were unilateral in 17 patients and bilateral in 4 patients. There was no significant difference in the epidural requirements (p = 0.43) or days to reach functional independence (p = 0.32).

Conclusion: The addition of sternocostal relaxing incisions to the standard Nuss procedure facilitates retrosternal dissection. Bar placement and stability appear to be enhanced.

P077

AUDIT COMPARING THE USE OF UROKINASE VS. NO UROKINASE FOR PATIENTS POST-OP THORACOSCOPIC DEBRIDEMENT FOR EMPYEMA., Robin G Garrett-Cox MD, Gordon A Mackinlay MD, Fraser D Munro MD, Royal Hospital for Sick Children, Edinburgh

Objectives: To compare patients requiring thoracoscopic surgery (T) for empyema treated post-operatively with or without urokinase. Assessment of length of time to chest tube removal, time till apyrexial, length of hospital stay post-op and long-term outcome were made.

Methods: Patients were assigned to each group according to the consultant on-call at the time of referral to the Paediatric Surgical Department. One Consultant gave intrapleural urokinase post thoracoscopy, One consultant did not use urokinase post-operatively. Both groups had chest drains left at the time of thoracoscopy. Chest drains were removed after they had stopped draining.

Results: 11 patients received urokinase post thoracoscopy (TU thoracoscopic surgery and urokinase). 10 patients had no post-operative fibrinolytic therapy (T thoracoscopy only).

Comparison of the groups showed no difference in duration of symtpoms, grade of empyema or respiratory compromise at time of thoracoscopic procedure. Length of time pyrexial post-operatively showed no difference (Apyrexial in 1-2days TU 9/11; T 8/10). Time for chest drain to stop draining was significantly shorter for Thoracoscopy only (T) group (TU Median 5 Range (3-13); T 2 (1-6) $p<0.01$ t-test). There was also appeared to be a shorter hospital stay post operatively for the thoracoscopy only group (TU 9 (5-16); T 4 (3-39)) however the data is skewed by one patient who had a stay of 39 days. This patient had pre-existing axonal neuropathy and had worsening muscle weakness at the time of presentation with bilateral empyemas. He required training in BiPAP during recovery in hospital. All 9 other patients in Thoracoscopy only group (T) were discharged in 2-8days median 4 days.

Only one patient in either group required a further procedure. This was a contralateral pleural aspiration in a patient in TU group who developed a contralateral pleural effusion and pericardial effusion. At follow up 16/17 patients had some evidence of pleural thickening or minor CXR changes at 1-3 months post op (One patient (TU) no CXR at this time). CXR changes had cleared in all patients by 4-9 months post op.

Conclusions: Patients treated with Thoracoscopy alone had a shorter time of chest tube drainage and shorter hospital stay with no difference in clinical outcome. This small study suggests that there is no advantage in routine use of urokinase post operatively after thoracoscopic treatment of childhood empyema.

P078

VIDEO-ASSISTED THORACOSCOPIC SURGERY FOR NEONATES WITH CONGENITAL HEART DISEASE, yury a kozlov MD, vladimir a novogilov MD, pavel s yurkov,natalya g aleinikova, Department of Newborn Surgery, Pediatric Hospital of Irkutsk, Russia

Introduction. Thoracoscopy have reduced pulmonary dysfunction, operative trauma, hospital stay and cost, but applications in neonates with congenital heart defects (CHD) have been limited. The endoscopic instrumentation and surgical strategies

were adapted to accommodate the small size of neonatal pleural space. We reviewed all patients in our centre who had thoracoscopy for congenital heart disease during the newborn period.
Methods and Procedures. A total 18 neonates who underwent VATS for CHD between January 2002 and October 2005 are included in this report. There were 13 boys and 5 girls ages 2 day to 28 days. The weight ranged between 800 ? 3200g. All patients underwent preoperative echocardiography confirming the diagnosis of CHD. The technique of VATS was performed in premature infants (14 patients). The spectrum of pathology included patent ductus arteriosus (16), tracheomalacia (1), atrioventricular septal defect (1). Three small 5-mm thoracostomy (a camera port and 2 instrumental ports) were made in the posterolateral (16) or anterolateral (2) chest wall in the left hemithorax. The operation proceeded in a similar fashion to that in the open technique: clipping of PDA, aortopericardiosternopexy, pulmonary artery banding with using Gore-Tex material.
Results. All 18 operation were accomplished succesfully without difficulty. There were no mortality. We had no conversion, hemorrhage and residual ductal patency according to echocardiography. The operating time was 20 min ? 1 h 40 min. Patients were discharged between day 7 and 108.
Conclusion. Video-assisted endoscopic techniques have reduced operative trauma in thoracic surgery, but applications in neonates with CHD have been limited. We report the development of VATS for neonates with cardiovascular disease. Our cardiologists support the VATS approach, perceiving that the patients have less chest wall pain after the operation. We conclude that the procedures describe here is safe, can be practiced with little morbidity.

P079

THORACOSCOPIC LUNG LOBECTOMY: TOWARDS A STANDARD PROCEDURE, Pablo Laje MD, Alan W Flake MD, The Children's Hospital of Philadelphia

Aim: The aim of this study is to evaluate the technical details and immediate postoperative aspects of all thoracoscopic lung lobectomies performed at The Children?s Hospital of Philadelphia (CHOP) between March and October 2005.
Background: Minimally invasive surgery (MIS) is currently applied to most of the surgical procedures in pediatric patients. However, because of being technically challenging, the MIS resection of lung lobes containing congenital lesions is not widely expanded, so far. Even though the advantages of MIS in terms of post-operative pain, recovery, and hospital stay are well known, most patients with congenital lung lesions are still treated by the classical open approach. Thanks to the Fetal Treatment Center at CHOP, many patients who are prenatally diagnosed with congenital lung lesions are referred to us for post-natal management. Thus, a highly unusual number of lobectomies are performed every year at our center. Starting March/2005, five patients underwent thoracoscopic lobar resections due to congenital lung lesions.
Methods: The medical records of patients with congenital (i.e., prenatally diagnosed) lung lesions who underwent primary thoracoscopic lung lobectomies were retrospectively reviewed.
Results: A total of five patients (2 boys, 3 girls) were included in the study. Mean age at surgery was 59,2 days (range, 3 to 142), mean operative time was 192 minutes (range, 130 to 231), and mean hospital stay was 7 days (range, 2 to 15). Only one case was converted to open due to anatomical anomalies. There were no intra-operative complications. Post-operatory narcotics were required for 2,4 days (mean).
Conclusion: Based on these results, we think that thoracoscopy is a safe and effective approach for the treatment of congenital lung lesions, and will progressively become the standard of care as long as more surgeons become familiar with the technique.

P080

IS RESPIRATORY PHYSIOTHERAPY AN ADJUVANT TO NUSS PROCEDURE IN THE TREATMENT OF CHILDREN WITH SEVERE PECTUS EXCAVATUM?, A Messineo MD, A Martin MD, E Ciardini MD, M Ghionzoli MD, R Lo Piccolo MD, "A. Meyer" Children's Hospital, Florence, Italy

Pectus excavatum (PE) is a chest abnormality, already present at birth, which become more severe during childhood and adolescence. In the etiology of PE an important role is attributed to incomplete development of the sternal portion of diaphragmatic muscles; for such muscular hypotrophy the sternum fails to move out during inspiration, determining or increasing a PE. In a period of five years, between Sept 2000 and Sept 2005, the charts of 15 male adolescents, affected by severe defect, treated with Nuss procedure at our institution were reviewed. Based on preoperative physiotherapy (PP), 7 patients in whom PP was done, were included in group A and 8 (no PP) in group B. Data were compared on age at operation (AO), severity of defect (SD) measured by Haller index (HI), defect symmetry (DS) judged as symmetric (SY) or asymmetric (AS). From the charts operative time (OT), time of postoperative epidural analgesia required (TE), postoperative starting of ambulation (PA), length of postoperative stay in hospital (PS), time to return to normal activity (NA) were obtained. Group A and B were similar for AO (14,26 ± 2,54 vs 14,68 ± 1,16), SD (5,27 ± 0,97 vs 5,49±0,90), DS (3/4 vs 3/5)

Groups	A	B	p < 0,05
OT (min)	107 ± 22	108 ± 13	Not significant
TE (days)	2,71 ± 0,48	2,63 ± 0,51	Not significant
PA (days)	5 ± 1,29	4,5 ± 0,92	Not significant
PS (days)	7,14 ± 0,69	10,38 ± 4,74	0.049
NA (days)	11,71 ± 0,75	17,63 ± 8,12	0.039

From our small number it is possible to demonstrate a difference between the two groups (PP and no PP) in hospital stay and return to normal activity.

P081

EMPYEMA THORACIS IN CHILDREN: IS THORACOSCOPIC DECORTICATION SAFE AND EFFECTIVE?, Sai Prasad TR MD, Rambha Rai MD, Chan Hon Chui MD, Yee Low MD, Te-Lu Yap MD, Anette Sundfor Jacobsen MD, Department of Paediatric Surgery, KK Women's and Children's Hospital, Singapore

Objectives: We report our experience with thoracoscopic decortication (TD) for empyema thoracis (ET) in children and analyze the safety and efficacy of the procedure.
Methods: A retrospective analysis of consecutive cases of ET that underwent TD from January 2000 to December 2004 was done. The duration of symptoms, radiographic studies, operative findings were noted and the outcome and the complications were analyzed.
Results: 39 consecutive patients (23 males and 16 females) aged 3 months to 8 years (mean, 3.7±2) underwent TD for ET. The mean duration of symptoms at presentation was 8.3±4.9 days and the period of in-patient medical management was 4.8±3 days before surgery. All patients underwent TD through 2 or 3 ports. 4 (10.2%) patients needed minithoracotomy for completion of decortication and none needed pulmonary resection although lung abscess cavities were deroofed. There were no operative complications. The operative duration was 45-177 minutes (105.1±31.9). The chest tubes were removed after a mean period of 4.8±1.9 days from surgery. The mean duration to reach afebrile status was 6.5±3.3 days and the postoperative hospital stay was for 5-17 days (9.1±2.7). 3 (7.7%) patients had persistent loculated collection and underlying pulmonary consolidation, postoperatively. One patient responded to antibiotics, chest tube insertion and chest physiotherapy. 2 (5.1%) patients needed redo decortication (TD in one and open thoracotomy in the other).
Conclusions: TD for ET in children is safe and ensures a steady recovery.

Poster Abstracts

P082

LYMPHOCELE MANAGEMENT AFTER DIAPHRAGMATIC HERNIA CLOSURE, Amulya K Saxena MD, Emir Haxihja MD, Barbara Kleinlein MD, Michael E Höllwarth, Department of Pediatric Surgery, Medical University of Graz, Austria

AIM OF THE STUDY: Goretex is a common prosthetic material employed for diaphragmatic hernia closure and has been associated with low morbidity. We report the case of a 2150g premature infant with left sided diaphragmatic hernia managed with Goretex. In due postoperative course, the patient presented with left thoracic lymphoceles that increased in volume, leading to respiratory distress. Ultrasound examinations revealed multiple cysts in the left thoracic cavity which necessitated thorocoscopic intervention.

PATIENT AND PROCEDURE: Under general anesthesia, entry was gained to the left thorax through the mid-axillary line using a 2.7mm optic trocar and 4mmHg C02. Clear wall cysts (lymphoceles) of varied sizes were visualized in the entire left thoracic cavity. All cysts were opened to evacuate the trapped lymphatic fluid, with a cautious approach to the pre-cardiac cysts.

RESULTS: The entire procedure was completed without complications and a total of 45 ml clear cystic content was evacuated from the left thorax. A thorax drain was left in place. The infant could be extubated after 2 days and further maintained on CPAP.

CONCLUSION: Lymphoceles have been reported in adult patients undergoing heparinization as well as pediatric cardiac patients after modified Blalock Taussig Goretex shunts. The presence of an inferior vena cava thrombosis in our case prompted heparinization, which may have contributed to the formation of lymphoceles in the left thorax. The successful thoracoscopic evaluation and management of lymphoceles in a premature infant with congenital diaphragmatic hernia, resulting from heparinization in the presence of Goretex patch, is the first case reported to date.

P083

THORACOSCOPIC SOLID TUMOR RESECTION AND SIMULTANEOUS MINIMALLY INVASIVE PECTUS REPAIR: EXPERIENCE WITH AN EXCEPTIONAL CASE., Akihiro Shimotakahara PhD, Martin L Metzelder MD, Lorenz Grigull MD, Claus Petersen PhD, Benno M Ure PhD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany, Department of Pediatric Hematooncology, Hannover Medical School, Hannover, Germany

Purpose: Minimally invasive pectus repair is the favorized technique for funnel chest correction in children. We report on an exceptional case presenting for pectus repair with an incidentally diagnosed concommitant solid thoracic tumor.

Patient: A 14 year old girl presented with pectus excavatum for minimally invasive repair. Preoperative computertomographic imaging showed a solid mass in the anterior mediastinum, which was suspected to be benign (size 96x46x29 mm). Serum levels of the tumor markers S-AFP, S-HCG + ßHCG, S-NEC were within normal ranges. In accordance with the Department of Pediatric Oncology the patient was scheduled for thoracoscopic removal of the mass and simultaneous pectus repair.

Course and Results: A complete thoracoscopic resection of the tumor, which was suspected to be a benign teratoma, was performed without intraoperative events. Thoracoscopically assisted pectus repair using the Nuss technique was performed during the same session. The postoperative course was uneventful and the patient was discharged on day 4. However, histopathological examination revealed a Hodgkin`s Lymphoma (Stage I A), and the patient was treated according to the GPOH-HD 95 - protocol. The further course was uneventful and imaging at follow-up after 3 and 6 months for re-staging showed no evidence of recurrent lymphogranulomatosis. The cosmetic result was excellent.

Conclusions: To our knowledge, experience with pectus repair and concommitant thoracic tumors is lacking. The present case is exceptional. However, although our strategy was based on the wrong assumption of a benign tumor, the postoperative course was uneventful. We recommend biopsy of intrathoracic tumors before minimally invasive pectus repair.

P084

THORACOSCOPIC MANAGEMENT OF INTRA-THORACIC CYSTS, Kadaba R Srimurthy, Ramesh S, Narendra Babu, Indira Gandhi Institute of Child Health & Bangalore Hospital, Bangalore, India

Introduction: Recent advances in optics, video systems and endoscopic operating instruments have led to increasing application of thoracoscopic surgery, as it has become easier to perform and more accurate. We intended to evaluate the utility of thoracoscopy in the management of intrathoracic cysts

Material and methods: This is a retrospective review of 13 patients with intra-thoracic cysts, who underwent thoracoscopy for diagnostic / therapeutic purposes. Three cases of hydatid cyst were pre-treated with albendazole and thoracoscopic suction and removal of the cysts. One child each had foregut duplication cyst, bronchogenic cyst and a near total excision was feasible in both. Of the 8 lung cysts, excision was feasible only in 4. In the other 4, thoracoscopic excision was not feasible due to anatomic factors or dense adhesions. However, even in these cases, an accurate location was made possible by the thoracoscopy and the operative plan could be appropriately adjusted.

Results: The mean operation time was 120 minutes and the mean hospitalization was 6 days. There were no complications related to the procedure and the post-operative recovery and morbidity greatly reduced.

Conclusion: Thoracoscopy, has a significant role in the management of intra-thoracic cysts. It offers high diagnostic accuracy and low morbidity and is eminently feasible and safe in children

P085

BALOON AIDED SINGLE PORT THORACOSCOPIC DEBRITMENT IN CHILDREN WITH LATE STAGE EMPYEMA THORACIC, Burak Tander MD, Ender Ariturk MD, Riza Rizalar MD, Suat H Ayyildiz MD, Ferit Bernay MD, Ondokuz Mayis University, Department of Pediatric Surgery

PURPOSE: We evaluated the results of the baloon aided single port thoracoscopic debritment of late stage empyema thoracic in children.

PATIENTS AND METHOD: Between April 2002 and May 2005, 6 patients (3 Female, 3 Male) were admitted with a late stage parapneumonic empyema which was resistant to medical therapy. Patient records including age, gender, duration of prehospital illness, physical findings, performed surgical interventions and the morbidity were reviewed retrospectively. The diagnosis of pleural effusion was confirmed by thoracentesis before thoracoscopy. Initially, the patients were treated conservatively. General anesthesia was used in all cases. Before the enterance of thoracoscope, a baloon which was connected to a 12 F feeding tube was inserted into the thoracic cavity and inflated with air. By this manoeuvre, a cavity was formed just under the enterance point and thus the possibility of injuring the lung parenchyma with the thoracoscope was avoided. So that an initial working space as well as a space for enhancement of view was created safely, Thereafter, a routine debridment and chest irrigation was performed by thoracoscopy. Only one port was inserted and the telescope was used as a dissecting tool. At the end of the procedure, a thorax tube was inserted through the port site and left for the drainage.

RESULTS: The main symptoms of the patients were dyspnea, cough and fever. The time of onset was between 7 days and 20 days. The duration of applied medical therapy was 1 to 18 days. According to the radiological investigations, pleural effusion and septations was detected with the thickness of 2 to 4.7 cm. In three patients, the empyema was located at the right hemithorax and in three patients, it was at the left hemithorax. Chest drainage was ended within 8 to 28 days (mean 10 days) after the surgical approach. The length of hospital stay was 8 to 28 days (mean 10 days).

CONCLUSION: Thoracoscopic debritment in patients with late stage emphyema thoracic may be very beneficial and this treatment method may prevent any further thoracotomy. A baloon inflated in the thoracic cavity may achieve a wider field of vision for thoracoscopic surgery and single port thoracoscopy is sufficient for the dissection.

P086

THORACOSCOPIC THORACIC DUCT LIGATION IN A PREMATURE INFANT WITH CONGENITAL CHYLOTHORAX, Gakuto Tani, Hiroomi Okuyama, Akio Kubota, Hisayoshi Kawahara, Yoshiyuki Shimizu, Takashi Watanabe, Hiroaki Yamanaka, Osaka Medical Center and Research Institute for Maternal and Child Health

Introduction: We present a premature infant with congenital chylothorax in whom thoracic duct was successfully ligated using thoracoscope.

Methods: The patient had a prenatal diagnosis of bilateral pleural effusion at 28 weeks gestation. Because the pleural effusion and subcutaneous edema increased, the patient was delivered by cesarian section at 30 weeks gestation. Her birth weight was 1.5 kg. She was intubated immediately after birth because of severe respiratory distress. The pleural effusion was drained with bilateral chest tubes. Her respiratory status was stabilized by aggressive respiratory management including artificial surfactant, high frequency oscillatory ventilation, and inhaled NO therapy. While the left pleural effusion disappeared by fasting with TPN in a week, the right chyle leak continued. On the 39th day of life, a lymphoscintigraphy showed the leakage of lymph from the thoracic duct into the right lower thoracic cavity. Non-operative treatment using fibrin glue in the right pleural space had failed. Because of failed conservative managements and poor weight gain, she underwent thoracoscopic thoracic duct ligation on the 68th day of life. Her body weight was 1.7 kg at the time of operation. Under general anesthesia the patient was positioned prone with the right side slightly elevated. Three thoracic ports (two 3-mm and one 5-mm) were inserted and the pleural space was insufflated at a pressure of 4 mmHg. The posterior mediastinal pleura was incised with electric cautery. The thoracic ducts dyed with Sudan Black were identified between the aorta and the azygos vein, and were closed with 4 titanium clips.

Results: There was no surgical morbidity. The right pleural effusion disappeared in a few days after the operation. Oral feeding resumed on the postoperative day 9. A good weight gain was obtained after surgery. There was no sign of recurrent pleural effusion.

Conclusion: Thoracoscopic ligation of the thoracic duct provides a safe and effective treatment of congenital chylothorax even in a small infant.

P087

THORACOSCOPIC MANAGEMENT OF VASCULAR RINGS, RICARDO VILLALPANDO-CANCHOLA PhD, EDGAR MORALES-JUVERA PhD, MANUEL VERA PhD, JOAQUIN ZEPEDA PhD, OCTAVIO HERRERA PhD, GABRIEL REYES PhD, HOSPITAL DE PEDIATRIA CMN S. XXI, MEXICO

Objective: Share our initial experience in the management of vascular rings, at the hospital of pediatrics, national medical center, Mexico.

Material and methods: CASE 1; 4 yo patient, with chronic cough, clinical gastroesophagel reflux, esophagogram with extrinsic compression in the lateral and posterior esophagus in the proximal portion, endoscopy shows an extrinsic pulsate anterior lesion of the trachea, and a posterior lesion y the esophagus. The access was made through the left chest, with selective intubation, a complete vascular ring was found, anterior aortic arch with left carotid emerging from it, arterious ligament and posterior dominant aortic arch. The resection of the aortic ligament and the union of both aortic arches.

Case 2; 2 yo, baby girl, with Down syndrome clinical gastro esophageal reflux, with EGS, showing a postero-lateral compression, no problem found in the trachea by endoscopy, and posterior compression in the esophagus. Left thoracoscopy, with dissection of right aberrant subclavia

Good postoperative outcome in both cases

Conclusion: The surgical correction of a complete and incomplete vascular ring, by thoracoscpy it is possible with no increased risk, having all the benefits from the minimal invasive surgery.

P088

THE VALUE OF PH AND IMPEDANCE TESTING IN EVALUATION OF AEROPHAGIA, Rita M Steffen MD,Lori Mahajan MD, Cleveland Clinic Foundation

Prolonged pH monitoring for 24 hours has been the gold standard for measuring gastroesophageal reflux. In recent years the technology has enabled the use of impedance monitoring which can measure the nonacid reflux material in the esophagus. The technique also measures gas, liquid, mixed gas-liquid material moving in the esophagus.

Patients who are compulsively air swallowing are sometimes unaware that this is occuring. This aerophagia can cause reflux of acidic material that can become pathologic in frequency, and cause mucosal damage to the esophagus. This method not only shows that there is aerophagia induced acid and nonacid reflux, it only occured during waking hours, not during sleep.

With the patient recorded diary informantion it is possible to see the number of swallows, the number of eructations and the pathologic amount of reflux associated with the aerophagia induced eructation. Symptoms correlate on the tracing with the events recorded for acid and nonacid reflux.

Evaluation of aerophagia induced pathological reflux is a novel and as yet unreported use of esophageal pH and impedance monitoring. The frequency and severity of the problem can be quantified by pH impedance testing.

This information is helpful in making the diagnosis and in making the treatment plan for the patient. There have been few tools available to physicians for evaluating functional gastrointestinal problems, and this application may represent an advance in being able to document the physiologic activity causing the problem Progress can be monitored by a follow-up pH impedance study as well.

P089

LAPAROSCOPIC PUNCH BIOPSY FORCEPS. A NOVEL LAPAROSCOPIC INSTRUMENT FOR SOLID ORGANS OR TUMORS., Mario Riquelme MD, Arturo Aranda MD,Carlos Rodriguez MD, Hospital Christus-Muguerza, UDEM, Monterrey, Mexico—Prog. postgrado en Cir Gral. ITESM-Hospital San Jose, Monterrey, Mexico

Introduction. The disadvantages of Tru-Cut needle is insufficient tissue removal and that it can not be used through the laparoscopic trocars. The Cup biopsy forces can only acquire superficial tissue. There is no laparoscopic instrument for deep solid tissue taking.

Methods: To design a laparoscopic instrument, used through the regular laparoscopic trocars, capable of taking deep solid tissue samples for biopsy purposes, with more quantity of tissue sampling. Also, that obtains these biopsies of 3mm of diameter and is able to measure the depth.

Results: Laparoscopic liver biopsies in newborn patients with Biliary Atresia diagnosis were performed. More tissue was obtained than regular Tru-Cut biopsies, allowing multiple and special stainings. No major bleeding was reported during the procedure.

Conclusion: We believe that this prototype instrument is unique taking superficial and deep tissue biopsies, with more sampling tissue than the ones already in the operating room that can obtain only either superficial tissue biopsies or, deep biopsies with insufficient tissue.

Poster Tour Abstracts

Poster Tour 001

PRIOR OPERATION AND FEASIBILITY OF LAPAROSCOPIC SURGERY IN CHILDREN: A PROSPECTIVE STUDY, Martin L Metzelder MD, Natalie K Jesch MD, Anasthasia Dick, Joachim F Kuebler MD, Claus Petersen PhD, Benno M Ure PhD, Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

Background: The aim of the study was to determine the impact of former operation on the feasibility of laparoscopic surgery in children.

Methods: A prospective study was performed on 471 consecutive children undergoing laparoscopic surgery during a period of 5 years. Laparoscopic procedures were classified ?easy?, ?difficult?, and ?demanding?. Endpoints of the study were conversion rate, intraoperative events and duration of operation.

Results: Eighty-nine (19%) patients had previous abdominal surgery. The conversion rate was 18% in patients with prior versus 9% without prior operation (16/89 vs 35/382, $p<0.05$). This was due to a significantly higher conversion rate in ?easy? procedures with versus without prior operation, but not in ?difficult? and ?demanding? procedures. Prior operation had no significant impact on the duration of operation. Intraoperative events, mainly due to lack of overview and adhesions, occurred in 8% of patients with prior procedures versus 2% without (7/89 vs 9/382, $p<0.05$). Relevant complications were not significantly more frequent after prior operation. The incidence of conversions decreased with time after previous surgery. It was 64% below 1 year, 25% from 1-5 years, and 5% more than 5 years after surgery (7/11 vs 6/24 vs 3/54, $p<0.001$).

Conclusions: Prior operation has a limited impact on the feasibility of laparoscopic surgery in children. The conversion rate and the incidence of intraoperative events, mainly due to lack of overview and adhesions, is increased, but not the incidence of relevant complications. The feasibility improves considerably with time after prior surgery. We consider laparoscopy as a first choice technique after prior operation.

Keywords: Laparoscopy - Children - Feasibility - Prior operation - Technical complexity - Conversion rate

Poster Tour 002

ENDOSCOPIC SURGERY IN NEONATE AND INFANT: 261 CASE EXPERIENCE, long Li MD, xue-lai Liu MD, jun Zhang MD, capital institute of pediatrics

Huang Liu-Ming, Liu Gang, Wang Shu-Qin, Dept. of Pediatric Surgery, the First Affiliated Hospital of Peking University, Beijing, China

Background: Endoscopic surgery in neonates and infants has evolved more slowly than older children, because of small working space and difficulties in surgical technique. This study is to investigate the safety and effectiveness of the endoscopic surgery for neonate and infant.

Material and Methods: Between January 2001 to May 2005, 1061 pediatric endoscopic operations were performed in our departments, 58 in neonate and 203 in infants under the age of 6 months. The endoscopic surgery included 44 pyloromyotomy ,21 anorectoplasty for anorectal malformation,7 jejunal atresia,35 herniorrophy, 5 duodenal web,2 esophageal atresia ;6 diaphragmatic hernia, 2 Intestinal malrotation, 31 Portoenterostomy for BA. 88 cholangiography, 6 hepaticoenterostomy for choledochal cyst; 5 pull through for long segment of agangionosis , 3 pyeloplasty, 2 fundoplication, 1 diaphragm plication , 1 intussusception reduction, 1 intestinal obstruction, 1 muscular release for torticollis

Results: All the patients were treated endoscopically, 3 of them (with type III biliary atresia) were converted to open procedure because of hilar oozing. Blood transfusion was unnecessary in all cases. The complications included 1 inadequate myotomy and 1 mucosal breach for pyloromyotomy, 1 port site herniation for portoenterostomy and 1 wound infection and 2 urine leak from the fistula for anorectoplasty.

Conclusion: our experience has consolidated our belief that endoscopic surgery in neonate and infant is safe and can achieve the same surgical goal as open surgery. Not only are the procedures more desirable aesthetically they are less painful. There is less abdominal distension after surgery, a quicker recovery and long term result seems identical to open surgery if not better.

Poster Tour 003

25 YEARS EXPERIENCE OF THORACOSCOPIC SURGERY (VATS) IN CHILDHOOD IN OUR DEPARTEMENT OF PEDIATRIC SURGERY, Jürgen Waldschmidt MD, Henning Giest MD, Lutz Meyer-Junghänel MD, Pediatric surgery, St. Joseph Children´s hospital, Berlin, Germany

Introduction: VATS is a very tissue preserving and gentle operative therapy for an extensive number of various intrathoracic diseases. It can be performed at any age and offers special advantages in newborns and children with reduced lung capacity, especially in patients with cystic fibrosis and so on.

Material: We started VATS in 1981, October 12 in an eleven years old girl with postraumatic hematothorax due to rupture of the lung, using the STORZ equipement. We achieved hemostasis with laser and sealed the parenchyme defect with fibrin glue. In the following years we operated for the first time in our department metastases (in 1985), mediastinal tumours (1986), chylothorax (1987), cysts of the lung and mediastinum (1988), bronchiectasis (1989), cyst of esophagus (1993), pericardectomy (1993), decortication (1994), lymphangioma (1994), CCAM (1996), aortoventropexie in tracheal stenosis (1998), Diaphragmatic hernia (1999), NUSS Op. (1999), thymectomy in cases of myasthenia gravis (2000) and pulmonary sequestration (2000). Special problems we had to solve were in cases of surgery during ECMO (1998) and in DIC of Kasabach-Merritt syndrome.

Results: No death was observed in more than 150 thoracoscopic operative interventions and in the postoperative period. 4 children died from late complications: one case after ECMO, 2 cases due to metastasis and one case resulted from HIV. Conversions were necessary in four cases. The recurrences we have experienced in 2 cases with cysts and 2 cases of bronchial fistulas.

Conclusion: On the basis of obtained data we may recommend the VATS as first line intervention in every case of surgical disease of lungs, mediastinum, pleura, pericardium and diaphragm.

Poster Tour 004

THORACOSCOPIC REPAIR FOR DIAPHRAGMATIC DEFECTS: INSTITUTIONAL EXPERIENCE., Kadaba Srimurthy, Ramesh , Narendra Babu, Indira Gandhi Institute of Child Health and Bangalore Hospital,

INTRODUCTION: Thoracoscopic repair is currently well established in the surgical management of diaphragmatic defects as it is much less traumatic than the conventional method. We report our experience of thirty three patients of thoracoscopic repair of diaphragmatic defects.

Material and methods. A retrospective review was undertaken of patients with CDH and Eventration of diaphragm who underwent thoracoscopic surgery in our institution over a period of months.

Thirty three patients ranging from 2 months to 15 years were treated by this method. Eight were cases of left sided Bochdalek hernia; twenty two were of eventration of diaphragm, one case each of hiatal hernia, traumatic diaphragmatic hernia, and Morgagni?s hernia.

The operation was performed under artificial pneumothorax using carbon dioxide gas at 5mmHg and with single lung ventilation. Three trocars were used to repair the defects thoracoscopically with intra/ extracorporeal sutures. Adequacy of the repair was confirmed by release of pneumothorax.

Results:The technique was successfully performed in all cases, and the patients' postoperative courses were uneventful. Three patients diagnosed as eventration of diaphragm preoperatively turned out to be CDH with a sac.

Over a mean follow-up period of 4.5 years, no recurrence of diaphragmatic eventration/ hernia was seen.

Conclusions:The thoracoscopic approach is safe and suitable for children with all forms of diaphragmatic defects. We believe this technique causes minimal morbidity, improved visualization of the affected hemithorax, promotes early recovery and significantly reduces the hospital stay.

Poster Tour Abstracts

Poster Tour 005

ENDOSURGICAL TREATMENT OF DUODENAL OBSTRUCTION IN INFANTS, Francisco Jose Berchi Garcia MD, Indalecio Cano MD, Araceli Garcia MD, HUMI 12 de Octubre, University Complutense, Pediatric Surgery Dept.

In children we quite frecuently find pathology such as duodenal obstruction. Duodenal obstruction in children can incur a number of congenital pathologies that can be asymptomatic at any age, although most cases are diagnosed in the neonatal period. It can be congenital or acquired. Complete obstructions, specially the atresia type require urgent intervention. The application of minimally invasive surgery for the correction of duodenal malformations has increased significantly in the last few years. The ability to perform delicate dissection and intracorporeal anastomosis has broadened the scope of entities that can be approached.

We operated 12 children with duodenal obstruction. There were five males and seven females. Seven patients presenting with duodenal atresia were operated in the first days of life. Two patients had duodenal obstruction due to superior mesenteric artery syndrome (MAS). Laparoscopic surgery was realized in cases of duodenal duplication(1), duodenal diverticulum (1) and duodenal polyp(1). All procedures were completed by laparoscopy. Operating time depended
on the procedure. Duodenostomies were realized in less than 120 minutes. Visualization was excellent and there were no complications.

In this small series laparoscopic management of duodenal pathologies has proven to be safe and effective and represents an alternative to conventional duodenal surgery.

Poster Tour 006

ROBOTIC RESECTION OF MEDIASTINAL MASSES IN CHILDREN, John J Meehan MD, John Lawrence MD, Laura Phearman RN, Paula Francis RN, Anthony Sandler MD, Children's Hospital of Iowa, University of Iowa Hospitals and Clinics

This abstract is submitted with IRB approval

Purpose: Robotic Surgery is a new technology in minimally invasive surgery. The articulating instruments can be particularly helpful in the difficult areas such as the deep pelvis or rigid thoracic cavity. We present our initial experience using robotic technology to resect mediastinal masses in children.

Materials and Methods: We performed 5 resections of mediastinal masses over a 2 year period. Patients age ranged from 2 to 17 years. Three robotic trocars were used in each case including two 5 mm robotic instrument ports and one camera port (either 5 or 12mm depending on the size of the patient). A 4th port, a 5 mm accesory port, was required in 3 of the cases. Each patient had a different mass including ganglioneuroma, ganglioneuroblastoma, germ cell tumor, teratoma, and a large inflammatory mass. Mass size ranged from 3 x 4 cm to 12 x 14 cm.

Results: All procedures were completed robotically. No conversions to thoracoscopic or open techniques were required. The articulating instruments were particularly helpful in navigating circumferentially around the rigid mass. Specimens were retrieved by enlarging a trocar site just wide enough to remove the mass in an endobag. Operating time ranged from 46 minutes (4 cm ganglioneuroma) to 165 minutes (12 cm germ cell tumor). Average post operative days to discharge was 1.4 days. No complications occurred.

Conclusion: Mediastinal masses can be safely removed with robotic technology. The articulating instruments are particularly useful while circumnavigating around a solid mass in the rigid chest cavity. A wide variety of pathology can be safely and effectively removed intrathoracically with this technology.

Poster Tour 007

HOSPITAL TYPE AND INNOVATION IN PEDIATRIC SURGERY: THE CASE OF LAPAROSCOPIC APPENDECTOMY, Deena J Chisolm PhD, Cedrick V Pritchett BS, Benedict C Nwomeh MD, Columbus Children's Hospital, Columbus, OH

Objective: Increased application of minimally invasive surgical techniques may have implications for healthcare outcomes in children. There is little data on whether patient or hospital characteristics affect the utilization of emerging medical technology in children, especially with respect to laparoscopic procedures. This study evaluates the patterns of laparoscopic appendectomy (LA) using a national database, focusing on variations in care between children?s and general hospitals.

Methods: We collected data from the year 2000 Healthcare Costs and Utilization Project Kid?s Inpatient Database admissions for patients between 5 and 20 years of age with either ICD-9-CM procedure code 47.09 (laparoscopic appendectomy) or 47.01 (other appendectomy). Demographic variables included patient age, gender, race, primary payor, and zip code median. Hospital characteristics included teaching status, rural/urban status, pediatric appendectomy volume, and pediatric categorization. Chi-squared statistics were used for univariate laparoscopy rate comparison. A logistic regression model assessed multivariate relationships.

Results: The study sample included 50,825 pediatric appendectomy patients (26% LA) representing 97,205 cases in the nation. Children?s hospitals were significantly more likely to provide LA (36%) than children?s units or general hospitals (28% and 25%, respectively). LA rates were also significantly positively associated with higher patient age, female gender, non-perforated appendicitis, private insurance, and White patient race. The Children?s hospital effect (adjusted OR 2.11, 95% CI1.88-2.38) and all other relationships remained significant in the multivariate model.

Conclusion: While the majority of pediatric appendectomies occur in general hospitals, utilization of LA is significantly higher in pediatric hospitals. The difference in utilization rates of LA becomes more pronounced in favor of older children, females, and non-perforated appendicitis. This study also highlights socio-economic disparity in the use of LA in children, suggesting that disadvantaged children are at risk of being denied access to emerging medical technology.

Poster Tour 008

HASSONS VERSUS VERES IN PEDIATRIC LAPAROSCOPIC TROCAR RELATED INJURIES, Cornelia van Tuil MD, Amulya K. Saxena MD, Pediatric Surgical University Medical Centre, Münster Germany and *Department of Pediatric Surgery, Medical University of Graz, Austria

OBJECTIVE OF THE STUDY: Trocars, are the most common devices causing injuries in laparoscopic procedures. The most fatal injuries described in the literature are the vascular ones. All fatality reports involve procedures in which either shielded (retractable shield that covers the trocar blade before and after insertion) or optic (allows laparoscopists to view the cutting tip as it penetrates the tissues) trocars were used.

METHODS AND PROCEDURES: From the 4 basic techniques used to create pneumoperitoneum: blind Veress needle (VN), blind direct trocar insertion, optical trocar insertion, and open laparoscopy we prefer the last one. Hasson technique we prefer includes skin incision at the left side of the navel, taking account to the fetal anatomical structures. The Hasson-cannula is fixed to the skin with a ?purse-string suture? to avoid loss of gas and dislocation of the trocar.

RESULTS: In our series of 565 patients we had no injuries and there was only a minimal need for analgesia. Only small wounds with nearly unapparent scars resulted. No port site incisional hernias were encountered using this technique.

CONCLUSION: Most of the pediatric surgical patients have a thin or very thin skin that increases the risk of visceral injuries caused by blind abdominal access. Therefore semi-open laparoscopy using the Hasson cannula should be the preferred method for peritoneal access. Injury mechanisms of the various trocars, embryological anatomical considerations as well as the comparison to the reported literature series are presented.

Poster Tour Abstracts

Poster Tour 009

LAPAROSCOCPIC URETERO-URETEROSTOMY IN INFANTS AND CHILDREN, Lisandro A Piaggio MD, Ricardo Gonzalez MD, A I duPont Hospital for Children, Wilmington, Delaware, USA

INTRODUCTION: We report 4 ureteroureterostomies done laparoscopically in small children with good results.

METHODS AND PROCEDURES: Analysis of 3 patients who underwent laparoscopic ureteroureterostomy (1 bilateral). Technique: One end-to-end and three end-to-side anastomoses were performed transperitoneally through 3 or 4 trocars (bilateral), with running and interrupted sutures of 6-0 PDS. Ports were: camera 5 mm, working 3 mm. Double ?J? stents were placed cystoscopically or with cystoscopic assistance and laparoscopic maneuvers in a combined ?antegrade-retrograde? technique and left indwelling for 2 to 4 weeks. An intraabdominal drain was left for 48 hs. Results were assessed by ultrasonography and retrograde pyelography.

RESULTS: Indications for the procedure were duplication with upper pole ureteral ectopia and a functioning renal moiety in a three months old patient, bilateral duplication with persistent bilateral lower pole vesicoureteral reflux in a three years old patient; and inadvertent intraoperative transection of the lower pole ureter during a laparoscopic upper pole heminephroureterectomy in a 25 months old patient with duplication and nonfunctioning upper pole moiety. Blood loss was negligible. Postoperative course was uneventful. There were no leaks and patients were discharged on postoperative day three. At the time of the stent removal a retrograde pyelogram showed patent anastomoses with no strictures or leaks.

CONCLUSIONS: End-to-side and one end-to-end ureteroureterostomy can be performed laparoscopically in infants with good results. To the best of our knowledge this is the first report of a laparoscopic ureteroureterosomy done to repair an iatrogenic ureteral injury in a child or to treat a duplication anomaly.

Poster Tour 010

MINIMALLY INVASIVE MANAGEMENT OF POST-TRAUMATIC BILE LEAKS, Scott C Boulanger MD, Guy F Brisseau MD, John R Gosche MD, Division of Pediatric Surgery, University of Mississippi Medical Center, Jackson, MS, USA and Division of Pediatric Surgery, Dalhousie University, Nova Scotia, Canada

OBJECTIVE: Bile acites is an infrequent complication of blunt abdominal trauma. The bile leakage results from injury either to the liver or biliary tree. Traditional approaches to the care of these patients often requires multiple open procedures. We report the management and follow-up of two patients with large bile leaks after blunt abdominal trauma using a minimally invasive approach.

METHODS: A retrospective chart review was performed on both patients.

RESULTS: Case 1. A 12 year old female presented with grade 4 liver injury after a bicycle accident. One week later the pt developed distension and worsening abdominal pain. A delayed biliary leak was diagnosed by HIDA scan and CT. Laparoscopy was performed to wash out the abdomen and place closed suction drains. Post-operatively the patient underwent ERCP and was diagnosed with a partial tear of the left hepatic duct just proximal to the confluence. A sphincterotomy was performed and a stent was placed. Repeat ERCP was performed 6 weeks later demonstrating no leak and the stent was removed. The pt remains well over three years later. Case 2. 11 y.o female involved in an ATV accident with grade 4 liver laceration presented 8 days later with abdominal pain and distension. The pt had an elevated bilirubin and a CT scan showed large amount of ascites. Laparoscopy was performed and confirmed biliary ascites and the abdomen irrigated and closed suction drains were placed. A HIDA scan confirmed an ongoing leak and ERCP was performed 48 hours post-operatively demonstrating an intrahepatic biliary leak. A sphincterotomy and stent placement was performed and one week post-op the drains were removed. A month later repeat ERCP demonstrated no further leak and the stent was removed. The pt remains well nine months later.

CONCLUSION: The combination of laparoscopy and ERCP is an excellent approach to the management of patients with post-traumatic bile ascites, allowing diagnosis of the specific injury and treatment without the need for open exploration.

Poster Tour 011

ANALYSIS OF HERNIA RECURRENCES AFTER LAPAROSCOPIC HERNIA REPAIR IN CHILDREN, Celeste Hollands MD, University at Buffalo, Women and Children's Hospital of Buffalo

Several techniques of laparoscopic inguinal hernia repair in children have been described. Higher recurrence rates have prompted our group to limit laparoscopic hernia repair to girls. Purpose:The purpose of this study is to determine the recurrence rate for girls undergoing laparoscopic inguinal hernia repair and to discuss and show approaches for reducing hernia recurrence. Methods: Charts for all girls undergoing laparpscopic inguinal hernia repair from September 2002-April 2005 were reviewed for: patient demographics, operative procedure and complications. Data was analyzed using a student's t-test with significance defined as $p<0.05$. Results: 60 patients underwent laparosopic inguinal hernia repair by either the LIL (laparoscopic inversion ligation) or Awl technique. There were 46 patients (77%) undergoing 52 LIL hernia repairs and 14 patients (23%) undergoing 19 Awl hernia repairs. The recurrence rate of 26.3% (5/19) for the Awl technique was significantly higher ($p<0.001$) than the 3.8% (2/52) recurrence rate for LIL repairs. There was no difference between the two groups for age (LIL:5.13+/-4.83 yrs; Awl 4.92+/-3.09yrs; $p=0.87$). The findings at reoperation for the Awl group revealed two patients with the pursestring suture visible well below the level considered adequate for a high ligation when performed open. Absorbable monofilament suture had been used initially in the other three patients so the site of ligation could not be determined, but an indirect hernia was noted. The recurrences in the LIL group revealed one patient with a sliding hernia (fallopian tube) with the suture visible well below the level considered adequate for a high ligation and one with a direct hernia with the suture visible at the level of a high ligation.

Conclusions: LIL hernia repair has become the only technique employed for laparoscopic inguinal hernia repair in girls at our institution. The procedure is converted to open if a direct or sliding hernia is noted.

Poster Tour 012

THORACOSCOPIC REPAIR OF ESOPHAGEAL ATRESIA (EA) WITH TRACHEO-ESOPHAGEAL FISTULA (TEF): THE MONTPELLIER EXPERIENCE, Manuel Lopez MD, Nicolas Kalfa MD, Dominique Forgues MD, MP Guibal MD, RB Galifer PhD, Hossein Allal MD, Pediatric Videosurgery Division and Department of Pediatric Surgery, University of Montpellier, Lapeyronie Hospital

Objective: This retrospective study reports our experience in the cured of EA/FTE by Thoracoscopic approach and describes the evolution and valued the results for theses patients.

Methods: 11 neonates were operated for EA/FTE by thoracoscopy approach in our unit From April 2002 until October 2005. Two patients had a Vacter association, five neonates were spontaneously ventilating and all were hemodynamically stables. In these patients the mean age at operation was 20, 6 hs of life and the mean weight was 3kg.

Results: All procedures were completed thoracoscopically without peroperative complications, any conversion to an open thoracotomy was necessary. At the same time a number of other operations were required by laparoscopic including duodenal atresia and imperforate anus in two patients. The mean operative time was 150min, the mean days of mechanical ventilation were 3, 6 days and the mean days of total hospitalization were 14 days, none neonate developed an early leak or stricture at the anastomosis, only one infant required esophageal dilatation for a minor anastomosis nine month later. Two patients developed a gastro-esophageal reflux and required laparoscopic Nissen fundoplication.

Conclusions: The EA/TEF is possible and safely by thoracoscopy in experienced surgeons. The advantages of the thoracospic approach of this type of malformation may be: a mini-invasive thoracic surgery, the quality of exposition during the fistula closure and esophageal anastomosis, and offer cosmetically excellent results and postoperative recovery should be

more rapid.
The principle advantage is the avoidance of a thoracotomy and all adverse musculoskeletal sequelae following thoracotomy.

Poster Tour 013

OUTCOME OF LAPAROSCOPIC TREATMENT OF BILATERAL NON PALPABLE TESTICLES (BNPT), S. Bernard MD, M. Bailez MD, General Pediatric Surgery ; J. P. Garrahan Hospital . Buenos Aires . Argentina

Aim : To asses the results of laparoscopic approach of non palpable bilateral undescended testicles treated in a single institution

M&M : Twenty one patients with BNPT(42 testicles) out of 129 patients with non palpable testicles(16,27%) who underwent laparoscopy between January 1997 and June 2005 were considered for evaluation. Their mean age was 6 years old (2-13y). An analysis of prospective data collection that included : age , associated anomalies , intraoperative findings and doppler and clinical follow up was made.

Surgical thecnique : An initial 3 or 5mm lens port was placed in the umbilicus. We used 1 operative 5 or 3 mm port and bipolar high fulguration and section of spermatic vessels for the 1st stage of the Fowler Stephens procedure (1FS) and 2 for primary or the second stage orchidopexy . The processus vaginalis was left open alter dissection and the gubernaculum vessels were always preserved in second stage FS. The end of the vas and spermatic vessels were resected and sent to pathology in the presence of an inguinal atrophy.

Results : Thirteen patients (61,9%)had an associated anomaly: 3 Prune Belly syndrome,1 bilateral Wilms tumor , 1 spleengonad fusion and 2 ambiguos genitalia.
We found 34 (80,9%) intrabdominal testicles(IAT) and 8 (19,04%) atrophies. The presence of 2 IAT was the most frequent association.Ten patients underwent simultaneous 1FS (20 testicles) and 7 only unilateral .
The 2nd FS was comlpeted in 24 of the 27 .(88,8%) alter a mean period of time of 10,7 months .Primary orchidopexy (PO)was performed in 7 IAT.
Thirteen different pediatric surgical fellows operated assisted by 1 of the authors in 80% of the patients.
Patients mean age is 9,6 years (4 ? 17y). Alter a mean follow up of 46,9 months (10 - 105m) all testicles are in a good scrotal position and have a positive doppler sonography. . All but 1 testicle are well developing .This patient was an xx male with an hipotrophic testicle One patient who underwent a 2 FS procedure required a unilateral reoperation to reach the scrotum Microscopic testicular remnants were found in 5/8 inguinal remnants .

Conclusion: Bilateral staged FS is a safe ,reproducible procedure with a high success rate of long term ?survival? of the testicle.
Our histologic findings suggests that Inguinal remnants need to be resected in patients with BNPT

Poster Tour 014

LAPAROSCOPIC TREATMENT IN INFANTS WITH PATHOLOGY OF BILE DUCTS AND PREOPERATIVE IMAGING BY HIGH RESOLUTION MRCP, H. J. Kirschner MD, P. Szavay MD, J. Schaefer MD, J. Fuchs MD, University Hospital Tuebingen, Department of Pediatric Surgery, Radiological Clinic

Aim of the Study: Reports on minimally invasive bile duct surgery in infants are rare. We report on our initial experience with laparascopic treatment in three infants with pathology of bile ducts and preoperative imaging by high resolution magnetic resonance cholangiopancreatico-graphy (MRCP) with diaphragm navigation and 3D- visualisation.

Patients and Methods: In 2004 three infants underwent minimally invasive surgery of the bile ducts at our institution. In all cases the diagnosis was made preoperatively by MRCP performed in spontaneously breathing under sedation. The findings were correlated prospectively with endoscopic cholangiopancreaticography (ERCP) and surgical findings.
Patients’ age was 4 mo, 13 mo and 3.5 y repectively. Sympoms were pancreatitis and cholestasis. Diagnosis was long common channel in 2 cases , in one with a prepapillary stone and one infant additionally with cholecystolithiasis.
Laparoscopic treatment was hepatico-jejunostomy in two cases, cholecystectomy and revision of the common bile duct in one child.

Results: In all three patients the preoperative diagnosis made by MRCP could be confirmed by ERCP and intraoperative findings. In two children the operation was performed completely by laparoscopy. The end-to side enteroenterostomy of the Roux en Y- loop was carried out extraabdominally through the extended subumbilical trocar-incision. In one child a conversion to open operation had to be performed after cholecystectomy, because of a very small common hepatic duct.

Conclusion: The laparoscopic approach in pathology of bile ducts might be an alternative surgical treatment in infants. In all cases the 3-D visualization of pancreatic and bile ducts by MRCP was helpful for planning of the operation.

Poster Tour 015

CREATION OF AN ESOPHAGO-ESOPHAGOSTOMY FROM BLIND-ENDING POUCHES: A NOVEL TECHNIQUE., Vaughn E Whittaker MD, Rajinder P Gandhi MD, David L Friedman MD, Victor Valda MD, Arthur Cooper MD, Division of Pediatric Surgery, Columbia University College of Physicians & Surgeons, Harlem Hospital Center, New York, New York

Purpose: To describe a novel technique for restoring esophageal continuity from blind ending esophageal pouches resulting from a tight occlusive stricture. Subsequent dilatations using a ureteral glide wire, Cooks? dilators, and placement of a double-J ureteral stent is described. This was performed in a twenty-two (22) month old boy status post primary repair of esophageal atresia with distal tracheo-esophageal fistula complicated by a tight occlusive stricture. He subsequently underwent esophageal resection and primary re-anastomosis, Nissen fundoplication with four (4) revisions, and placement of esophageal stent for esophageal stenosis. All standard procedures failed, resulting in two blind esophageal pouches.

Methods: The proximal blind ending pouch was visualized using gastrografin introduced via a nasogastric tube. A rigid esophagoscope was passed into the blind pouch. A flexible endoscope was then passed through the gastrostomy stoma in the stomach and cephalad into the distal esophagus. The endoscopes were aligned next to each other using fluoroscopy. An injector needle was passed through the rigid endoscope into the distal esophagus under flexible endoscopic control. A glide wire was then passed through the injector needle into the stomach followed by Cooks? dilators. A seven (7) French, twenty-two (22) cm double-J stent was then passed through the esophageal stricture under fluoroscopic guidance and left in place. Four (4) subsequent dilatations using the technique were performed. The patient was last dilated to a caliber of twenty-four (24) French.

Results: The patient now tolerates ice cream, applesauce, baby food, and liquids with marked improvement in oral intake.

Conclusion: Creation of an esophago-esophagostomy using this novel technique has proven to be safe and effective.

Poster Tour 016

EFFECT OF ELEVATED INTRA-ABDOMINAL PRESSURE ON ENTEROCYTE TURNOVER IN A RAT., Jorge Mogilner MD, M Lurie MD, Y Begar MD, M Krausz MD, M Hirsh MD, I Sukhotnik MD, Bnai Zion Medical Center.Rappaport Medical School.Technion.Israel

Aim : Recent evidence suggests that elevated IAP reduces mesenteric blood flow and causes histological damage to the intestine. The purpose of the present study was to evaluate the effects of IAP on enterocyte turnover in a rat.

Methods: Male Sprague-Dawley rats were divided into three experimental groups: Sham rats (Group A) underwent insertion of Foley catheter through stab wound in their abdominal walls and were subjected to IAP of 0 mm Hg, IAP-15 rats (Group B) underwent insertion of Foley catheter and inflation of air intraperitoneally to create the elevated IAP of 15 mm Hg, and IAP-25 rats (Group C) were subjected to IAP of 25 mm Hg. 24 hours later, rats were sacrificed. Intestinal histologic changes (villus height, enterocyte proliferation and apoptosis were determined at sacrifice.

Results: IAP-15 rats (Group B) demonstrated a significant

decrease in ileal crypt depth ,decrease in the index of proliferation in ileum, and significant increase in enterocyte apoptosis in both jejunum and ileum compared to Sham animals (Group A). IAP-25 rats (Group C) had a lower crypt depth in ileum ,a lower index of proliferation in both jejunum and ileum, and greater index of enterocyte apoptosis in both jejunum and ileum compared to Sham animals (Group A). IAP-25 rats showed greater anti-proliferative and greater pro-apoptotic effect compared to IAP-15 animals.
Conclusions: In a rat model of abdominal compartment syndrome, elevated IAP impairs enterocyte turnover. The anti-proliferative and pro-apoptotic effects were increased parallel to increase abdominal pressure.

Poster Tour 017

LAPAROSCOPIC INTUSSUSCEPTION REDUCTION FOR FAILED AIR ENEMA, SA Clarke MD, KH Lee* MD, G Chan* MD, K McHugh MD, DP Drake MD, A Pierro MD, CK Yeung* MD, J Curry MD, Great Ormond Street Hospital for Sick Children, London ; Prince of Wales Hospital, Chinese University of Hong Kong*

Introduction: The role of laparoscopy in the management of intussusception was first described over a decade ago. Laparoscopic reduction following a failed pneumatic reduction may be of use in preventing laparotomy. Repeat air enemas have variable success rates and may result in further ischemia. Our aim was to analyse outcome of laparoscopic intussusception reduction at two institutions.
Methods and Procedures: A retrospective case note review was carried out to analyse outcome of laparoscopic reduction at two institutions.
Results: 129 patients had a confirmed ultrasound diagnosis of intussusception. 101 patients (78%) had a successful reduction using air enema. 8 patients had a delayed 2nd air enema of which one was successful. 28 patients required operative reduction; 12 following a failed initial air enema ; 8 following a delayed 2nd air enema and 8 without air enema. There were 16 attempted laparoscopic reductions of which 14 were successful (81%) . 3 of these patients had undergone a failed delayed 2nd air enema. Two patients required resection via the umbilical incision. One recurred within 24 hours. Of the 2 that were converted to laparotomy, both required resection. There were 12 primary laparotomies of which 7 reduced manually without resection. There were no peri-operative complications in the laparoscopic group.
Conclusions: Laparoscopy has a role in the management of intussusceptions that fail to reduce pneumatically thus avoiding laparotomy. We propose an algorithm of laparoscopic reduction in preference to a delayed enema or primary laparotomy. This could also be a first line method of reduction or further investigation in older children with possible lead points or those unfit for air enema.

Poster Tour 018

MAGNETIC COMPRESSION ANASTOMOSIS AS A NON SURGICAL TREATMENT FOR ESOPHAGEAL ATRESIA. LONG TERM FOLLOW UP, Mario F Zaritzky MD, Ricardo Ben MD, Hospital de Niños de La PLata

PURPOSE: To communicate patient?s status after more than 3 years follow up.
METHOD AND MATERIALS: Between September 2001 and March 2003, 6 children between 30 days and 17 months of age, were admitted and evaluated. 5 were selected to be treated with this method. A patient was excluded because of age and excessive separation of the ends.
Technical details of the anastomoses method:
Neodymium-iron-boron (NdFeB) magnets with 12.800 gauss of magnetic power were used, mounted on catheters of double and triple lumen for the superior and inferior end, respectively. Biplane X-rays were taken initially and daily until the union of both magnets was achieved; at this moment the magnet catheters were replaced over a guide wire, for an oral-gastric tube. 48 hrs. later the patient started oral feedings.
Since September 2001 to September 2005 those 5 patients were followed up in order to assess esophageal lumen and patient?s development.
RESULTS: Initial anastomosis was achieved in all patients (100 %). The union of the ends was obtained in 4,8 days average (range 2 to 7 days). The clinical and radiological follow up demonstrated in all cases but one, significant and early esophageal stenosis treated with balloon dilatation. Three patients (60%) were treated with periodic balloon dilations. One patient (20%) underwent surgery because of failure in treating the esophageal stenosis with balloon dilatations. All patients (100%) are currently free of treatment with oral diet after 38 months.
CONCLUSIONS: Esophageal anastomosis was achieved in all the cases. Esophageal patency with magnetic anastomosis and dilatation was achieved in four (80%) cases. Surgical re-anastomosis was made without difficulties.
The only observed complications of significance were esophageal stenoses. Only one patient (20%) was operated because of untreatable stenosis after ballon dilatation. Surgical re-anastomosis was made in this patient without difficulties. All patients are currently with oral diet, free of treatment and with normal weight according with age.
It is indispensable to continue working in the design of the magnets and/or Stents that it could avoid the mentioned complication.

Poster Tour 019

THORACOSCOPIC LIGATION VERSUS COIL OCCLUSION FOR PATENT DUCTUS ARTERIOSUS, Sanjeev Dutta MD, Alexandra Mihailovic MD, Brian H Cameron MD, Lee N Benson MD, Paul F Kantor MD, Peter G Fitzgerald MD, Mark Walton MD, Jacob C Langer MD, The Hospital for Sick Children, Toronto, Canada & McMaster Children's Hospital, Hamilton, Canada

Objective: To compare the outcome and cost of coil occlusion (CO) and thoracoscopic surgery (TS) for treatment of patent ductus arteriosus (PDA).
Methods: Twenty-four consecutive children undergoing TS for PDA were each retrospectively matched by PDA diameter and child weight to 2 CO children managed during the same time period (giving a total of 48 children in the CO group). The two modalities were compared with respect to outcome and cost. Statistical analysis was performed using a Student?s t-test and Mantel-Haenszel relative risk. Cost analysis from an institutional perspective was used to compare resource consumption.
Results: Mean PDA diameter 3.6±1.2mm in both groups. Mean age and weight for TS and CO groups 2.7 and 2.9 yrs and 13.2 and 13.1 kg, respectively. Mean total operative times 94±34min for TS and 50±23min for CO ($p<0.0001$). Mean length of stay 1.6±0.2days for TS and 0.6±0.2days for CO (Mantel-Haenszel RR (95% CI)=0.15 [0.07, 0.29], $p<0.0001$). Mean fluoroscopy time with CO was 13±7min. No TS or CO children required conversion to open surgical ligation. Two children in each arm (8% TS, 4% CO) had small persistent shunts requiring antibiotic prophylaxis. The cost per child was C$4282.80 for TS and C$3958.08 for CO.
Conclusions: TS is as efficacious for PDA closure as CO but requires longer surgical times and lengths of stay. Costs for each procedure are similar.

Poster Tour 020

THE THORACOSCOPIC AND LAPAROSCOPIC APPROACH TO DIAPHRAGMATIC EVENTRATION, Alexandra Weltzien MD, Christine Matthes, Felix Schier MD, Department of Pediatric Surgery, University Medical Centre Mainz, Germany

OBJECTIVE: To evaluate 6 cases of diaphragmatic eventration who underwent plication via either the laparoscopic or the thoracoscopic approaches.
METHOD: Six patients aged 8 months to 12 years (median 4.6 years) with left-sided diaphragmatic eventration underwent surgical repair. In 2 cases a thoracoscopic access was chosen. Four patients were operated on laparoscopically.
RESULTS: A transient cardiac arrest occurred in the thoracoscopic group, necessitating resussitation, possibly caused by too rapid insufflation. The patient recovered uneventful. In the laparoscopic group, one early recurrence required a second (again laparoscopic) intervention. In one child the uncommonly thin diaphragm was perforated intraoperatively during laparoscopy. The defect was closed with a second row of

sutures. No other complications occurred.
DISCUSSION: Exposure of the posterior portion of the diaphragm is more straightforward with the thoracoscopic approach. Otherwise, we did not notice a major difference in technical difficulty between the two approaches. Most previous reports prefer the thoracoscopic approach. We feel, however, although our numbers are small, that the laparoscopic approach is feasible equally well.
CONCLUSION: Until further accumulated experience with either approaches is available, the surgeon should chose the technique he feels most comfortable with

Poster Tour 021

THORACOSCOPIC RESECTION OF NEUROGENIC TUMORS IN CHILDREN, Lacreuse-Talon Isabelle MD, Becmeur Francois MD, Guye Emmanuelle MD, Leclerc Jean Marc MD, Valla Jean Stéphane MD, Moog Raphael MD, Varlet Francois MD, Hôpitaux Universitaires de Strasbourg, Department of Paediatric surgery

Purpose: The aim of this study was to evaluate the feasibility and technical details for thoracoscopic resection of neurogenic tumors in children.
Materials and methods: 18 patients (age range, 7 months to 14 years; average: 6 years) underwent thoracoscopy for neurogenic tumor resection between 2000 to 2005. One 10 mm optical trocar and 2 operative 5mm trocars were needed. Selective intubation was required for 3 patients aged about 12 years. Tumor was removed with an endobag in all cases.
Results: All procedures were completed successfully without any incomplete resection or recurrence. One conversion was necessary due to a huge mass. Twelve of the fifteen patients had a chest tube for a mean time of 2 days. Two postoperative chylothorax required chest drainage for 12 days. Only the five older patients (mean age: 12 years) needed a PCA (Patient Controlled Analgesia). The average operating time for those five patients was 117 minutes regarding 93 minutes for the other 12 younger patients (mean age: 3 years). Mean hospital stay was 4.5 days. Tumors were neuroblastoma or ganglioneuroblastoma in 16 cases and ganglioneuroma in the 3 other cases.
Conclusion: Thoracoscopy for resection of thoracic neurogenic tumors in children is a feasible, safe and efficient procedure. Surgeon had a better visualisation of the tumor and its anatomic connexion. Resection can be as complete as in open procedure without complicating the technique in the same operating time. It avoids cosmetic and functionnal disorders due to thoracotomy. It allows a good cosmetical resection without spillage.

Emerging Technology Abstracts

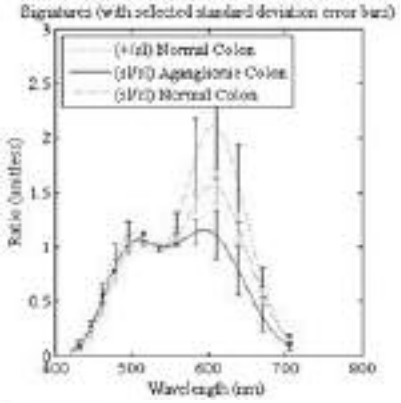
ET 001

A NOVEL, RAPID, AND ACCURATE METHOD FOR DETERMINING THE LEVEL OF AGANGLIONOSIS IN HIRSCHSPRUNG'S DISEASE USING SPECTAL BIOIMAGING Philip K Frykman MD, Mark Gaon MD, Erik Lindsley PhD, Juan Lechago MD, Alice P Chung MD, Yizhi Xiong PhD, Daniel L Farkas PhD, Division of Pediatric Surgery, Minimally Invasive Surgical Technologies Institute, Departments of Surgery and Pathology at Cedars-Sinai Medical Center, Los Angeles

Background: Primary transanal pull-through techniques for correction of Hirschsprung's disease (HD) rely on intraoperative pathologic frozen sections to determine the transition zone of aganglionosis. Accuracy of this technique is dependent on many variables including specimen quality and the expertise of the individual pathologist. This critical step yields variable results between institutions and consumes valuable operating time. In this study, in vivo spectral imaging technology was applied to distinguish normal from aganglionic colon rapidly without biopsy.

Method:The mouse model of short-segment HD, piebald-lethal, homozygote (sl/sl) and heterozygote (+/sl) animals, (n=6 of each genotype) were given isoflurane inhalational anesthesia and laparotomy was performed. In vivo spectral imaging of the serosal surface of the lower colon was performed in both groups. The (+/sl) animals served as control; (sl/sl) animals had both the distal colon (aganglionic) and proximal colon (normal) imaged. The imaged segments were marked precisely at the site of imaging for pathologic evaluation using standard methods. Data from each group yielded 3919, 1352, 6231 observations from (+/sl) controls, (sl/sl) normal colon, (sl/sl) aganglionic colon, respectively.

Results: Spectral signature curves were generated from each group with SD and normalized to 543 nm. The spectral signatures of each group are clearly distinguishable from one another. The spectral signatures comparing (sl/sl) normal colon to (sl/sl) aganglionic colon at 609 nm and ratio 1.47 shows Sensitivity=97%, Specificity=94%, PPV=92%, NPV=98%.



Conclusion: This in vivo spectral imaging technique is a novel, rapid, and accurate method to distinguish aganglionic from normal colon in the piebald-lethal mouse model of HD. Application of this technology to children with HD has the potential for improved accuracy and real-time determination of the transition zone without the need for frozen sections.

ET 002

ELECTROGASTROGRAMS AND GASTRIC ELECTRICAL STIMULATION FOR CHRONIC GASTROPARESIS IN CHILDREN, Saleem Islam MD, John R Gosche MD,Laura R Vick MD,Thomas Abel MD, University of Mississippi Medical Center

Purpose: Electrogastrograms (EGG) allow the evaluation of abnormal gastric motility in patients with possible gastroparesis. In adults with abnormal EGG results, Gastric electrical stimulation (GES) has been performed as a treatment for refractory nausea and vomiting, in patients who have failed medical treatment. It has not been used in individuals less than 18 years old with gastroparesis. We present our experience with GES and also report on EGG as a diagnostic tool.

Methods: 6 patients, 1 male, 5 female with chronic nausea and vomiting with a mean age of 15 years (range 13-18), were evaluated with gastric emptying studies and cutaneous EGG for temporary GES. All patients had idiopathic gastroparesis. Temporary GES was used with endoscopically inserted leads and an external pacing device. All six patients responded to the temporary GES with improvement in EGG and symptoms. Five patients subsequently underwent surgical placement of a permanent GES device - four laparoscopically and one open. Each patient had an intra operative EGG performed. Symptoms were recorded at baseline, after temporary pacing and then after permanent pacing using a Likert scale (0-4 for each symptom with a total of 5 symptoms). Statistical analysis was performed using a paired student?s t test and a value of <0.05 was considered significant.

Results: At baseline, all patients were symptomatic and most had delayed solid gastric emptying, some delayed liquid gastric emptying, and abnormal EGG. As a group, there was a significant improvement in nausea (3.4 ±0.4 to 1.7±0.3, p=0.005), and combined symptoms score (11.3±2.0 to 5.0±1.5, p=0.02). Gastric emptying and EGG values also improved. Follow up ranged from 3- 26 months, with an average of 11 months.

Conclusions: GES can be successfully applied to adolescents with intractable nausea and gastroparesis symptoms. EGG is a useful diagnostic and monitoring tool in this group of patients. Long term efficacy of this therapy in children needs to be established.

ET 003

A NOVEL NITINOL PYLORIC GRASPING DEVICE FOR LAPAROSCOPIC PYLOROMYOTOMY., Tiffany Card BS, Nicole Kahn BS,Craig Milroy MS,Sanjeev Dutta MD, Lucile Packard Children's Hospital, Stanford University Medical Center

Background: Immobilization of the hypertrophied pylorus in preparation for myotomy can be challenging in the laparoscopic setting, and may impact risk of perforation. Current tools are limited in their capacity to constrain the multiple degrees of freedom of the pylorus due to a single fulcrum point. A collaborative effort between pediatric surgeons and engineers has been initiated to develop a novel instrument for pyloric stabilization.

Methods: A needs assessment for this device was performed through expert interview and procedural observation. A brainstorming session was used to generate possible device designs and this list was narrowed based on simplicity, cost, and effectiveness. A final prototype was constructed using a retractable nitinol cuff for cinching around the pylorus.

Preliminary Results: Feasibility testing on an inanimate model indicates the device is robust and effective in immobilizing the model pylorus. Due to the super elastic properties of nitinol, the cuff is retractable into a 3mm sheath, making the device suitable for laparoscopic surgery on infants. Testing on human cadavers, and then patients, is planned.

Conclusions & Future Directions: When advanced out of its sheath, the wire assumes a three dimensional geometry that can circumferentially grasp the pylorus. Applying tension to the wire creates a cinching force that restrains movement of the pylorus in multiple dimensions while the myotomy is being performed. A complementary surgical knife that will enable the surgeon to both cut and spread the muscle tissue with one hand while it is securely restrained by the nitinol cuff held in the other hand is in the early stages of development.

ET 004

MINI OPERATING LAPAROSCOPE FOR THORACOSCOPIC SYMPATHECTOMY IN CHILDREN, Asher Pressman MD, Dan Yardeni MD,Bassem Kawar MD,Leonardo Siplovitch MD, Pediatruc Surgery, Emek Medical Center, Afula, Israel.

Primary Palmar Hyperhidrosis (PPH) is very common condition in the Middle East and Israel effecting 1.5% of it's population. It is not a life threatning condition but it has significant disabling effect on those suffering from PPH, particulrly children and teenagers. Surgery (Sympathectomy) is the most effective treatment. The traditional axillary or sub-mandibular thoracotomy is a major operation, it can be dangerous, very painful, many post operative complications and sometimes poor cosmetic results. Thoracoscopic Sympathectomy is simple and safe procedure, with much less intra and post operative com-

plications, less post operative pain and very short recovery time. Usually it is done through two 5mm ports (one for the telescope and one for unstruments) or one 12mm port for 10mm laparoscope with working channel. Since 2003 we operated 50 children and teenagers (6y-20y) throuh one port using 5.5mm Mini Operating Laparoscope with 3.5mm working channel, 0 deg angle of view (manufactured by R. WOLF). The laparoscope is introduced throuh 5.5mm axillary incision. Due to its very high resolution (50,000 pixel), it produces very sharp and detailed picture of the intra tohracic anatomy including the sympathtic chain. Thanks to the integrated working channel' other measures, such as disconnecting the sympathetic chain, possible. The significant reduction of the dimentions compared with the standard 10mm laparoscope or the two 5mm ports, significantly reduces traumatisation of the chest wall. This makes the mini laparoscope particularly suitable for use in children and teen agers for whom the size and looks of the scar is important.

ET 005

A NEW ELECTROSURGERY MODALITY: PRE-CLINICAL TESTING, Michael V Tirabassi MD, Carolanne Lovewell,Casey Ladtkow,Jason Craig,Kevin P Moriarty MD, Baystate Children's Hospital

Purpose: The goal of these experiments was to compare the performance of a new electrosurgical modality (Force TriVerse Valleylab Mode, Valleylab, Boulder, CO) to standard electrosurgical modalities.

Methods: After obtaining IACUC approval three 40Kg female swine were anesthetized. A total of 42 electrosurgical incisions were made in skin, fat, fascia, and muscle. A robotic devise was employed to provide constant force (0.12 lbs) and constant tissue depth advancement (3/16 inch) for each incision. Power output was kept constant at 20W. Two control electrosurgery modes, fulgeration and cutting with blend, were generated with a Force Fx generator. Force TriVerse Valleylab Mode was generated with a prototype generator (both made available by Valleylab, Boulder, CO). Instantaneous velocity measurements were taken every 0.0001 seconds. Bleeding events were documented.

Results: When comparing TriVerse to fulgeration the tissue division velocity was increased 4.1 fold in subcutaneous fat and 2.9 fold in muscle tissue. These differences were statistically significant by student t-test, p = 0.035 and 0.032 respectively. There were no bleeding events for skin incisions. In all tissue types there were fewer bleeding events with TriVerse mode than cutting. TriVerse had more bleeding events in subcutaneous fat, fascia, and muscle compared to fulgeration, muscle being statistically significant by chi-square analysis (X2=4.8).

Conclusions: The TriVerse Valleylab Mode offers up to a 4 fold increase in tissue cutting velocity of skin, subcutaneous fat, and muscle versus fulgeration. TriVerse Valley lab Mode also offered improved hemostasis in subcutaneous fat, fascia, and muscle versus cutting mode. This offers the Pediatric Surgeon the choice of using decreased power, minimizing thermal spread and tissue injury.

ET 006

USE OF NON-ABSORBABLE POLYMER LOCKING CLIPS FOR AIRWAY SEALING IN COMPLEX PEDIATRIC THORACOSCOPIC SURGERY, Marcelo Martinez-Ferro MD, Horacio Bignon MD, Department of Pediatric Surgery. ?Fundacion Hospitalaria? Children?s Hospital. Buenos Aires. Argentina.

PURPOSE: Evaluate the use of an innovative cold ligation system for the ligation of airway structures during complex pediatric thoracoscopic surgery.

METHODS: From January 2003 to August 2005, 15 patients with different surgical conditions required thoracoscopic lung lobectomy (n:5) or TEF ligation (n:10). In all patients the airway structures were sealed with Hem-o-lok® non-absorbable locking clips. The Hem-o-lok product line is an innovative cold ligation system that combines the security of a 2.0 suture with the speed of a metal clip for open and laparoscopic surgery. Four sizes are available (M, ML, L, and XL) to ligate up to 10mm tissue through a 5mm trocar or up to 16mm through a 10mm trocar. Non-absorbable polymer locking clip is inert, non-conductive, CT/MRI compatible. The applying system provides an easy loading system and tactile feedback.

RESULTS: The Hem-o-lok® ligation system was used in to close the bronchial structures in 5 patients with CCAM that required thoracoscopic lobectomy. Two lesions were on the left, and 3 were in the right lung. The mean operating time was 110 minutes. The amount of clips used per patient ranged between 1 and 3. The same system was used to ligate the distal tracheoesophageal fistula in 10 patients with esophageal atresia. Only one clip was needed on each patient for this procedure. No complications were observed during or after surgery.

CONCLUSION: Although not originally designed to seal bronchial structures, the Hem-o-lok® ligation system proved to be a secure and effective method for bronchial closure in the pediatric patients.

ET 007

HEMOSTATIC OPTIONS OF LIVER BIOPSY SITES IN ONCOLOGICAL PATIENTS WITH COAGULATION DISORDERS, Cornelia van Tuil MD, Amulya K. Saxena MD, Pediatric Surgical University Medical Centre, Münster Germany and *Department of Pediatric Surgery, Medical University of Graz, Austria

Aim: Despite of all improvements in radiological diagnosis and the advances in ultrasound, the nature or differential diagnosis of liver masses cannot be made. Making the correct diagnosis can be challenging and help to delineate the hepatic manifestation in order to change the therapeutic approach. In oncological patients hepatic manifestation is often combined with coagulation disorders, so the laparoscopic approach to biopsies is safer than percutaneous techniques. However, optimal hemostasic methods still have to be investigated.

Methods: Four methods of liver hemostasis after laparoscopic biopsy were employed in oncological patients with coagulation disorders: conventional coagulation with electrocautery, photocoagulation using Nd:YAG laser, as well as Tissue adhesives in two forms (a) Injection- and (b) Spray-application (fibirinogen and thrombin combination ? Beriplast® or Tissuecol®). For application of the hemostatic material special instruments were used.

Results: All the procedures were completed without complications and hemostasis was achieved in all patients who had undergone laparoscopic hepatic biopsies. No late postoperative complications were observed using all four methods; however considerable differences in the indications in hemostasis management were justified according to the localization of the biopsy site and the age of the patient.

Conclusion: Liver biopsies are performed as minimal invasive diagnostic procedures and serve as important diagnostic tools in oncologic manifestation of the liver when other investigations are inconclusive. Punctual hemorrhage can be managed by cautery however escharization of the superficial tissue was found to mask the further bleeding from the deep. Laser was found to be more effective than cautery and suitable for small size biopsy bites. Tissue adhesives were found to be more effective, where the spray application was found to have many advantages over the conventional injection technique.

ET 008

MANAGEMENT OF PEDIATRIC ESOPHAGEAL STRICTURES WITH POLIFLEX STENTS, Gonca Topuzlu Tekant MD, Mehmet Elicevik MD,Nuvit Sarimurat MD,Osman F Senyuz MD,Ergun Erdogan MD, Istanbul University, Cerrahpasa Medical Faculty, Dept of Pediatric Surgery, Istanbul, Turkey.

Aim: To evaluate the outcome of poliflex esophageal stent application in pediatric esophageal strictures resistant to balloon dilatation.

Emerging Technology Abstracts

Methods: Poliflex (Rusch) esophageal stents were used in 6 pediatric cases. Three male and 3 female patients had an average age of 8.7 years (range: 5-14 years), and 5 were diagnosed with caustic esophageal strictures, while 1 had an anastomotic stricture at the lower esophagus following Suguira operation. Four caustic esophageal stricture cases had been on the ballon dilatation program longer than 2 years and were awaiting colon interposition surgery, one caustic case was on the dilatation program for 6 months and the portal hypertension case with anastomotic stricture had required 7 balloon dilatations in a 3 month period.
Under general anesthesia following ballon dilatation of the stricture, a silicone poliflex stent suitable for the patients size and length of stricture was inserted under fluroscopy.
Results: There was no mortality related to the procedure. There were 3 stent migrations; one to the proximal esophagus that was reinserted and two to the stomach which were removed endoscopically. In 2 cases the stents were removed folloeing 3 months after insertion with no complaints on follow-up, 3 cases required stent reinsertion for 3 times and the stent of the portal hypertension case is insitu for a period of 10 months.
Conclusion: In our initial experience, poliflex esophageal stent application has been well tolerated by children. Cost effectiveness, less anesthesia, decreased surgical complications and improved quality of life are expected. Outcome reports require longterm follow-up.

ET 009

CLINICAL APPLICATION AND DIAGNOSTIC YIELD OF WIRELESS CAPSULE ENDOSCOPY IN CHILDREN, Brice Antao MD, Jon Bishop MD,Rang Shawis MD,Mike Thomson MD, Paediatric Surgical Unit and Centre for Paediatric Gastroenterology, Sheffield Children's Hospital, Western Bank, Sheffield, UK

Objective: The small bowel is anatomically difficult to examine and is investigated by invasive and indirect modalities such as push enteroscopy and small bowel follow-through. The aim of this study is to assess the efficacy and clinical impact of wireless capsule endoscopy (WCE) in children.
Methods and procedures: Over the last 3 year (2002-2005), thirty six patients with suspected small bowel disease were investigated with WCE at a median age of 13.6 years (range 5.5 -19.2 years). The indications for WCE was suspected Crohn?s disease (18), obscure or occult gastrointestinal bleeding (7), polyposis syndromes (5), protein losing enteropathy (3), recurrent abdominal pain (2) and malabsorption syndrome (1). All patients had preceding upper gastrointestinal endoscopy (OGD), ileo-colonoscopy and 25 cases had a small bowel follow-through (SBFT). These results were compared with the findings on WCE.
Results: Thirty two cases successfully completed the WCE through the small bowel. Three patients were unable to swallow the capsule, two of which it had to be placed in the stomach endoscopically. In 3 patients the capsule remained in the stomach and no small bowel images were obtained. The overall diagnostic yield was 88% (28/32 patients). The diagnostic findings included Crohn?s disease (13), source of gastrointestinal bleeding (7), polyposis syndromes (3), erosive enteropathy and patchy lymphangiectasia (4) and intussusception (1). WCE was found to be more sensitive for small bowel pathology than SBFT [20 vs. 5 (25% sensitivity compared to WCE)] and endoscopic investigations [27 vs. 10 (37% sensitivity compared to WCE)]. As a result of WCE findings, there was a positive alteration in the management in 26/32 (81%) cases.
Conclusion: WCE is a novel, minimally invasive and useful tool for the investigation of the small intestine in children. It is superior and more sensitive than other conventional endoscopic and radiological investigations in the assessment of small bowel. It can help in guiding surgical decisions and should be routinely integrated as a part of the diagnostic work-up of small bowel pathology.

ET 010

EXPERIENCE WITH WEB BASED LIVE TELESURGERY FOR MINIMALLY INVASIVE PROCEDURES IN CHILDREN AS AN EDUCATIONAL TOOL, Steven S Rothenberg MD, George W Holcomb II MD,Thane Blinman MD,Keith Georgeson MD,Mike Irish MD, The Mother and Child Hospital at P/SL

Purpose: To evaluate the use of web based live tele-surgery as an educational tool for surgeons for advanced minimally invasive procedures in infants and children.
Methods: With an educational Grant from industry, 3 live surgeries were telecasted over the internet. Broadcast time was approximately 60 min in length and the procedures included a laparoscopic Nissen, thoracoscopic left lower lobectomy, and a laparoscopically assisted pull-through for imperforate anus. Notification of the telecasts occurred through e-mail notification to pediatric surgeons and appropriate societies. Viewing required on line registration and no direct costs were involved. The procedures could be viewed from any computer connected to the internet. There was a surgeon and onsite moderator for each procedure and viewers could ask questions real time via an e-mail link. Appropriate parental consent and HIPPA releases were obtained in each case. Cases were then archived on the web for later viewing.
Results: All procedures had successfully been performed. The broadcast were transmitted without problem. There were over 6000 preliminary hits at the industry web site, and the number of viewers for the first two procedures was 291 and 213 sites respectively in 41 countries. Statistics for the third broadcast are still being collected. An additional 1558 viewers later registered to watch the first two archived videos. Many sites had multiple viewers. An additional 720 viewers later logged in to watch the archived video. There were 181 questions and comments generated during the broadcast and an additional 80 post broadcast. One center created a CME activity around each broadcasts. Preliminary responses to a follow up questionnaire are favorable.
Conclusion: Web based broadcasts allow efficient dissemination of surgical experience. The broadcast maybe away to expand surgeon education in select cases, especially in an era of dispersed index cases, work hour restrictions, and evolving technologies. A network of pediatric programs linked via the web might provide an important educational tool.

Social Programs

Welcome Reception

Joint SAGES/IPEG Event

Date: Wednesday, April 26, 2006
Time: 5:00 - 6:30 PM
Place: Exhibit Hall
Fee: No Fee for Registrants & registered guests
Dress: Business casual

Special promotions, presentations and entertainment.
Great food! Open bar!
Note: Children under the age of 14 will not be permitted in the Exhibit Hall due to safety considerations.

The Taming of the Wild West!

SAGES/IPEG Dinner, Jamboree & Sing-Off

Date: Friday Evening, April 28, 2006
Location: Eddie Deen's Ranch
Shuttle pick-up/drop-off location: Clock Tower Entrance in the Atrium II
Time: 7:30 - 11:00 PM
Dress: Western Casual
Tickets: $10 for Scientific Session Registrants & Guests, $90 for additional guests

Put on your cowboys boots or dancing shoes and get ready for a hoot at Eddie Deen's Ranch (in Downtown Dallas).

The evening will conclude with the SAGES International Sing-Off. All Surgical Spring Week attendees are welcome to enter the competition.

Tours

Tour tickets are non-refundable.

Tour 1: Up Close and Personal- The Kennedy Assassination

Date: Wednesday April 26th
Approx. Time: 1:30 PM
Length: 3.5 - 4 hours
Fee: $45.00
Includes: Transportation via luxury motorcoach
Admission to The Sixth Floor Museum
Audio tour of the Museum (available in many languages)

The assassination of President John F. Kennedy on November 22, 1963 was a dark day that has been surrounded by subsequent mystery.

Visit **The Sixth Floor Museum,** located on the sixth floor of the former Texas School Book Depository (where Lee Harvey Oswald took the fatal shot). Next, visit **Dealey Plaza** for a tour of the area where the President was assassinated. Following, we will drive by: **Parkland Hospital** where Kennedy was taken, **Oswald's rooming house,** the scene of Dallas Police Officer Tippit's shooting, the **Texas Theater** where Oswald was apprehended, and even the **Dallas City Jail** where Jack Ruby shot Oswald. A fascinating look at what many people deem to be "the greatest mystery of our times."

Tour 2: Legendary Ladies

Date: Thursday April 27th
Approx. Time: 10:00 AM
Length: 6+ hours
Fee: $87.00
Includes: Transportation via luxury motorcoach
Small gift per person at Mary Kay
Lunch and dessert at Jeraboam

Enjoy a tour of the **Mary Kay Cosmetics Headquarters. Lunch at Jeroboam's.** After lunch we visit **The Women's Museum,** a branch of the Smithsonian Institution.

Tour 3: Cowgirl (Or Playgirl!) for a Day!

Date: Friday April 28th
Approx. Time: 10:00 AM
Length: 6 hours
Fee: $105.00
Includes: Our exclusive use of Circle R Ranch
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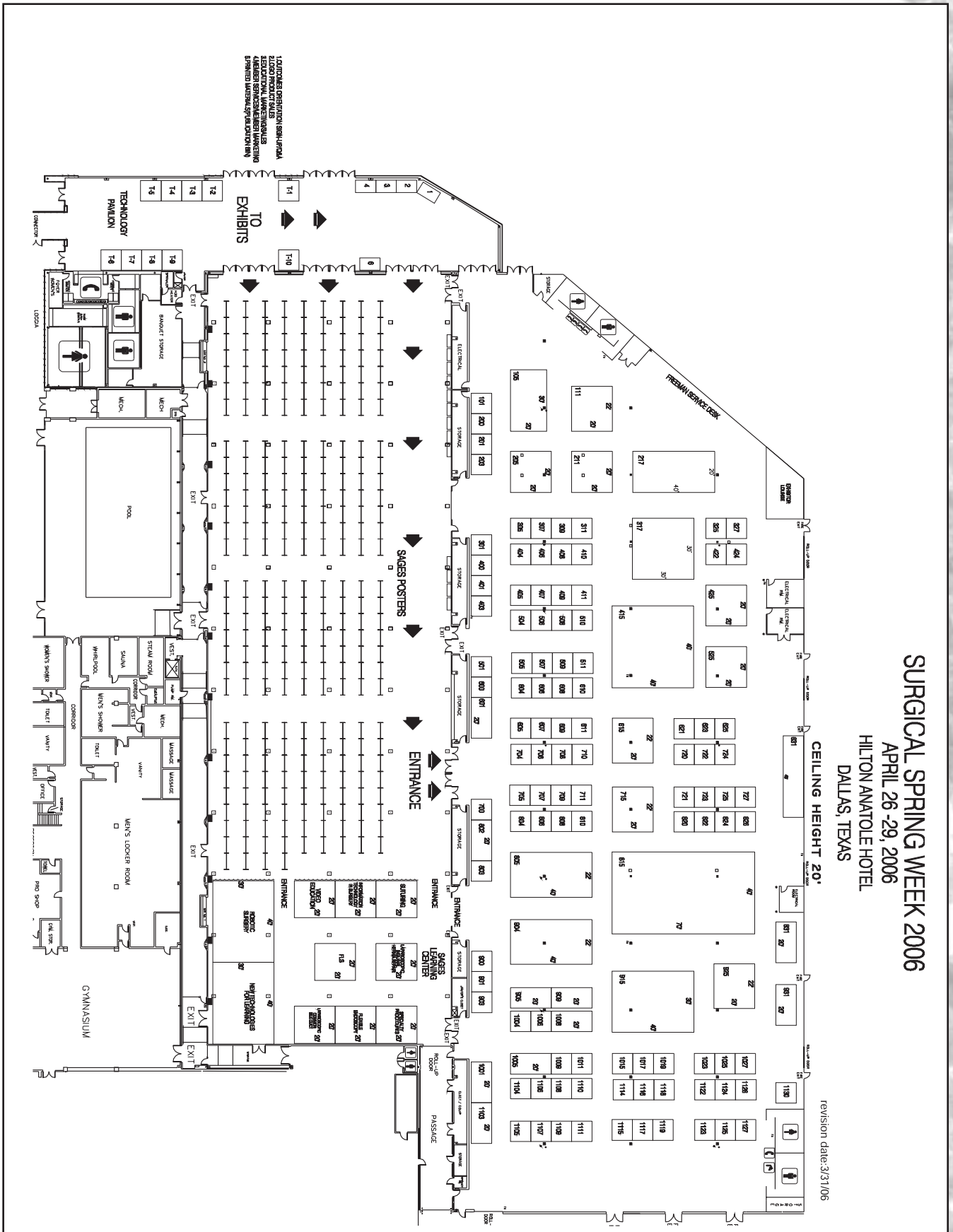

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Eindhoven, The Netherlands
Tel: 011-314-02525288 Fax: 011-314-02523102
Website: www.eaes-eur.org

EXEMPLO MEDICAL **#1023**
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Suite 230
Eagan, MN 55122
Tel: 952-903-9216 Fax: 952-903-9240
Website:www.exemplomedical.com

Exemplo Medical, an industry leader in Outcome Management Systems delivers robust, highly flexible specialty software used by Bariatric professionals to record and access information and outcomes related to patients and procedures. Our eMD for Bariatrics (MDB) solution offers care providers the opportunity to collect standardized clinical and procedural data, review and analyze results and shape program goals based on outcomes.

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Lynchburg VA 24502
Tel: (434)528-4000
Website: www.cbfleet.com

Company profile: Fleet Laboratories manufactures Fleet® Prep Kits, Fleet® Phospho-soda® and Fleet® ACCU-PREP® for colon cleansing prior to colonoscopies and surgical procedures. Additionally, Fleet offers the most complete line of laxative products and is constantly committed to quality and innovation.

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The Independent Monthly Newspaper for General Surgeons.

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Tel: 617-342-7270 Fax: 617-342-7080
Website: www.haptica.com

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Website: www.karlstorz.com

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KENWOOD THERAPEUTICS **#301**
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Website: www.bradpharm.com

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MicroTech is an academic spin-off active in the design, fabrication and commercialisation of innovative devices for laparoscopy (also "hand assisted". Our company will present two devices: a micro pick-up for hand-assisted laparoscopic surgery and a sponge substitute for laparoscopic surgery.

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Website: www.novusrrg.com

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Website: www.obesityhelp.com

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PERFORMANCE MEDICAL DEVICES #1011

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Website: www.pmdevices.com

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Website: www.richardwolfusa.com

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Website: www.salix.com

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SANDHILL SCIENTIFIC **#510**
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Website: www.sandhillsci.com

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Website: www.sierrainst.com

Sierra Scientific Instruments, Inc. produces the ManoScan 360™ High-Resolution Manometry System. A complete esophageal manometry study takes 10 minutes, dramatically reducing patient discomfort, nurse and physician time commitments and costs/revenue ratios. High-resolution manometry (HRM) also provides the highest level of accuracy for full display of esophageal motor function. The ManoView™ analysis takes 8-10 minutes presenting data in both traditional waveform display and the new HRM spatial temporal contours.

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Website: www.simbionix.com

SIMULAB CORPORATION **#611**
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Seattle, WA 98107
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STARION INSTRUMENTS **#721**
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Saratoga, CA 95070
Tel: 408-741-8773 Fax: 408-741-8774
Website: www.starioninstruments.com

Starion's new TLS2, two-speed, hand-held Thermal Ligating Shears utilize Tissue Welding Technology to simultaneously seal and divide tissue during laparoscopic procedures. The TLS2 has been used in a variety of procedures including bariatric procedures, Nissen fundoplications and cholecystectomies.

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Burlington, WI 53105
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Website: www.starsurgical.com

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Website: www.stryker.com

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Website: www.surgicalproductsmag.com

Surgical Products, a product news magazine, is the leading source of new product information for surgeons and other medical and purchasing professionals in all hospitals and surgi-centers across the country. We can also be found on the web at www.surgicalproductsmag.com.

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Website: www.surgrx.com

The 5 mm EnSealTM PTC Tissue Sealing Smart Electrode Technology instruments provide a secure seal of vessels, up to 7 mm, encountered during laparoscopic and open surgery. Vessels are sealed quickly without smoke, char, and with minimal thermal damage to adjacent tissue. Info at www.surgrx.com

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Tel: 978-251-8088 Fax: 978-251-8585
Website: www.suturtek.com

SuturTek's 360o Fascia Closure Device™ protects surgeons, nurses, and patients against accidental suture needlestick injuries and is the only suturing device FDA 510(k) cleared with the safety claim that it "aids in the prevention of suture needlestick injuries."

SYNOVIS SURGICAL INNOVATIONS **#802**
2575 University Avenue
St Paul MN 55114
Tel: 651.796.7300; 1.800.255.4018
Fax: 651.642.9018
Website: www.synovissurgical.com, www.peristripsdry.com

Synovis Surgical Innovations, a division of Synovis Life Technologies, Inc., will spotlight its NEW, FDA-cleared, remodelable staple line reinforcement: Peri-Strips Dry® with Veritas® Collagen Matrix. Peri-Strips Dry with Veritas and Peri-Strips Dry, the company's permanent staple line reinforcement, are used in gastric, small bowel and mesentery applications.

TAUT, INC. **#715**
2571 Kaneville Ct.
Geneva, IL 60134
Tel: 630-232-2507 Fax: 630-232-8005
Website: www.taut.com

Taut, Inc. manufactures the ADAPt Bladeless Laparoscopic Access ports that can eliminate the need for bladed trocars. Taut is the leader in cholangiography products, and also provides a Lap CBDE kit and latex-free wound drainage.

EXHIBITORS

TECNOLOGIA MEDICA DE PUEBLA S.A. DE C.V. **#824**

Calle Sevilla # 111-12. Col. 2da Seccion Gabriel Pastor
Puebla, Mexico 72425
Tel: 52(222) 2438791 Fax: 52(222)2438791
Website www.tecnopue.com, www.simulap.com

We are a new company who has developed a new laparoscopic simulator who doesn´t need a laparoscopy equipment.

TEI BIOSCIENCES INC. **#623**

7 Elkins Street
Boston, MA 02127
Tel: 617-268-1616 Fax: 617-268-3906
Website: www.teibio.com

TEI Biosciences develops, manufactures and markets biologic implants for soft tissue repair and reinforcement. TEI's products are completely remodeled by the body over time into functional tissue. TEI's SurgiMend product is an acellular dermal matrix for hernia repair and muscle flap reinforcement.

TISSUE SCIENCE LABORATORIES **#900-901**

1 Tech Drive Suite 330
Andover, MA 01810
Tel: 800-394-0417 or 978-722-1600
Fax: 978-722-1640
Website: www.tissuescience.com

Tissue Science Laboratories, Inc. provides Permacol® Collagen Implant, a "ready-to-use" biologic implant retains its natural structural integrity, when utilized for open and laparoscopic abdominal wall and hernia repair. Please visit us at Booth #900-901 or contact us at (800) 394-0417

USGI MEDICAL **#405**

1140 Calle Cordillera
San Clemente, CA 92673
Tel: 866-788-8744 Fax: 866-815-8182
Website: www.usgimedical.com

USGI Medical is pioneering incisionless surgery. ShapeLock® has revolutionized diagnosis and treatment of GI diseases. USGI's Endosurgical Operating System features the ShapeLock transPORT® for the delivery of new devices for wound closure and tissue manipulation which will enable NOTES surgery.

VEREFI TECHNOLOGIES, INC. **#1115**

246 S. Market Street
Elizabethtown, PA 17022
Tel: 717-367-2724 Fax: 717-367-2724
Website: www.verefi.com

Verefi Technologies, Inc. produces EndoTower™ and RapidFire/SmartTutor, scientifically validated, cost effective, and reliable virtual reality training devices focusing on basic skills needed for proficient performance of surgical procedures. It will introduce its newest product Head 2 Head at SAGES. Verefi offers multidisciplinary or single specialty consulting for simulation center development and continuing education. New products and services are under development to meet the needs of healthcare educators. Verefi offers full service, custom-designed solutions to the healthcare educator seeking to develop or revamp their training programs using simulation.

VIKING SYSTEMS, INC. **#1008**

7825 Fay Ave., Suite 200
La Jolla, CA 92037
Tel: 858-456-3575 Fax: 858-332-1783
Website: www.vikingsystems.com

Viking Systems, Inc. offers the EndoSite 3Di Digital Vision System, a three-dimensional system that offers high resolution three-dimensional visualization, voice-activated access to clinical information and complete freedom of movement during minimally invasive surgery. The company's unique Head Mounted Display provides an immersive 3D field-of-view with access to additional diagnostic and video images.