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) and the International Pediatric Endosurgery Group (IPEG). The Society of American Gastrointestinal Endoscopic Surgeons (SAGES) is accredited by the ACCME to provide continuing medical education for physicians. SAGES designates this Continuing Medical Education activity for:

- **3.5 credit hours for the Urology Hands-On Course Lecture Only**
- **7.5 credit hours for the Urology Hands-On Course Lecture/Lab**
- **16.50 credit hours for the Scientific Session**

in Category 1 of the Physicians Recognition Award for the American Medical Association.
Note: Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

12th Annual Congress for Endosurgery in Children

Sponsored by the International Pediatric Endosurgery Group

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Website: www.ipeg.org

Los Angeles Convention Center
1201 S. Figueroa Street
Los Angeles, CA

SAGES/IPEG Joint Exhibit Hall Hours

Wednesday, March 12th	Hall Opens	3:00 - 5:00 PM
	Opening Reception	5:00 - 7:00 PM
Thursday, March 13th	Hall Open	10:00 - 2:30 PM
Friday, March 14th	Hall Open	10:00 - 2:30 PM
Saturday, March 15th	Hall Open	10:00 - 1:00 PM

IPEG Posters, Room 408 AB

Tuesday, March 11th	10:00 AM - 6:00 PM
Wednesday, March 12th	8:00 AM - 4:00 PM

IPEG Robotic Learning Center, Room 408 AB

Tuesday, March 11th	10:00 AM - 6:00 PM

SCHEDULE AT A GLANCE:

March 10, 2003

7:00 AM	Registration for Urology Course Participants Only Opens (Room 403AB)
8:00 AM - 12 PM	IPEG Urology Course
12 PM - 12:30 PM	Lunch for Urology Lab attendees only
12:30 PM - 1:00 PM	Shuttles to USC Laboratory for Urology Lab attendees
1:00 PM - 7:30 PM	IPEG Committee Meetings - Invitation Only (Room 407)
3:00 PM - 7:00 PM	Registration Opens Outside Exhibit Hall K

March 11, 2003

6:30 AM	Registration Opens Outside Exhibit Hall K
7:00 AM - 8:00 AM	Meet the Professors Breakfast (Room 406)
8:00 AM - 9:30 AM	Abstract Presentations - Urology
9:30 AM - 10:30 AM	Colonic Disease Panel
10:30 AM - 11:00 AM	Coffee Break
11:00 AM - 11:30 AM	Keynote Lecture - Bradley Rodgers, MD
11:30 AM - 12:30 PM	Minimally Edited Video Session During Lunch
12:30 PM - 1:00 PM	Presidential Lecture - Craig Albanese, MD
1:00 PM - 2:00 PM	Abstract Presentations - Neonatal
2:00 PM - 3:00 PM	Pediatric Surgery Outcomes Panel
3:00 PM - 4:00 PM	Abstract Presentations - Instrumentation, Robotics
4:00 PM - 4:15 PM	Coffee Break
4:15 PM - 6:00 PM	Abstract Presentations - Cancer, Telemedia, Thorascopy
7:00 PM	Shuttles start pick up at Wilshire Grand hotel for the IPEG Main Social Event (ticket required)

March 12, 2003

8:00 AM - 9:30 AM	Abstract Presentations - Colon/Bowel, Foregut
9:30 AM - 10:30 AM	Neonatal Surgery Panel
10:30 AM - 11:00 AM	Coffee Break
11:00 AM - 11:30 AM	Keynote Lecture - Mika Sinanan, MD
11:30 AM - 12:30 PM	Minimally Edited Video Session During Lunch
12:30 PM - 2:00 PM	Abstract Presentations - Basic Science, Neurosurgery, Spleen/Solid Organ, Other
2:00 PM - 3:00 PM	Instruments/Robotics/Ergonomics Panel
3:00 PM - 5:00 PM	Exhibit Hall Opens
5:00 PM - 7:00 PM	Joint Exhibit Reception

March 13, 2003

7:00 AM - 11:00 AM	Joint Course - Bariatric Surgery in the Adolescent Patient
1:00 PM - 5:00 PM	Pediatric Fellows Only Lab Course

IPEG Program Chair: Philip Glick, MD
Urology Hands-On Course Chair: Martin Koyle, MD
Urology Hands-On Course Co-Chair: Spencer Beasley, MD
Pediatric Fellows Hands-On Course Chair: G. Whit Holcomb, MD
Pediatric Fellows Hands-On Course Co-Chair: Marc Levitt, MD

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Urology Hands-On Course Chair: Martin Koyle, MD Urology Hands-On Course Co-Chair: Spencer Beasley, MD

Description of Course:

Each faculty member will give a brief 5 minute PowerPoint or video presentation demonstrating the method or technique they use for their assigned topic. Each session will have a 20-25 minute round table discussion following the presentations. Attendees are encouraged to participate in the discusssion as well. The morning session will be followed by a four hour afternoon porcine model animate laboratory with intensive hands-on training. Expert faculty will instruct participants in a 1:3 faculty:trainee ratio. Enrollment in the lab is limited to 27.

Objectives:

At the completion of this program, the attendee will be:

1) Equipt to make salient clinical judgments relating to minimally invasive surgical options and lapraroscopic techniques for pediatric urological disorders;

2) Able to formulate an appropriate set of options in offering and applying current minimally invasive therapies for vesicoureteral reflux;

3) Prepared to use advanced laparoscopic skills for the operative treatment of pediatric urological abnormalities.

Course Schedule:

8:00 - 8:15 AM	**Introduction**	Martin Koyle, MD
8:15 - 9:00 AM	**Injectables and laparoscopy for vesicoureteral reflux**	
	Deflux–	Andy Kirsch, MD
	Apatite–	Rob Mevorach, MD
	Cartilage–	Tony Caldamone, MD
	Laparoscopy–	C.K. Yeung, MD
	Discussion	
9:00 - 9:45 AM	**Gonads, Internal pelvic organs and Scrotum–Laparoscopy & Alternative Techniques**	
	Hernia/hydrocele–	Thom Lobe, MD
	Varicocele–	Martin Koyle, MD
	Mullerian Remnants–	Alan Shanberg, MD
	Intersex–	Tony Caldamone, MD
	Testis–	Steve Docimo, MD
	Discussion	
9:45 - 10:15 AM	**Break**	
10:15 - 11:30 AM	**Operative Laparoscopy in Pediatric Urology**	
	MACE and Mitrofanoff–	Steve Docimo, MD
	LACE procedue–	Spencer Beasley, MD
	Techniques of Renal Surgery (Nephrectomy, P. Nephrectomy, Pyleoplasty)–	Peter Borzi, MD
	Techniques of Renal Surgery (Nephrectomy, P. Nephrectomy, Pyleoplasty)–	C.K. Yeung, MD
	Adrenalectomy and PD Catheter Insertion–	Azad Najmaldin, MD
	Heminephrectomy and Nephrectomy–	Craig Peters, MD
	Discussion	
11:30 AM - 12:00 PM	**Closing Remarks**	
	Lab attendees depart for Lab on Shuttles	
	Lunch for Lab attendees only	
1:00 - 5:00 PM	**Laboratory**	
	Skills to be practiced: primer on basic lap skills, knot tying and anastamosis, nephrectomy and partial nephrectomy	

Additional Lab Faculty:

Matthew Dunn, MD Jeff Valla, MD

IPEG gratefully acknowledges a generous educational grant in support of this course from

Computer Motion • Karl Storz Endoscopy-America • Richard Wolf Medical Instruments Corp.
United States Surgical/Tyco Healthcare

IPEG also acknowledges an in-kind donation from Ethicon-Endosurgery

Description:

This section of the IPEG Meeting includes panels with invited faculty who will speak on specific topics and sessions of oral & video presentations of abstracts selected by the SAGES Program Committee. It also includes an informal breakfast with the faculty and two minially edited video lunch sessions. Panel information is listed below; information about the abstract & video presentation sessions will be available in the Final Program distributed on-site.

What Is Included:

Fee includes entrance to the session room & poster room on Tuesday & Wednesday, a copy of the Final Program, entrance to the joint Exhibit Hall, Learning Center and Exhibit Reception, continental breakfast and breaks, the Minimally Edited Video lunch sessions, and the Main IPEG Social Event.

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, contraindications, 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).

Breakfast with the Professors

7:00 - 8:00 AM, Tuesday, March 11th, Room 406

An informal session where attendees will be able to sit and discuss the following topics with experts from around the globe.

Objectives:

At the end of this session, participants will have a focused and in-depth analysis of a variety of minimal access surgical techniques, emphasizing technical details and the pros and cons of various approaches and their outcomes.

Pectus Excavatum	Phil Glick & Arnie Coran
Oncology and minimal access surgery	Thom Lobe & Whit Holcomb
Hirschsprung's Disease and Imperforate Anus	Keith Georgeson & Gordon MacKinlay
Adrenalectomy (Transperitoneal and retroperitoneal)	Craig Albanese & Jeff Valla
Dismembered Pyelopasty	Craig Peters & CK Yeung
Partial and Total Splenectomy	Klaas Bax & Vincenzo Jasonni
Antireflux Surgery	Philippe Montupet & Steve Rothenberg

This session is made possible in part by the support of our Silver Level Sponsor, Computer Motion.

Scientific Session 1: Urology

8:00 AM - 9:30 AM, Room 403AB

Moderators: Spencer Beasely, MD & Craig Peters, MD

s01 "LONG-TERM FOLLOW-UP ON RETROPERITONEOSCOPIC DISMEMBERED PYELOPLASTY FOR UPJ OBSTRUCTION IN INFANTS AND CHILDREN" C.K.Yeung1, J.D.Y.Sihoe1, H.Olsen2, T.M.Jorgensen2, K.H.Lee1, Y.H.Tam1, J.C.Djurhuus2 Division of Paediatric Surgery1, Department of Surgery, Chinese University of Hong Kong, Prince of Wales Hospital, Hong Kong, China, and Institute of Enuresis and Research Centre2, University of Aarhus, Skejby Hospital, Aarhus, Denmark

s02 "A SIMPLIFIED TECHNIQUE FOR LAPAROSCOPIC EXTRAVESICAL URETERAL REIMPLANTATION IN THE PORCINE MODEL" D. Duane Baldwin M.D., Gregory L. Alberts M.D., S. Duke Herrell M.D., Jennifer A. Dunbar M.D., Richard L. Roberts M.D., John W. Brock III M.D., Mark C. Adams M.D., Elspeth M. McDougall M.D., John C. Pope IV M.D. Division of Pediatric Urology and Department of Pathology, Vanderbilt Children's Hospital, Nashville, TN. Department of Urology, University of California Irvine Medical Center, Orange, CA.

s03 "ENDOSCOPIC NEPHRECTOMY IN CHILDREN: IS RETRO THE WAY FORWARD?" Jimmy P.H. Lam, Gordon A. MacKinlay, & Fraser D. Munro Department of Paediatric Surgery, Royal Hospital for Sick Children, Edinburgh, UK.

s04 "OVARY SPARING SURGERY FOR COMPLEX OVARIAN LESIONS IN GIRLS: MIS TECHNIQUE AND BENEFITS" Thichen K Lama M.Ch., PKE Koh M.D., CH Chui M.D., TL M.D., SF Loh M.D., AS Jacobsen M.D. Departments of Pediatric Surgery and Reproductive Medicine, KK Women's and Children's Hospital, Singapore

s05 "ONE-STAGE LAPAROSCOPIC HEMI-NEPHROURETERECTOMY WITH EXCISION OF URETEROCELE AND URETERIC REIMPLANTATION FOR DUPLEX KIDNEYS WITH NON-FUNCTIONING UPPER MOIETIES AND COMPLICATING ECTOPIC URETEROCELES" Yeung CK, Tam YH, Sihoe JDY, Lee KH. Division Of Paediatric Surgery, Department Of Surgery, Chinese University Of Hong Kong, Prince Of Wales Hospital, Hong Kong, China

s06 "TRANSVESICOSCOPIC BLADDER NECK RECONSTRUCTION WITH CARBON DIOXIDE PNEUMOVESICUM FOR PERSISTENT URINARY INCONTINENCE AFTER AUGMENTATION CYSTOPLASTY: A NOVEL TECHNIQUE" C.K.Yeung, J.D.Y Sihoe, K.H.Lee, Y.H.Tam, F.K.Y.Sit. Division Of Paediatric Surgery, Department Of Surgery, Chinese University Of Hong Kong, Prince Of Wales Hospital, Hong Kong.

s07 "LAPAROSCOPIC REMOVAL OF PERSISTENT MULLERIAN DUCT IN PEDIATRIC AGE" MARIO LIMA, MARCELLO DOMINI, GIOVANNI RUGGERI, ANTONIO AQUINO, MICHELE LIBRI, CLAUDIO ANTONELLINI, MIRKO BERTOZZI, PAOLO MESSINA DEPARTMENT OF PEDIATRIC SURGERY, UNIVERSITY OF BOLOGNA, ITALY

s08 "VIDEO OF LAPAROSCOPIC-ASSISTED PERCUTANOUS INGUINAL HERNIAL CLOSURE IN CHILDREN" B. Banieghbal MB Division of Paediatric Surgery, CH Baragwanath Hospital, University of the Witwatersrand, Johannesburg, South Africa

s09 "COMBINED UNILATERAL LAPAROSCOPIC NEPHROURETERECTOMY AND CONTRALATERAL URETERAL REIMPLANT IN AN INFANT WITH REFLUX NEPHROPATHY" J. Paul Yurkanin, M.D., Andrew L. Freedman, M.D., and Gerhard J. Fuchs, M.D. Cedars-Sinai Endourology Institute, Los Angeles, CA, USA

s10 "A NEW APPROACH TO THE INTRAABDOMINAL TESTIS: TWO STAGE LAPAROSCOPY WITH GUBERNACULAR PRESERVATION." Kasper S. Wang, M.D., Cathy E. Shin, M.D., Donald B. Shaul, M.D. Division of Pediatric Surgery, Childrens Hospital Los Angeles, 4650 Sunset Blvd., Los Angeles, CA 90027

s11 "LAPAROSCOPIC TREATMENT FOR HYDROCELE OF THE CORD OR SCROTUM" Hiroo TAKEHARA MD, Hiroki ISHIBASHI MD, Masaki OHSHITA MD and Seiki TASHIRO MD Department of Digestive and Pediatric Surgery, University of Tokushima, School of Medicine, Tokushima, JAPAN

IPEG acknowledges a generous educational grant in support of this session by United States Surgical/Tyco Healthcare

Panel 1: Colonic Disease

9:30 - 10:30 am, Room 403 AB

Objectives:

At the end of this session, participants will have an in-depth knowledge of the indications, technique and outcomes of minimal access surgery for patients with a variety of colonic diseases, with emphasis on inflammatory bowel disease

Moderator: Peter Borzi, MD

a. Ulcerative Colitis/Familial Polyosis, Keith Georgeson, MD

b. Chrohns Disease, Barry Salky, MD

c. Discussion

10:30 - 11:00 am - Coffee Break

This Coffee Break is made possible in part by the support of our Bronze Level Donors
General Surgery News • Intuitive Surgical • Starion Instruments • Taut, Inc.

Robotic Learning Center

10:00 AM - 6:00 PM, Poster Room 408 AB

Faculty: Celeste Hollands, MD and Steven Rothenberg, MD

Description:

These stations will expose learners to a structured learning environment while using robots. Attendees will be put through a series of drills to learn skills related to robotics.

Educational Objectives:

- To become familiar with the basic laparoscopic skills as identified to robotics;
- To inform attendees about the benefits and drawbacks of using robotics in their institutions.

This educational activity is made possible in part by the generous support of
Computer Motion and Intuitive Surgical.

Keynote Lecture

11:00 - 11:30 am, Room 403AB

HISTORY OF THORACOSCOPY

Bradley M. Rodgers, MD

Professor of Surgery and Clinical Pediatrics, Division Head,
Division of Pediatric Surgery, Charlottesville, VA

We are honored to welcome Dr. Rodgers as a keynote speaker. Dr. Rodgers received his medical degree from Johns Hopkins University, and completed his residency in general and cardio-thoracic surgery at Duke University. He performed his fellowship at Montreal Children's Hospital. His clinical interests include general and thoracic pediatric surgery and pediatric surgical oncology, and his research interests have been focused on minimally invasive surgery techniques in pediatrics. Dr. Rodgers currently serves on the editorial board of IPEG's journal, Pediatric Endosurgery & Innovative Techniques.

SAVE THE DATE

IPEG's 13th Annual Congress for Endosurgery in Children

May 5–9, 2004, Maui, Hawaii

Minimally Edited Videos During Lunch

11:30 am - 12:30 pm, Room 403AB

Moderators: Thom Lobe, MD & Oliver Reinberg, MD

Description:

15 minute videos on interesting cases - the faculty member will moderate the video in person and answer questions.

Objectives:

At the end of this session, participants will have viewed and learned some techniques used to accomplish minimal access surgery for both routine and extremely challenging disorders.

1. **Urologic Case,** Craig Peters, MD
2. **Lung Resection,** Craig Albanese, MD
3. **Fundoplication,** Mark Wulkan, MD
4. **Esophageal Atresia,** Klaas Bax, MD

Presidential Lecture

12:30 – 1:00 PM, Room 403 AB

Craig Albanese, MD

Professor of Surgery, Chief of Pediatric Surgery,
Director of Pediatric Surgical Services,
Stanford University Medical Center, Stanford, CA

Scientific Session 2: Neonatal

1:00 - 2:00 PM, Room 403AB

Moderators: Jacob Langer, MD & Klaas Bax, MD

s12 "Minimal Access Fetal Surgery for Twin-to-twin Transfusion Syndrome (TTTS)" Joseph G. Bussey, II, MD, Francois I. Luks, M.D., Stephen R. Carr, M.D., Michael Plevyak, M.D., Thomas F. Tracy, M.D. Division of Pediatric Surgery and Program in Fetal Medicine, Hasbro Children's Hospital, Brown Medical School, Providence, Rhode Island

s13 "LAPAROSCOPIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA" Richard J. Hendrickson, MD, Steven S. Rothenberg, MD, David A. Partrick, MD The Children's Hospital/The University of Colorado Health Science Center and The Hospital for Infants and Children at Presbyterian/St. Luke's

s14 "THORACOSCOPIC REPAIR OF AN ISOLATED INTRA-THORACIC 'H-TYPE' TRACHEOESOPHAGEAL FISTULA (TEF) IN A NEWBORN USING TRANS-FISTULA GUIDEWIRE: A SURGICAL FIRST" Erika Rager M.D., Margaret Douglas M.D., J. Duncan Phillips M.D. Department of Surgery, School of Medicine, University of North Carolina, Chapel Hill, North Carolina and Department of Radiology, WakeMed Hospital, Raleigh, North Carolina

s15 "MINIMAL ACCESS SURGERY IN NEONATES WITH CARDIAC ANOMALIES." David C. van der Zee*, MD., PhD., Klaas (N)M.A. Bax*, MD.,PhD., N.Sreeram**,MD.,PhD., Inge van Tuijl***, MD. Dept. Pediatric Surgery*, Dept. Pediatric Cardiology**, Dept. Pediatric Anaesthesiology***, Wilhelmina Children's Hospital, University Medical Center, Utrecht, The Netherlands

s16 "MINIMALLY INVASIVE SURGERY IN NEONATES: THE FIRST DECADES EXPERIENCE" Steven S Rothenberg M.D., Jack HT Chang M.D., John F Bealer M.D. Mother and Child Hospital at Presbyterian/St Lukes

s17 "LAPAROSCOPIC-ASSISTED PYLOROMYOTOMY FOR HYPERTROPHIC PYLORIC STENOSIS" S. Al-Hindi, B. Banieghbal MB Division of Paediatric Surgery, CH Baragwanath Hospital, University of the Witwatersrand, Johannesburg, South Africa

s18 "LAPAROSCOPY FOR ABDOMINAL CYSTS IN NEONATES" Hideki Soh, MD, Takuya Kimura, MD, Masafumi Wasa, MD, Noriaki Usui, Shinkichi Kamata, MD and Kiyokazu Nakajima, MD. Department of Pediatric Surgery, Osaka University Graduate School of Medicine, Osaka, Japan

Panel 2: Pediatric Surgery Outcomes

2:00 - 3:00 PM, Room 403 AB

Objectives:

At the end of this session, participants will be able to critically analyze the existing outcome data for select procedures and have learned where the deficiencies in minimal access surgery outcomes lie.

Moderator: Craig Albanese, MD

a. Nissen fundoplication project, Mac Harmon, MD

b. Undscended Testes project, Ciro Esposito, MD

c. Meta Analysis of the Literature, Jacob Langer, MD

d. Discussion

Scientific Session 3: Instrumentation, Robotics

3:00 - 4:00 PM, Room 403AB

Moderators: Celeste Hollands, MD & Yuzhou Lee, MD

s19 "ULTRASONIC TRIPLE WELDING, A NEW TECHNIQUE FOR SIMULTANEOUS OCCLUSION AND SECTION OF HILAR VESSELS IN ENDOSCOPIC SURGERY" K Schaarschmidt, A Kolberg-Schwerdt, M Lempe, F Schlesinger Helios Centre of Pediatric Surgery, Berlin-Buch, Germany

s20 "A NEW OPTION FOR LIVER RETRACTION IN LAPAROSCOPIC ANTIREFLUX SURGERY IN CHILDREN" C Garcia H, L Carvajal F, JC DueÅas, H Vera Hospital Infantil Privado, Mexico D.F. Mexico

s21 "TECHNIQUES FOR ACHIEVING BENEFITS FROM COMPUTER ASSISTED ROBOT ENHANCED SURGERY (CARES) IN NEWBORNS" Attila Lorincz M.D., Michael Klein M.D., Scott Langenburg M.D. Children`s Hospital of Michigan, Detroit, Michigan

s22 "MINIMALLY INVASIVE MANAGEMENT OF GASTROINTESTINAL FOREIGN BODIES" Daniel J. Ostlie, M.D., Troy L. Spilde, M.D., George W. Holcomb, III, M.D., And Walter S. Andrews, M.D. Department Of Pediatric Surgery, Children's Mercy Hospital, Kansas City, MO USA

s23 "FURTHER DEVELOPMENT OF THE MASTER-SLAVE COMBINED MANIPULATOR AND ITS SUPPORT SYSTEM" Yasuhide Morikawa, M.D., Soji Ozawa, M.D., Toshiharu Furukawa, M.D., Masaki Kitahjima, M.D., Kazuo Nakazawa, Ph.D., Makoto Jinno, Ph.D., Nobuto Matsuhira, Ph.D., Takamitsu Sunaoshi, Ph.D., Takehito Hato, Ph.D., Toyomi Miyagawa, Ph.D. 1. Department of Surgery, Keio University School of Medicine, 2. Department of System Design Engineering, Faculty of Science and Technology, Keio University, 3. Corporate R&D Center, Toshiba Corporation

s24 "APPLICATION OF A SURGICAL ROBOT TO OPEN MICROSURGERY: THE EQUIPMENT" Colin G. Knight, M.D., Atilla Loricz, M.D., Kelly Gidell, R.N., Scott Langenburg, M.D., Michael Klein, M.D. The Maxine & Stuart Frankel Foundation Computer-Assisted Robotic-Enhanced Surgery Program at the Children's Hospital of Michigan. Detroit, Michigan, USA

s25 "ROBOTIC-ASSISTED PYLOROMYOTOMY" Celeste Hollands, MD Anthony Johnson Erica Jefferson Laramie Dixey RN The Children's Hospital of Buffalo, Buffalo New York USA Louisiana State University Health Sciences Center, Shreveport Louisiana USA

s25a "WORKSPACE ESTIMATION FOR TRACHEO-ESOPHAGEAL FISTULA REPAIR" John Reardon, Attila Lorincz, M.D., Steven Rothenberg M.D., Daniel Sanchez, Scott Hammond, Computer Motion, Inc., Santa Barbara, CA; Children's Hospital of Michigan; The Hospital For Infants and Children At Presbyterian\St. Lukes, Denver, CO

IPEG acknowledges a generous educational grant in support of this session by Fleet Pharmaceuticals

4:00 - 4:15 PM - Coffee Break

Scientific Session 4: Cancer, Telemedia, Thoracoscopy

4:15 - 6:00 PM, Room 403AB

Moderators: Peter Borzi, MD & Philip Glick, MD

s26 "PRIMARY THORACOSCOPIC GROSS TOTAL RESECTION OF NEUROBLASTOMA" James M. DeCou M.D., Marc G. Schlatter M.D., Deanna S. Mitchell M.D., Randel S. Abrams M.D. Departments Of Pediatric Surgery And Pediatric Hematology/Oncology, DeVos Children's Hospital, Grand Rapids, Michigan, And Department Of Pediatric Surgery, Children's Hospital, Greenville, South Carolina.

s27 "LAPAROSCOPIC ASSISTED EXCISION OF SACROCOCCYGEAL TERATOMA IN AN INFANT" KH Lee, CK Yeung, YH Tam, J Sihoe Division of Paediatric Surgery, Department of Surgery, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong SAR, China.

s28 "INTERNET BASED TELEMEDICINE IN PEDIATRIC SURGERY" Joselito G. Tantoco MD, Sle Rupisan MD, Beda Espineda MD, Bayani Tecson MD, Celeste Hollands MD, Guy F. Brisseau MD, Michael G. Caty MD, Philip L. Glick MD. Department of Pediatric Surgical Services, Children's Hospital of Buffalo, Miniature Access Surgery Teaching, Training, Robotic, and Research Center, SUNY at Buffalo, New York, USA, And The Philippine Children's Medical Center, Quezon City, Philippines

s29 "THE ANTERIOR ENDOSCOPIC APPROACH FOR CORRECTION OF SPINAL ANOMALIES" George W. Holcomb, III, MD, MBA, Neil E. Green, MD,Greg A. Mencio, MD Vanderbilt University Medical Center, Nashville, TN, USA

s30 "THORASCOPIC TRACHEOESOPHAGEAL FISTULA LIGATION IN LONG GAP ESOPHAGEAL ATRESIA" Richard J. Hendrickson, MD, David A. Partrick, MD The Children's Hospital/The University of Colorado Health Science Center, Department of Pediatric Surgery, Denver, Colorado

s31 "EXPERIENCE WITH THORACOSCOPIC ANTERIOR SPINE PROCEDURES IN CHILDREN" Richard Hendrickson M.D., Steven Rothenberg M.D.,Mark Erickson M.D., John Bealer M.D., Jack Chang M.D., Robert Eilert M.D., Gerard Glancy M.D.,Gaia Georgeopolous M.D. Mother and Child Hospital at P/SL, The Children's Hospital, Denver Colorado

s32 "THORACOSCOPIC FINAL RECONSTRUCTION AFTER KIMURA'S EXTRATHORACIC ESOPHAGEAL ELONGATION FOR LONG GAP ESOPHAGEAL ATRESIA." Marcelo Martinez Ferro MD National Pediatric Hospital J.P.Garrahan. Buenos Aires. Argentina

s33 "ENDOSCOPIC SERIAL EXTERNAL RIB CORTEX EXCISION FOR CORRECTION OF THE PROMINENT COSTAL ARCH IN THORACOSCOPIC NUSS FUNNEL CHEST REPAIR IN ADOLESCENTS" Klaus Schaarschmidt, A Kolberg-Schwerdt, G Dimitrov, M Lempe, U Jaeschke, J Strauss Helios Centre of Pediatric Surgery / Pediatric Anaesthesia, Berlin-Buch, Germany

s34 "USE OF ENERGY DEVICES IN THORACOSCOPY: QUANITATION OF LUNG SEALING CAPACITY" Michael V. Tirabassi, MD, Gregory T. Banever, MD, David B. Tashjian, MD, Kevin P. Moriarty, MD Division of Pediatric Surgery, Baystate Medical Center, Tufts University School of Medicine, Pioneer Valley Life Sciences Research Initiative, Springfield, MA, USA

s35 "A NEW USEFUL TOOL FOR THE NUSS PROCEDURE" Micha Bahr, Stefan Beyerlein, Felix Schier Department of Pediatric Surgery, University Medical Centre Jena, Germany

s36 "ECHINOCOCCUS GRANULOSIS OF THE LUNG: TREATMENT BY THORACOSCOPY" Fouad Ettayebi M.D , Mohamed Benhammou M.D Department of Pediatric Surgery, Children's Hospital of Rabat, Morocco

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

IPEG Social Event for all attendees and guests (Ticketed Event)

"South of the Border - Hollywood Style" **7:00 pm - 10:00 pm**

Shuttles will begin pickup at the Wilshire Grand Hotel at 7:00 pm and will run continuously through the night. You must have your badge and your ticket to board the shuttle.

IPEG Business Meeting

7:30 - 8:00 AM, Room 403AB

President: Craig Albanese, MD

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

Scientific Session 5: Colon/Bowel, Foregut

8:00 - 9:30 AM, Room 403AB

Moderators: Philippe Montupet, MD & Mac Harmon, MD

s37 "LAPAROSCOPIC RECTOPEXY FOR RECTAL PROLAPSE IN CHILDREN" Fouad Ettayebi M.d , Mohamed Benhammou M.d Department of Pediatric Surgery, Children's Hospital Rabat, Morocco

s38 "VIDEO OF LAPAROSCOPIC APPENDECTOMY FOR APPENDICAL MASS" B. Banieghbal MB Division of Paediatric Surgery, CH Baragwanath Hospital, University of the Witwatersrand, Johannesburg, South Africa

s39 "LAPAROSCOPIC LADD PROCEDURE FOR CORRECTION OF PEDIATRIC MALROTATION: INITIAL EXPERIENCE" Timothy Sadiq MD, J. Duncan Phillips MD Department of Surgery, University of North Carolina, North Carolina Children's Hospital, Chapel Hill and WakeMed Hospital, Raleigh

s40 "LAPAROSCOPIC DUHAMEL PROCEDURE: MANAGEMENT OF 55 CASES" De Lagausie Pascal (Md), Carricaburru Elisabeth (MD), Ferkadji Latifa (MD), Huaut Olivier (Md), Aigrain Y (PhD). Departments of Surgery, Pathology and Anesthesiology. Hospital Robert Debro., PARIS. France.

s41 "A NOVEL TREATMENT OF CONGENITAL DUODENAL WEB: IMAGE-GUIDED TREATMENT OF CONGENITAL AND ACQUIRED STENOSIS IN CHILDREN." I.R. Diamond BSc, A. Hayes-Jordan MD, P. Chait MD, M. Temple MD, D. Gibbs MD, P.C.W. Kim MD. Division of General Surgery and Department of Diagnostic Imaging. The Hospital for Sick Children. Toronto, Ontario, Canada.

s42 "LAPAROSCOPIC ASSISTED OPERATION FOR JEJUNAL STENOSIS IN INFANT" Masashi Kurobe, MD, Masaki Kanai, MD, Jyoji Yoshizawa, MD, Yoji Yamazaki, MD Department of Surgery, The Jikei University School of Medicine, Tokyo, Japan

s43 "DEFINITIVE LAPAROSCOPIC TREATMENT OF EXTENDED HIRSCHSPRUNG'S DISEASE OR TOTAL COLONIC FORM" Bonnard Arnaud (MD), Berrebi Dominique (MD), Laudenbach Vincent (Md), Aigrain Yves (Ph.d), De Lagausie Pascal (MD). Department of Surgery, Pathology, Anesthesiology and Radiology. Hospital Robert Debro. PARIS, FRANCE.

s44 "STOPPING DUODENAL STENOSIS IN CHILDHOOD LAPAROSCOPIC TREATMENT" F.J.Berchi; I.Cano; M.I. Benavent; E. Portela; J.Anton-Pacheco; A. Garcia Vazquez HUMI, Dept. of Paediatric Surgery, University Complutense, Madrid/Spain, Chief: F.J. Berchi

s45 "FAIL TO PREPARE, PREPARE TO FAIL - THE INTRATHORACIC STOMACH." Alistair C Dick MD. Peter Borzi MD Mater Childrens Hospital Brisbane

s46 "PUSHING THE ENVELOPE FOR MINIMALLY INVASIVE SURGERY IN CHILDREN" Anthony J Bufo MD St. Mary's Medical Center, Section of Pediatric Surgery, West Palm Beach, FL.

s47 "ADVANTAGES OF LAPAROSCOPIC PYLOROMYOTOMY OVER UMBILICAL OR RUQ APPROACHES" Thomas Inge, MD, PhD, Terri Byczkowski, Ph.D., Edward Donovan, MD Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

IPEG acknowledges a generous educational grant in support of this session by Karl Storz Endoscopy-America

Panel 3: Neonatal Surgery

9:30 - 10:30 AM, Room 403AB

Objectives:

At the end of this session, participants will have learned the state of the art techniques used to repair the most difficult neonatal disorders

Moderator: Thom Lobe, MD

a. Esophageal disorders, Marcello Ferro, MD

b. Inguinal Hernia Repair, Yuzhou Lee, MD

c. Laparoscopic Approach in Persistent Hyperinsulinemic Hypoglycemia, Klaas Bax, MD

d. Discussion

10:30 - 11:00 - Coffee Break

This Coffee Break is made possible in part by the support of our Bronze Level Donors
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Keynote Lecture

11:00 - 11:30 AM, Room 403AB

Innovative Laparoscopic Skills Assessment

Mika Sinanan, MD

Professor of Surgery, University of Washington; Co-Director, Center for Videoendoscopic Surgery, Seattle, WA

We are honored to welcome Dr. Sinanan as a keynote lecturer. Dr. Sinanan received his PhD. degree from the University of British Columbia, received his medical degree from Johns Hopkins University, and completed his residency at the University of Washington. He holds an adjunct appointment in Electricial Engineering. One of Dr. Sinanan's research interests is in the objective measurement of surgical skill, especially that required to perform minimally invasive surgery. He will speak about the BlueDRAGON system, a novel device and a methodology derived from another area of complex pattern measurement, namely voice recognition. This subject should be of great interest to all of us who struggle to teach and certify proper laparoscopic techniques to our residents and fellows.

Minimally Edited Videos During Lunch

11:30 AM - 12:30 PM, Room 403AB

Moderators: Steven Rothenberg, MD & Ciro Esposito, MD

Description:

15 minute videos on interesting cases - the faculty member will moderate the video in person and answer questions.

Objectives:

At the end of this session, participants will have viewed and learned some techniques used to accomplish minimal access surgery for both routine and extremely challenging disorders.

5. **Pull-thru for Hirschsprung's -** Mike Caty, MD
6. **Pull-thru for Imperforate Anus -** Thomas Inge, MD
7. **Laparoscopic Pylormyotomy -** Marc Levitt, MD
8. **Duodenoduodenostomy -** Steven Rothenberg, MD

Scientific Session 6: Basic Science, Neurosurgery, Spleen/Solid Organs, Other

12:30 - 2:00 PM, Room 403AB

Moderator: Marcello Ferro, MD

s48 "CO2 PNEMOPERITONEUM IN RATS : BACTERIALTRANSLOCATION AND XANTHIN-OXIDASE ALTERATION IN SMALL BOWEL" J. Schleef M.D., S v. Bismarck, G. Feierl M.D.*, Ph.D., A. Kuess , M.E. Hollwarth M.D. Department of Pediatric Surgery, *Department of Microbiology, Graz, Austria

s49 "MINIMAL INVASIVE SURGERY IN CHILDREN CAUSES LESS ACTIVATION OF THE IMMUNE SYSTEM (LYMPHOCYTE SUBPOPULATION AND HLA DR+ MONOCYTES)" Martina Heinrich MD, Bernd H. Belohradsky MD, Holger Till MD Department of Paediatric Surgery, Dr. v. Haunersches Kinderspital, University of Munich, Munich, Germany

s50 "A PROSPECTIVE RANDOMIZED STUDY OF THE HAEMODYNAMIC EFFECTS OF CARBON DIOXIDE PNEUMOPERITONEUM (CDP) DURING LAPAROSCOPY IN INFANTS USING TRANSESOPHAGEAL ECHOCARDIOGRAPHY" Paul W. Wales MD, David A. Rowney MD, Bruno Bissonette MD, Jeffrey F. Smallhorn MD, Sharifah A.I. Mokhtar MD, Peter C.W. Kim MD, Jacob C. Langer MD The Division of General Surgery, Department of Anaesthesia and Division of Cardiology, The Hospital for Sick Children, Toronto, Ontario, Canada

s51 "A HOME-MADE MINIMAL ACCESS SURGICAL SKILLS STATION" Alex Lee MB ChB, Azad Najmaldin MS Department of Paediatric Surgery, Leeds Teaching Hospitals NHS Trust, Leeds, England, United Kingdom.

s52 "DOES POSTGRADUATE YEAR (PGY) LEVEL OF SURGICAL TRAINING AFFECT BASIC LAPAROSCOPIC SKILL ACQUISITION IN THE LABORATORY?" A Jensen B.S., H Grewal M.D., R Milner B.S., J Gaughan Ph.D., R Rolandelli M.D. Section of Pediatric Surgery, Department of Surgery, Temple University School of Medicine, Philadelphia, PA

s53 "LAPAROSCOPY FOR THE TREATMENT OF FEMALES WITH ANORECTAL MALFORMATIONS (ARM)" Maria Bailez, MD,J. Solana Pediatric Surgery , J.P.Garrahan Htal BS AS. Argentina

s55 "DEDICATED INTELLIGENT OPERATING ROOMS FOR CHILDREN" Joselito G. Tantoco MD, Mark Burke MD, Drew Balcombe BS, Celeste Hollands MD, Guy F. Brisseau MD, Michael G. Caty MD, Philip L. Glick MD. Department of Pediatric Surgical Services, The Children's Hospital of Buffalo, and The Miniature Access Surgery Teaching, Training, Robotic, and Research Center, State University of New York at Buffalo, Buffalo, New York, USA

s56 "LAPAROSCOPIC PORTOENTEROSTOMY FOR BILIARY ATRESIA. TECHNICAL ASPECTS AND INITIAL CLINICAL EXPERIENCE OF AN ENCOURAGING TECHNIQUE." Marcelo Martinez Ferro Md and Horacio Questa Md. Deartment of Pediatric Surgery, National Pediatric Hospital J.p. Garrahan. Buenos Aires. Argentina.

s57 "THE PLACE OF LAPAROSCOPY IN LIVER PEDIATRIC SURGERY: PRELIMINARY EXPERIENCE OF 9 CASES" Guillaume Podevin M.D., Christine GRAPIN Ph.D., Frederic HAMEURY M.D., Carmen CAPITO M.D., Marc David LECLAIR M.D., Caroline CAMBY M.D., Jacques PAINEAU Ph.D., Yves HELOURY Ph.D, Service de Chirurgie Infantile, Hôpital Mère-Enfant, CHU de Nantes. Service de Chirurgie Viscérale Pédiatrique, Hôpital Armand Trousseau, Paris. Service de Chirurgie Pédiatrique, Hôpital La Milétrie, Poitiers. FRANCE.

s58 "INDICATION AND TECHNIQUE OF LAPAROSCOPIC SUBTOTAL 80-90% SPLENECTOMY FOR SPHEROCYTOSIS OR IMMUNODEFICIENCY IN EXCESSIVELY TRANSFUSION DEPENDENT PRESCHOOL CHILDREN" Klaus Schaarschmidt, A Kolberg-Schwerdt, M Lempe, F Schlesinger Helios Centre of Pediatric Surgery, Berlin-Buch, Germany

Panel 4: Instruments/Robotics/Ergonomics

2:00 - 3:00 PM, Room 403AB

Objectives:

At the end of this session, participants will have learned the state of the art in bioengineering, biophysics, and ergonomics for minimal access surgery.

Moderator: Steven Rothenberg, MD

- **a. The State of Pediatric Robotic Surgery,** Celeste Hollands, MD
- **b. Energy Devices for Coagulation,** Phil Glick, MD
- **c. Minature Instrumentation for Thyroid & Parathyroid Surgery,** Olivier Reinberg, MD
- **d. Ergonomics–Overview of Challenges in Laparoscopic Surgery,** Ramon Berguer, MD
- **e. Discussion**

EXHIBIT HALL OPEN AT 3:00 PM

Reception in the Exhibit Hall

5:00 - 7:00 PM

All registrants and registered guests are invited to attend. You must bring your badge in order to attend this event.

Bariatric Surgery in the Adolescent Patient

7:00 AM - 11:00 AM, Room 150/151

Course Co-Chairs: Philip Schauer, MD (SAGES), Steven Rothenberg, MD (IPEG)

Course Description:

This course will focus on the emerging field of minimally invasive bariatric surgery and its role in the adolescent patient. The speakers will focus on how to evaluate the adolescent patient, and how to establish a bariatric program. Technical issues involved will also be addressed, including, "What is the most appropriate operation in the adolescent?" This course will attempt to answer "If" and "How" minimally invasive bariatric surgery should be practiced in the adolescent patient.

Objectives:

At the conclusion of this activity, the participant will be able to

- Define the etology of obesity in children;
- Discuss the arguments about whether bariatric surgery is appropriate for adolescents;
- Construct a task list on how to set up a bariatric program;
- Differentiate the technical issues between the adolescent and the adult patient;
- Understand the current outcomes of the different procedures.

Course Schedule:

Moderator: Philip Schauer, MD		
7:00 - 7:15 AM	**Current Status of Adult and Adolescent Bariatric Surgery**	Philip Schauer, MD
7:15 - 7:30 AM	**Why Do We Have Obese Children?**	Carroll M. Harmon, MD
7:30 - 7:45 AM	**Adolescent Psychology and Bariatric Surgery**	Margaret Stuber, MD
7:45 - 8:00 AM	**Perioperative Evaluation of the Bariatric Patient**	Eric DeMaria, MD
8:00 - 8:15 AM	**Establishing a Programmatic Approach to Bariatric Surgery**	Thomas Inge, MD
8:15 - 8:30 AM	**Lessons Learned from Open Bariatric Surgery**	Bruce Schirmer, MD
8:30 - 8:45 AM	**Discussion/Q&A**	
8:45 - 9:00 AM	**BREAK**	
Moderator: Steve Rothenberg, MD		
9:00 - 9:15 AM	**Techniques of Laparoscopic Gastric Restriction Procedures (band & VBG)**	Natan Zundel, MD
9:15 - 9:30 AM	**Techniques of Laparoscopic Gastric Bypass**	Daniel Jones, MD
9:30 - 9:45 AM	**Techniques of Laparoscopic Malabsorption Procedures**	Michel Gagner, MD
9:45 - 10:00 AM	**Complications of Bariatric Surgery**	Timothy Kane, MD
10:00 - 10:15 AM	**Why Obesity in Children and Adolescents SHOULD NOT Be Treated Surgically**	Thom Lobe, MD
10:15 - 10:30 AM	**Why Obesity in Children and Adolescents SHOULD Be Treated Surgically**	Keith Georgeson, MD
10:30 - 10:50 AM	**Discussion/Q&A**	
10:50 - 11:00 AM	**Concluding Remarks**	Steven Rothenberg, MD

IPEG gratefully acknowledges a generous educational grant in support of this course from Karl Storz Endoscopy-America, Inc.

1:00 - 5:00 PM, Petree Hall C

Course Chair: G. Whit Holcomb, MD, Course Co-Chair: Marc Levitt, MD

Course Description:

The lab will involve teaching and practicing of advanced skills as components of advanced pediatric MIS cases. The operations that will be performed include a bowel anastomosis, an esophageal anastomosis, a pulmonary resection, and pyloroplasty. Key skills that are required to perform these operations will be taught and practiced. These include suturing, knot-tying, controlling vascular pedicles, anastomosing segments of intestine, mobilizing the colon, and resecting pulmonary segments. Principles of case set-up, patient and team positioning, and instrumentation will be stressed. There will be three trainees and one instructor at each animate station, and each station will be equipped with a telescope, monitor, tower, insufflator, appropriate pediatric MIS instruments, and energy sources.

Objectives:

- To learn the key elements of performing advanced pediatric MIS, such as key skill sets, case set-up, principles of patient and team positioning, and appropriate instrumentation;
- To acquire suturing and knot-tying skills;
- To learn to control a vascular pedicle, such as ligation of the renal vessels and ligation of a patent ductus arteriosus;
- To learn the technique of intestinal anastomosis;
- To learn how to mobilize the colon, and to perform a colonic pull-through;
- To learn the technique of thoracoscopic pulmonary biopsies, wedge resections, and lobectomies;
- To learn the technque of esophageal anastomosis, simulating repair of esophageal atresia.

Laboratory Faculty

Craig Albanese, MD
Klaas Bax, MD
Peter Borzi, MD
Keith Georgeson, MD
Celeste Hollands, MD
Thomas Inge, MD
Timothy Kane, MD
Thom Lobe, MD
Marcelo Martinez-Ferro, MD
Philippe Montupet, MD
Steven Rothenberg, MD
Raleigh W. Thompson, MD
Mark Wulkan, MD
CK Yeung, MD

IPEG gratefully acknowledges a generous educational grant in support of this course from
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Klaas Bax, MD, Head, Department Of Pediatric Surgery, Professor Of Pediatric Surgery, EA Utrecht, Netherlands

Spencer W. Beasley, MD, Clinical Director, Department Of Paediatric Surgery, University Of Otago & Christchurch Paediatric Surgery/Urology, Christchurch, New Zealand

Ramon Berguer, MD, Associate Professor, UC Davis Dept. Of Surgery, Martinez CA

Peter Borzi, MD, Associate Professor, University Of Queensland, Brisbane, Australia

Anthony A. Caldamone, MD, Professor Of Surgery & Pediatrics; Head, Division Of Pediatric Urology At Hasbro Children's Hospital, Providence RI

Michael G. Caty, MD, Associate Professor Of Surgery & Pediatrics, State University Of New York At Buffalo, Buffalo NY

Arnold G. Coran, MD, Professor Of Surgery, Head, Section Of Pediatric Surgery, Surgeon In Chief, Ann Arbor MI

Steve G. Docimo, MD, Professor Of Urology, Director Of Pediatric Urology, Pittsburgh PA

Matthew Dunn, MD, Assistant Professor, Los Angeles, CA

Ciro Esposito, MD, Associate Professor Of Pediatric Surgery, Naples, Italy

Marcelo Martinez Ferro, MD, Attending Pediatric Surgeon At Garrahan's National Children's Hospital, Director Of Fetal Treatment Center At CEMIC University, Buenos Aires, Argentina

Keith E. Georgeson, MD, Professor, Joseph M. Farley Chair; Director, UAB Division Of Pediatric Surgery; Surgeon-in-Chief, Children's Hospital Of Alabama, Birmingham AL

Philip L. Glick, MD, Exec. Director, MASTTAR; Chairman, Dept. Of Surgery, Prof. Of Surgery, Pediatrics & OBGYN, Surgeon-in-Chief & Clinical Director At Childrens Hosp. Buf, Buffalo NY

Carroll M. Harmon, MD, Associate Professor Of Surgery, Inverstigator In Clinical Nutrition Center At UAB, Birmingham AL

George W. Holcomb III, MD, Professor Of Surgery, University Of Kansas City School Of Medicine, Kansas City MO

Celeste M. Hollands, MD, Associate Professor Of Surgery & Pediatrics, Clinical Director, Miniature Access Surgery Center, Buffalo NY

Thomas H. Inge, MD, Assistant Professor Of Pediatrics & Surgery, Cincinnati OH

Vincenzo Jasonni, MD, Director, Pediatric Surgery, Genoa, Italy

Timothy D. Kane, MD, Assistant Professor Of Surgery, Pediatric Surgeon, Pittsburgh PA

Andrew J. Kirsch, MD, Associate Professor Of Urology, Academic Fellowship Director, Director, Pediatric Research, Atlanta GA

Martin Koyle, MD, Professor Of Surgery & Pediatrics, Chairman, Department Of Pediatric Urology, Denver CO

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Yuzhou Lee, MD, Professor Of Surgery, VP Of Chinese Pediatric Surgery Academy Of GuangDong Provience, Consultant Of Pediatric Surgery Director Of Lap. Ing. Trtmt Cntr, Foshan, China

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Thom E. Lobe, MD, Professor Of Surgery, Pediatrics & Preventative Medicine, Chairman, Section Of Pediatric Surgery, Memphis TN

Gordon MacKinlay, MD, Senior Lecturer In Clinical Surgery, University Of Edinburgh Consultant Pediatric Surgeon, Royal Hospital For Sick Children, Scotland

Robert Mevorach, MD, Assistant Professor, Urology And Pediatrics, Rochester NY

Philippe Montupet, MD, Attache Consultant - Chirurgien Pediatrique, Ancien Chef Clinique - Charge D'Enseignement, Paris, France

Azad Najmaldin, MD, Consultant Pediatric & Neonatal Surgeon, MR. & Honorary Lecturer, Leeds Medical School, Leeds, UK

Craig A. Peters, MD, Associate Professor Of Surgery, Harvard Medical School, Assistant In Urology, Children's Hospital, Boston MA

Olivier A. Reinberg, MD, Professor, Medecin Adjoint, Lausanne Switzerland

Bradley Rodgers, MD, Chief, Children's Surgery; Professor Of Surgery & Pediatrics, Charlottesville VA

Steven Rothenberg, MD, Chief, Pediatric Surgery; Assistant Clinical Professor, University Of Colorado, Denver CO

Barry A. Salky, MD, Clinical Professor Of Surgery; Attending Surgeon, New York NY

Alan M. Shanberg, MD, Clinical Professor And Director, Pediatric Urology, Orange CA

Mika Sinanan, MD, Professor, Surgery, University of Washington; Attending Surgeon, Seattle WA

Raleigh W. Thompson, MD, Chief, Pediatric Surgery, Associate Professor, Coral Gables FL

Jeff Valla, MD, Professor, Head Of Department, Nice, France

Mark L. Wulkan, MD, Director, Minimally Invasive Surgery; Assistant Professor Of Surgery & Pedatrics, Atlanta GA

Chung Kwong Yeung, MD, Professor & Chief, Division Of Pediatric Surgery, Chinese University Of Hong Kong, Hong Kong

DISCLOSURES

In the spirit of full disclosure, the faculty members listed below have voluntarily disclosed that they have a professional affiliation with the following companies who are either sponsors or exhibitors at the 11th Annual Congress for Endosurgery in Children, or whose products may relate to their presentation. The affiliations are not necessarily financial but may also include research grants, volunteer input, etc. IPEG requires speakers who have such affiliations to disclose this verbally prior to their presentation if it is not disclosed in writing. IPEG also requires that speakers disclose if a product is not labeled for the use under discussion or if the product is still investigational.

Al-Hindi, Saeed: Did not submit disclosure
Albanese, Craig: None
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Yurkanin, J. Paul: None

IPEG SOCIAL EVENTS

IPEG Main Social Event - "South of the Border - Hollywood Style"

Day/Date: Tuesday, March 11, 2003
Time: 7:00 - 10:00 PM. Shuttles will begin to depart from the Wilshire Grand hotel at 7:00 PM.
Place: Olvera Street
Dress: Casual
Fee: Included in Scientific Session or Guest registration fee. Extra tickets are available for $85 each. You must have your badge and ticket to board the shuttle.

Reception in the Exhibit Hall

Day/Date: Wednesday, March 12, 2003
Time: 5:00 - 7:00 PM
Place: Exhibit Hall K
Fee: Included in Scientific Session or Guest registration fee. Extra tickets are available for $25 each.

Save the Date!

13th Annual Congress for Endosurgery in Children

hosted by IPEG

May 5 - 9, 2004

Maui, Hawaii

at the Wailea Marriott, an Outrigger Resort

s01: LONG-TERM FOLLOW-UP ON RETROPERITONEOSCOPIC DISMEMBERED PYELOPLASTY FOR UPJ OBSTRUCTION IN INFANTS AND CHILDREN

C.K.Yeung1, J.D.Y.Sihoe1, H.Olsen2, T.M.Jorgensen2, K.H.Lee1, Y.H.Tam1, J.C.Djurhuus2 Division of Paediatric Surgery1, Department of Surgery, Chinese University of Hong Kong, Prince of Wales Hospital, Hong Kong, China, and Department of Paediatric Urology2, Skejby Hospital, University Hospital of Aarhus, Denmark

Aim: We have previously reported our initial experience in endoscopic dismembered pyeloplasty for ureteropelvic junction obstruction (UPJO) via a retroperitoneal approach in infants and children. We herein report the results of an extended series upon longer term follow-up.

Materials and Methods: We retrospectively reviewed all our cases of retroperitoneoscopic pyeloplasty performed for ureteropelvic junction obstruction (UPJO) over a 4-year period. A total of 44 patients (29 boys, 15 girls), were available for review. The mean age at surgery was 34 months (range: 3 months–14.1 years). Dismembered pyeloplasty was performed via a retroperitoneoscopic approach as previously described. All patients were followed up at 3 months postoperatively with an ultrasound scan and at 6 months with an ultrasound and diuretic isotope renography.

Results: Retroperitoneoscopic dismembered pyeloplasty was successfully performed in 42 patients. Open conversion was required in two cases in the early part of the series: one in a 3-month-old infant with huge hydronephrosis due to limitation of space, and the other due to previous nephrostomy drainage for pyonephrosis resulting in dense perinephric adhesions. The mean operation time was 139 minutes (range: 95 – 430 minutes). All patients had made a rapid and uneventful initial recovery, with no anastomotic leak. At a mean follow-up of 22 months (range: 5 months - 3.8 years), all have remained asymptomatic and well except for 2 patients who subsequently required redo-pyeloplasty because of unsatisfactory drainage secondary to kinking of an otherwise intact anastomosis. Both patients were young infants below 6 months at the time of surgery with massive hydronephrosis (renal pelvic diameter 50mm and 73mm respectively). Both underwent redo laparoscopic pyeloplasty via a transperitoneal approach and had remained well on follow-up.

Conclusions: Our results suggest that retroperitoneoscopic dismembered pyeloplasty is a safe and effective alternative to open pyeloplasty. Both case of failure in our series were young infants less than 6 months of age with hugely dilated renal pelvis of over 50mm diameter. We believe this was related to a restriction in the retroperitoneal space in young infants with massive hydronephrosis. We therefore propose that in this particular group of young patients, a transperitoneal laparoscopic approach may be preferable.

s02: A SIMPLIFIED TECHNIQUE FOR LAPAROSCOPIC EXTRAVESICAL URETERAL REIMPLANTATION IN THE PORCINE MODEL

D. Duane Baldwin M.D., Gregory L. Alberts M.D., S. Duke Herrell M.D., Jennifer A. Dunbar M.D., Richard L. Roberts M.D., John W. Brock III M.D., Mark C. Adams M.D., Elspeth M. McDougall M.D., John C. Pope IV M.D., Division of Pedatric Urology and Department of Pathology, Vanderbilt Children's Hospital, Nashville, TN. Department of Urology, University of California Irvine Medical Center, Orange, CA.

Introduction: Laparoscopic ureteral reimplantation has been reported, but is technically challenging. Herein, we present our experience with a simplified laparoscopic reimplantation of the ureter to correct vesicoureteral reflux (VUR). Material and Methods: Bilateral VUR was created in six minipigs. Laparoscopic extravesical correction of VUR was performed utilizing a full thickness posterolateral cystotomy. The ureter was transposed inside the bladder the full-thickness detrusor was closed behind the ureter. No attempt was made to cover the ureter with urothelium. Three months following reimplantation, the animals were evaluated with static cystogram, intravenous pyelogram (IVP), and pathologic and examination. Results: Post-operative cystograms confirmed no reflux in all the reimplanted ureters and residual grade 1-3 reflux in the non-reimplanted ureters. Cystoscopic evaluation revealed complete epithelialization over the reimplanted ureter. A complication occurred in one pig - the ureter was incorporated into the bladder closure and obstructed. The IVP in all other pigs demonstrated patent ureters with prompt function. Conclusions: Laparoscopic reimplantation of the ureter utilizing this modified Lich-Gregoir approach corrected reflux in all animals. The full thickness bladder incision and intravesical transposition of the ureter greatly simplifies the laparoscopic procedure. This laboratory experience encourages further clinical evaluation in the pediatric population with vesicoureteral reflux.

s03: ENDOSCOPIC NEPHRECTOMY IN CHILDREN – IS RETRO THE WAY FORWARD?

Jimmy P.H. Lam, Gordon A. MacKinlay, & Fraser D. Munro, Department of Paediatric Surgery, Royal Hospital for Sick Children, Edinburgh, UK.

Aims: To determine benefits of nephrectomy in children performed via retroperitoneoscopic approach compared to laparoscopic route.

Methods: Review of all endoscopic nephrectomies at our institution since august 1998.

Results: 32 endoscopic nephrectomies were undertaken. 22 laparoscopic with 5 conversions, and 10 retroperitoneoscopic. Median age was 5 years (range 5 months to 19 years) with median body mass of 23 kg (range 5 to 63 kg). Main indication for surgery was poor function secondary to either reflux or obstructive nephropathy. Operative time was similar by either approach. Apart from transient tachycardia and hypertension during initial creation of retroperitoneal space, there were no significant physiological effects from retroperitoneoscopy. There were no post-operative complications. Epidural analgesia was not required in successful endoscopic nephrectomy. Average post-operative morphine requirement in retroperitoneoscopic group was one third of that in laparoscopic group. The majority of successful endoscopic nephrectomies went home within 2 days of surgery.

Conclusions: Retroperitoneoscopic nephrectomy appears to be a safe technique in children with short hospital stay and excellent cosmetic result. There were no adverse physiological effects from retroperitoneoscopy and operative time was comparable to laparoscopic approach. Our early experience with retroperitoneoscopic nephrectomy also indicates an additional benefit of much reduced post-operative pain.

s04: OVARY SPARING SURGERY FOR COMPLEX OVARIAN LESIONS IN GIRLS – MIS TECHNIQUE AND BENEFITS

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Purpose - This study was undertaken to describe the technique of ovary sparing surgery in treatment of benign ovarian masses, especially when performed laparoscopically, and to evaluate the benefits of the procedure.

Method - A retrospective review was carried on the medical records of 61 patients operated for ovarian lesions in the period 01.01.97 to 07.31.02. Of these, 32 underwent ovary sparing procedures, 18 were operated laparoscopically. The presentation, surgical procedure (both open and laparoscopic ovary sparing procedures), specimen pathology and outcome of surgery was studied. Large cysts were aspirated under vision and ovary was salvaged using bipolar diathermy, water jet and graspers for traction.

Results and Conclusions - Ovary sparing surgery helps to salvage the ovary in benign complex ovarian disease. However, when it is performed by the minimally invasive approach it provides added advantages like - complete inspection of the peritoneal cavity, less perioperative discomfort, shorter hospital stay, and better cosmetic results. Also, as there is minimal tissue handling and trauma there should be decreased incidence of adhesions in the future.

s05: ONE-STAGE LAPAROSCOPIC HEMI-NEPHROURETERECTOMY WITH EXCISION OF URETEROCELE AND URETERIC REIMPLANTATION FOR DUPLEX KIDNEYS WITH NON-FUNCTIONONG UPPER MOIETIES AND COMPLICATING ECTOPIC URETEROCELES

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Background: We report our initial experience of one-stage laparoscopic hemi-nephroureterectomy with simultaneous excision of ureterocele, repair of bladder neck and reimplantation of the normal moiety ureter in the management of renal duplication associated with non-functioning moieties and complicating ectopic ureteroceles.

Patients and Methods: 7 patients (5 girls) aged 10 months to 5 years (mean: 2.2 years) with renal duplication associated with a non-functioning upper moiety and ectopic caecoureterocele underwent a one-stage transperitoneal laparoscopic upper pole hemi-nephroureterectomy plus excision of ureterocele, repair of bladder neck and extravesical reimplantation of the ipsilateral lower moiety ureter. The pathology was on the right side in 3 patients. A 5 mm 30o scope was inserted via a supraumbilical port. One more 5mm and two 3mm working ports were then placed under endoscopic vision. The upper moiety ureter was completely mobilised from the lower moiety ureter down to the point where it expanded into the ectopic ureterocele. With traction on the upper moiety ureter the ureterocele was everted, mobilised and excised extravesically. The resultant defect in the bladder base and proximal urethra was repaired by interrupted 4 zero polyglactin sutures. The lower moiety ureter was reimplanted extravesically using 5 zero polyglactin sutures.

Results: The laparoscopic procedures were successful in all patients. The mean operating time was 267 minutes (range: 205 - 355 mins). Mean hospital stay was 6.3 days. All patients recovered uneventfully. There were no procedure-related complications. All patients remained asymptomatic since surgery with a mean follow-up time of 16.2 months (range: 6 mths – 2.8 yrs).

Conclusions: Our initial experience demonstrated that radical definitive surgery can be safely and effectively performed in a single stage laparoscopically in the management of ureteric duplication with ectopic ureterocele. The laparoscope allows operation on both the upper and the lower pathologies in the same setting and further has the additional advantage of providing a close-up view deep down in the pelvic cavity that may not be easily accessible with traditional open techniques.

s06: TRANSVESICOSCOPIC BLADDER NECK RECONSTRUCTION WITH CARBON DIOXIDE PNEUMOVESICUM FOR PERSISTENT URINARY INCONTINENCE AFTER AUGMENTATION CYSTOPLASTY: A NOVEL TECHNIQUE

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Aim: We report our initial experience of transvesicoscopic bladder neck reconstruction under carbon dioxide pneumovesicum for children with neuropathic bladder who had persistent incontinence after bladder augmentation.

Patients and Methods: Three boys aged 4-17 years (mean age:10.2 years) with spina bifida and neuropathic bladder dysfunction had persistent urinary incontinence despite augmentation enterocystoplasty and Mitrofanoff appendicovesicostomy. With the patient in the lithotomy position a 5 mm port was inserted percutaneously over the dome of the augmented bladder under cystoscopic guidance and a 30 degree scope was used to provide intravesical vision. Two more 3-5 mm working ports were then inserted on either sides, and a 4th 3 mm port inserted suprapubically for subsequent traction exposure of the bladder neck. The mucosa over the anterior half of the bladder neck and about 1.5 cm of the adjacent proximal urethra was elevated and excised from 9 to 3 o'clock position. The underlying muscles of the anterior half of the bladder neck and proximal urethra was then apposed and closed using interrupted sutures. A 1.5 cm wide x 2 cm long strip of bladder mucosa was then mobilized from the posterior bladder wall, starting from the posterior half of the bladder neck and extending proximally to the level of the inter-ureteric ridge. This was then tubularized using continuous sutures over a F8 catheter. The overlying bladder mucosa was then closed with interrupted sutures. Bladder drainage by a suprapubic catheter inserted through one of the 3 mm port was maintained for 5-7 days post-operatively.

Results: Transvesicoscopic bladder neck reconstruction with carbon dioxide pneumovesicum was successfully performed in all 3 patients. The mean operating time was 226 minutes (range: 195-280 minutes). All patients recovered uneventfully after the procedure. Upon follow-up one boy had persistent occasional leakage. The other two patients had remained dry.

Conclusions: This preliminary experience illustrates that endoscopic intravesical bladder neck reconstruction can be safely and effectively performed with carbon dioxide insufflation of the bladder. This has a potential to become a very useful salvage procedure in patients with persistent urinary incontinence after major bladder reconstruction.

s07: LAPAROSCOPIC REMOVAL OF PERSISTENT MULLERIAN DUCT IN PEDIATRIC AGE

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AIMS: The Persistent Mullerian Duct (PMD) is a male pseudohermaphroditism form, characterized by failure to regress of the mullerian duct due to a defect in production or peripheral action of Mullerian Inhibiting Substance. The PMD can be asymptomatic or cause infections, stones, voiding disease and it may cancerate. Surgery is mandatory in big PMDs and in symptomatic patients. Today, we illustrate a laparoscopic removal and our results.

METHODS: Six male were treated from February 1998 through October 2002. The age at surgery ranged between 3 and 18 years (mean 8.6 yrs). All showed severe hypospadias and two had mixed gonadal dysgenesis and ambiguous genitalia. Three pts presented urogenital infections and all had a big PMD. The laparoscopic procedure, preceded by a bladder endoscopy, was performed with a 10 mm. umbilical trocar for the camera and three 5 mm. trocars in suprapubic region and iliac fossa bilaterally. The remnants were removed by use of endo-loops or endo-GIA.

RESULTS: The mean operating time was 2 hours and we hadn't complications. In two cases there was a deferential ectopia and in another a bilateral gonadectomy was performed because of risk of degeneration. The pts were nourished in first post-operative day and were discharged on 5 . After a follow-up ranging from 6 months to 4 years, all pts are healthy.

CONCLUSIONS: The techniques used in traditional surgery are difficult and often involves complications. Instead, laparoscopy improves the view, reducing the surgical risk and the operating time, avoids large scars and allows a fast discharge.

s08: VIDEO OF LAPAROSCOPIC-ASSISTED PERCUTANOUS INGUINAL HERNIAL CLOSURE IN CHILDREN

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Purpose: In recent years with advances in paediatric laparoscopic equipment, reports of successful laparoscopic herniotomy have increased. Multiple ports are used which result in scarring and increased pain, which questions the advantages of such repairs.

Percutaneous hernial closure with laparoscopic surveillance is an alternative method and it is the method of choice in this unit.

Methodology: General anaesthesia with laryngeal mask or face mask is used in most cases without muscle relaxation. Low pressure CO2 is employed to created a pneumoperitoneum. A 5mm port and scope is inserted in the sub-umbilical area by Hasson technique. A second (2mm) trocar is inserted in the right or left flank. 2-0 long-term absorbable suture is introduced via the abdominal wall and just lateral to the internal ring opening and manipulated by an outside needle-holder to purse string the hernial sac peritoneum with the aid of 2mm grasper. The needle is then brought outside of the abdomen. It is then passed subcutaneously onto the insertion point and sutured outside; thus closing the hernial opening completely.

Result: Over a 1.5 year period, 85 boys and 4 girls had hernial closure with this technique. The age of the children ranged from 3 weeks to 12 years. The procedure took an average of 15 ± 5 minutes.

One recurrence was noted in a 3 month follow-up.

Conclusion: Scarless and painless herniotomy is an ideal situation in treating paediatric inguinal hernia, this may be achieved by our described operation. Long-term follow-up is necessary to fully assess the recurrence rate.

s09: COMBINED UNILATERAL LAPAROSCOPIC NEPHROURETERECTOMY AND CONTRALATERAL URETERAL REIMPLANT IN AN INFANT WITH REFLUX NEPHROPATHY

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Purpose: To describe a novel surgical approach for treating an infant with a non-functional kidney, vesicoureteral reflux, and recurrent pyelonephritis using combined laparoscopic and open techniques.

Methods: A six month old boy was diagnosed at three weeks of life with hydronephrosis and high-grade vesicoureteral reflux. A Tc99 Mag 3 renal scan with furosemide demonstrated 86% function in the left kidney and 14% function in the right kidney. While on prophylactic antibiotic therapy, the patient developed a second episode of pyelonephritis. At six months of life, a DMSA renal scan again demonstrated minimal function in the right kidney, but good function in the left kidney without scarring. Subsequently, the patient underwent a right laparoscopic nephroureterectomy and left ureteral reimplantation. The right kidney and ureter were extracted through the Pfannenstiel incision used for the left ureteral reimplantation.

Results: Total operative time was 233 minutes. Intraoperative blood loss was less than 10 ml. There were no intraoperative or post-operative complications. Total in-hospital analgesic requirements were one milligram of morphine sulfate and fifteen milligrams of ketorolac. The patient was discharged home within twenty-three hours of his surgical procedure. At one month of follow-up, the patient has returned to normal activities and has had no urinary tract infections.

Conclusions: In the appropriate patient, laparoscopic and open surgical techniques can be successfully combined to treat diseases with less invasiveness.

s10: A NEW APPROACH TO THE INTRAABDOMINAL TESTIS: TWO STAGE LAPAROSCOPY WITH GUBERNACULAR PRESERVATION.

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Background: Laparoscopic management of the intraabdominal testis (IAT) typically involves division of the gubernaculum and passage of the mobilized IAT into the scrotum through the floor of the inguinal canal. However this approach transects vital gubernacular collaterals and predisposes patients to future direct inguinal hernias. We, therefore, present our experience with a modified two-staged laparoscopic orchidopexy (TSLO) with gubernacular preservation.

Methods: A retrospective review of all diagnostic laparoscopies (DL) for nonpalpable testes from 1996-2002 was performed. TSLO involved an initial testicular vessel transection 2-3 cm proximal to the testis. Subsequently the testis was mobilized with an adjacent peritoneal flap preserving collaterals between the vas and the testicular hilum. Gubernacular collaterals were preserved and the testis delivered through the internal ring and inguinal canal.

Results: DL was performed on 24 patients with 30 nonpalpable testes. Five testes were absent. Four testes were treated by open orchidopexy, two by one-staged LO, and one by orchiectomy. 14 patients(17 IAT) underwent 1st stage testicular vessel ligation. 9 patients (mean age 2.7 yr) have completed TSLO of 11 IAT (mean 7 months after 1st procedure.) Of the 10 TSLO with follow-up (mean 5.2 mo), 9 were found in the scrotum. One was found at the external ring. By palpation, all testes were viable.

Conclusion: TSLO with gubernacular preservation is a safe approach to the IAT.

s11: LAPAROSCOPIC TREATMENT FOR HYDROCELE OF THE CORD OR SCROTUM

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Hydrocele of the cord or scrotum is a common condition in infancy that usually presents at birth. In most children with hydrocele, the processus vaginalis closes and the hydrocele resolves during the first 12-18 months of life. The recommended management of hydrocele is therefore to observe the patient without surgery for the first 2 years of life. We have performed 248 laparoscopic percutaneous extraperitoneal closure (LPEC) procedures in 200 children with inguinal hernia, including 13 with hydrocele. Of these 13 patients, 6 (2-5 years of age) had communicating hydrocele, 4 (1-5 years of age) had noncommunicating hydrocele associated with inguinal hernia, and the remaining 3 (1 year of age) had noncommunicating hydrocele of the scrotum associated with a contralateral patent processus vaginalis. The laparoscopic correction of hydrocele involves high-circuit suturing of the processus vaginalis, as in LPEC for inguinal hernia. The distal part of the hydrocele is left open via the internal inguinal ring or a small incision in the scrotum. No occurrence or recurrence of hydrocele was observed in the 248 LPEC procedures in our series. The advantages of this procedure are not only cosmetic and minimally invasive closure, but also a lower risk of injury to the spermatic duct or vessels and complete closure of the communication between the peritoneal cavity and the hydrocele to a greater or lesser degree.

s12: Minimal Access Fetal Surgery For Twin-to-Twin Transfusion Syndrome (TTTS)

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Laser ablation of placental vessels effectively halts severe TTTS, but fetal surgery remains a dangerous approach. We present the technical aspects of safe and effective endoscopic fetal surgery from our initial clinical experience.

Nine women underwent endoscopic fetal surgery for severe TTTS. Patients with anterior placenta underwent MRI-based 3-D reconstruction for preoperative planning. Through a 2 cm abdominal incision a 14 Fr thin-walled cannula was introduced into the recipient's amniotic cavity by Seldinger technique under ultrasound guidance. A custom-curved 9 Fr sheath was used, containing a 1.9 mm semi-rigid fiber-endoscope. All unpaired vessels crossing the intertwin membrane were lasered with a 400 nm Nd:YAG fiber. The cannula was removed over a collagen sponge plug.

Median gestational age at surgery was 22 wk (range 16-24). Median operating time was 65 min (45-105). No patient experienced amniotic leak postoperatively. Length of stay was 2.8 ± 1.6 days. Immediate improvement was noted in all but two cases, one of which was stage V preoperatively (impending fetal demise). One mother developed pneumonia leading to premature labor. There were no other major surgical complications. Fetal survival at 2 weeks was 72%.

The safety and efficacy of endoscopic fetal surgery for severe TTTS can be optimized with the application of current minimal access techniques. The superiority of this approach over less invasive means is still being evaluated through prospective studies.

s13: LAPAROSCOPIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA

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BACKGROUND: Management strategies of congenital diaphragmatic hernia (CDH) continues to evolve. Repair of a CDH is performed after the neonate has been medically stabilized and not as an emergent operation. In addition to the timing of surgery, the operative approach now includes minimally invasive techniques. We report 15 successful laparoscopic CDH repairs in neonates and children.

METHODS: We retrospectively reviewed those patients undergoing laparoscopic repair of a CDH. There were 12 neonates and 3 children.

RESULTS: There were 12 Bochdalek and 3 Morgagni hernias. Operative weight ranged from 2.6 - 35 kg. All of the sugeries were performed during daylight hours. No patient was on ECMO during the repair. The majority of patients were hemodynamically stable without pressors and only 3 were intubated prior to surgery. All repairs were performed laparoscopically using 3 and 5 mm ports. All defects were closed primarily with suture. Operative time ranged from 35 - 120 minutes. Blood loss was less than 5 cc. Diet was resumed on all patients by postoperative day 3. There has been 1 recurrence in a neonate with a Bochdalek hernia and was successfully repaired.

CONCLUSIONS; Laparoscopic repair of CDH is safe and effective. These procedures were performed on hemodynamically stable patients. Laparoscopy offers an alternate approach over the traditional open operation with the advantages of better cosmesis, earlier initiation of feeds and improved visualization of the thoracic cavity on the affected side.

s14: THORACOSCOPIC REPAIR OF AN ISOLATED INTRA-THORACIC 'H-TYPE' TRACHEOESOPHAGEAL FISTULA (TEF) IN A NEWBORN USING TRANS-FISTULA GUIDEWIRE: A SURGICAL FIRST

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Open repair of an isolated intra-thoracic 'H-type' tracheoesophageal fistula (TEF) can be technically challenging, due to the difficulty in accurately identifying fistula location. We report the first case of thoracoscopic repair of this anomaly, utilizing a trans-fistula guidewire technique.

A fullterm 4.5 kg infant developed choking and coughing with oral feeds on the first day of life (DOL). On DOL 8 a barium esophagogram demonstrated a large TEF at the T2-T3 vertebral level. On DOL 10, using intraoperative bronchoscopy, a soft guide wire was placed into the trachea and then through the fistula. Using a rigid esophagoscope, the wire was grasped and pulled out through the mouth. Fluoroscopy confirmed that the fistula was intrathoracic.

Two 3-mm trocars and a single 5-mm trocar were inserted, via the right chest, in modified prone position with left mainstem intubation. Identification of the TEF was aided by gentle upward traction on the guidewire by the anesthesiologist. The TEF was occluded with clips and divided. A pleural flap was interposed and a chest tube placed.

The patient was extubated within five hours, fed on postoperative day (POD) 3, off pain medications by POD 4, and home on POD 9 without apparent complications. An esophagogram, performed one month after surgery showed normal esophageal shape and function.

In summary, a newborn with isolated, intra-thoracic 'H-type' TEF underwent successful thoracoscopic repair with minimal morbidity and rapid recovery.

s15: MINIMAL ACCESS SURGERY IN NEONATES WITH CARDIAC ANOMALIES.

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Introduction. In the past neonates with cardiac anomalies were not considered as candidates for minimal invasive surgery (MAS). With the evolution of more complicated MAS procedures, such as for esophageal-, duodenal- and anorectal atresia, more neonates will be encountered that do have associated cardiac anomalies. In a retrospective study neonates with associated cardiac anomalies that underwent MAS were studied for possible adverse outcomes.

Materials. The files of all neonates that underwent MAS were studied. Anaesthesiological measures were generally standard. Five to 8 mm Hg insufflation pressure was used, also in thoracoscopy.

Results. Between 1993 and August 2002 a total of 171 neonates underwent a MAS procedure. Twenty of these neonates had 22 associated cardiac anomalies (12%).

Table. Neonatal diseases and associated cardiac malformations.

Diagnosis	Associated Cardiac Anomaly
Duodenal atresia (6)	ODB (2), Open foramen ovale, VSD, Pulm. Hypertension, PPS, Tetralogy Fallot
Esophageal atresia (6)	ODB (4), ASD II, VSD (2)
Hirschsprung disease (2)	ODB, ASD I, ASD II, PPS
ARM	Tetralogy Fallot
Jejunal atresia	ODB/PPS
Pylorus hypertrophy (2)	PPS, Open foramen ovale
Diaphragmatic eventration	VSD/Coarctatio
Cholestasis (cholangio)	VSD
PPS-peripheral pulmonary artery stenosis,	ODB-open ductus Botalli

There have been no adverse effects or outcomes in any of the neonates with an associated cardiac anomaly.

Conclusion. Duct-dependent cardiac lesions, which are most likely to be associated with adverse clinical outcomes in the neonatal period, are uncommonly associated with major gastrointestinal malformations requiring early surgery. With proper anaesthesiological care neonates with associated cardiac anomalies need not have adverse effects from a MAS approach.

s16: MINIMALLY INVASIVE SURGERY IN NEONATES: THE FIRST DECADES EXPERIENCE

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Background: This study reviews the first decades experience with minimally invasive surgery in infants. It evaluates the feasibility, safety, efficacy and development of performing advanced endoscopic procedures in infants under 5 kg.

Methods: Over a 10 year period 846 infants weighing 1.2 to 5.0 KG underwent 881 procedures using minimally invasive techniques. The majority of the procedures were performed using specially designed 3mm instruments and 2.7 or 4mm scopes. Procedures include Nissen Fundoplication, pyloromyotomy, colon pull-through, PDA closure, Ladd's procedure, colon resection, congenital diaphragmatic hernia repair, abdominal cyst excision, TEF repair, lung lobectomy, intestinal atresia repair, imperforate anus repair, and exploration.

Results: Ninety-eight percent of procedures were completed successfully endoscopically. There were three intra-operative complications and no mortality. Days to discharge for patients admitted for their specific procedure were Nissen 1.1, PDA 1.3, pyloromyotomy 1, pull-through 2.6. There has been only one case of a post-operative bowel obstruction.

Conclusions: This study demonstrates that advanced endosurgical techniques in infants is safe, effective, and associated with the same benefits as that seen in older patients.

s17: LAPAROSCOPIC-ASSISTED PYLOROMYOTOMY FOR HYPERTROPHIC PYLORIC STENOSIS

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Purpose: With the introduction of paediatric laparoscopic operations in 1990's, many new techniques have been described for minimally invasive treatment of pathological conditions in the neonates.

Ramstedt's pylromyotomy is perhaps the simplest neonatal operation. It is also the simplest laparoscopic operation in the neonatal period.

Methodology: Sixteen neonates/infants with hypertrophic pyloric stenosis underwent laparoscopic pylromyotomy over a 18-months period.

A 5mm umbilical port was used for a 0-angle scope, two 3mm ports were inserted in the right flank and supra-umbilical area. A doudenal grasping forceps is used to stabilize the pyloric tumour. Visible vessels on the tumour were diathermied.

Pylromyotomy was performed with a modified knife and angle forceps, introduced per-cutaneously utilizing the supra-umbilical port site.

Result: The procedure took an average of 18 ± 5 minutes. There were no complications of note.

All children commenced feeding the following day, one child had prolonged vomiting for five post-operative day. The remaining neonates tolerated feeds and discharged two days later.

Conclusion: Laparoscopic-assisted pyloromyotomy is an alternative method to the open procedure. The technique is safe and takes no longer than classical incision.

s18: LAPAROSCOPY FOR ABDOMINAL CYSTS IN NEONATES

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PURPOSE. We evaluate the clinical application of laparoscopy for abdominal cyst in neonates.

PATIENTS & METHODS: Three neonates with congenital abdominal cystic lesion, which were diagnosed by ultra-sonography and CT scan, underwent laparoscopy. They were 4-27 days of age and 2.4 to 3.4 kg of weight. The camera port was placed in the lower abdomen with open technique. Under the careful monitoring of cardiopulmonary status, the pneumoperitoneum was created with a 0.5L/min flow of CO2 insufflation and maintained at 3-6mmHg. After the cystic lesion was visualized and evaluated in laparoscopic view, the small incision was added for resection.

RESULTS: All patients were diagnosed laparoscopically. The diagnoses were ovarian cyst, intestinal duplication and hydrometrocolpos. No complications such as hypothermia or hypercapnia were encountered during the pneumoperitonization, and the patients' cardiopulmonary status was kept stable in all cases. In cases of ovarian cyst and intestinal duplication, the cysts were resected extra-corporeally through small laparotomy. In case of hydrometrocolpos, the fluid was drained. Each postoperative course was rapid and uneventful. Cosmesis is also acceptable in all cases.

CONCLUSION: Laparoscopic approach of abdominal cystic lesion is feasible and safe in neonate. This approach is one of the surgical options for neonates with abdominal cyst.

s19: ULTRASONIC TRIPLE WELDING, A NEW TECHNIQUE FOR SIMULTANEOUS OCCLUSION AND SECTION OF HILAR VESSELS IN ENDOSCOPIC SURGERY

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Background: Major organ resections require safe control of large vessels. Laparoscopic coagulating shears (LCS) have been used since 1994, but on major vessels clips and staplers were used instead.

Methods: The authors devised a new technique of applying reusable LCS for cutting vessels and examined the scope and reliability of major vessel occlusion by ultrasonic triple welding without clips or staples. 88 patients (weight 4.1-82 kg) underwent endoscopic resections of the spleen, gall bladder, colon, liver, thymus, lung-lobes, adrenals or kidney in a prospective observation study. In ultrasonic triple welding every section of a major vessel was secured by a non-cutting ultrasonic coagulation on either side.

Results: During 5 years ultrasonic triple welding was used as the sole method of vessel control in 88 major organ resections up to 8-10 mm diameter. All children were followed to date and there was no haemorrhage, nor any serious complication after 4-61 months. Reusable LCS cut down the cost of paediatric endosurgery substantially.

Conclusions: Although this is a limited experience in paediatric endosurgery, the technique proved to be safe in a substantial number of major procedures on unselected patients and should be evaluated for different surgical procedures.

s20: A NEW OPTION FOR LIVER RETRACTION IN LAPAROSCOPIC ANTIREFLUX SURGERY IN CHILDREN

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Purpose: To demostrate the utility and security of a less invasive method for liver retraction and esophageal hiatus exposition during the laparoscopic Nissen procedure in pediatric patients.

Methods: A prospective, longitudinal and descriptive study. We included pediatric patients that requiered the Nissen procedure by laparoscopic approach. We used four cannulae, for the liver retraction we introduced a 0 silk suture from below of the xiphoid process to the esophageal hiatus 3 mm upper to the phrenoesophagic ligament and neraby the ribs, we fix the 2 endings of the silk to the surgical towels. With this technique we was able to elevate the liver. We analized the fixing timing, the presence of liver or other organic lesions, the esophagus hiatus exposition, the presence of skin lesions and the finally cost.

Results: Fron novemeber 2000 to december 2001 we operated 61 patients with this procedure, ages ranged from 2 months to 12 years, and weights from 4 to 34 kilograms. The time to insert the suture was from 4 to 7 minutes, there were no liver or other organs lesions. There was an adequate exposition of the esophageal hiatus without the need to install a new cannula. There werw no skin lesions and with a cost of USD 1.68

Conclusion: The silk suture to the esophageal hiatus is a safety, useful and cheap alternative for the liver retraction and facilitates the esophagic dissection when we perform any antireflux laparoscopic surgery.

s21: TECHNIQUES FOR ACHIEVING BENEFITS FROM COMPUTER ASSISTED ROBOT ENHANCED SURGERY (CARES) IN NEWBORNS

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Aim: Demonstrate the feasibility, advantages and disadvantages of CARES in the model operation of esophago-esophagostomy for esophagus atresia in a surviving animal model the size of a human newborn.

Background: The major enhancements offered by the Zeus Microwrist Robotic Surgical System (ZMWR) for minimally invasive surgery are: tremor filtration, motion scaling, the addition of a wrist to the instruments, safe and rapid instrument exchange, and voice control of the view and instrument modifications. These allow the surgeon to take advantage of the magnification (10X to 15X) associated with endoscopic surgery.

Methods: Newborn piglets (1.5-4kg) underwent a CARES esophago-esophagostomy. The animals were recovered, survived until sacrifice at 14 days and were examined postmortem.

Results: The ZMWR allowed precise needle placement, suture positioning, and knot tying in the very small working space with minimal assistance. Port placement is particularly important because of the small space available for working and to avoid the robotic arms interfering with each other extracorporeally.

Conclusion: CARES facilitates a minimally invasive approach to complex surgery even in the limited space of the infant chest. The surgical tasks may be more precise and consistent than with open operations, however, a significant amount of work must be devoted to developing each procedure.

s22: MINIMALLY INVASIVE MANAGEMENT OF GASTROINTESTINAL FOREIGN BODIES

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Purpose: Laparoscopy is utilized for diagnostic exploration and evaluation of the abdomen. Therapeutic laparoscopic management of gastrointestinal foreign bodies (FB), especially in the pediatric population, has not been reported extensively.

Methods: Since March 2001, 3 children have undergone laparoscopic management of intestinal FB. Clinical cases and surgical approaches were reviewed.

Results: All 3 patients were successfully managed laparoscopically. Mean operative time was 90 minutes. Patient 1 presented with an 18-month history of intestinal FB and symptoms of intermittent small bowel obstruction. At laparoscopy, a jejunal web was identified. Web resection with coin removal was performed. Patient 2 underwent CT examination for abdominal pain, and a mass worrisome for a FB was seen near the falciform ligament. At laparoscopy, the transverse colon was adhered to the abdominal wall. Laparoscopic colon resection was performed after identification of a colonic perforation due to a toothpick. A gastric FB was discovered in patient 3 during laparoscopic Nissen fundoplication for GERD. The FB was laparoscopically manipulated into the distal esophagus where a foley catheter was used to remove a coin through the mouth

Conclusions: Laparoscopy can be a valuable tool in the management of intestinal FB. The combination of short operative times and hospitalization warrants its consideration when gastrointestinal FB do not pass.

s23: FURTHER DEVELOPMENT OF THE MASTER-SLAVE COMBINED MANIPULATOR AND ITS SUPPORT SYSTEM

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A lack of freedom and tactile sensation has been major restrictions for the laparoscopic surgery. To overcome these difficulties a couple of robotic systems were introduced, however, the system dose not meet requirement by pediatric surgery because the whole system is huge, mechanically complicated and expensive. We have been developing robotic forceps in which the master and slave units are combined together (MCM). The slave hand is equipped with yaw (or pitch), roll axis and a gripper, which is driven by the cable controlled by DC servomotors. A posture of the slave hand is provided by the calculation of the position of the master grip. The tip position of the MCM is controlled by direct motion of surgeon's arm and the surgeon is responsible for the large and quick motion of the MCM.

After further refinement of machinery and operability, average time from insertion of the needle to the completion of the third tying revealed 155 sec/task. The error of the insertion point of the needle was within 1 mm in the task of 5 continuous running suture. MCM could guide the needle from any point to the desired direction. This pre-clinical model of MCM is designed to be used with a newly developed holding arm that has a sensing mechanism to tell the tip position of the robotic forceps and weight compensation function. This helps surgeon to hold robotic forceps by reducing weight of the MCM from 3.1N to 0.6N. In addition, the system is able to create virtual wall or floor in the operative field for the robotic hand not to go beyond the certain plane for the safety.

s24: APPLICATION OF A SURGICAL ROBOT TO OPEN MICROSURGERY: THE EQUIPMENT

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Background: Surgical robots can enhance surgery through motion scaling and tremor filtration.

Goal: To explore the possibility of using a surgical robot designed for endoscopic surgery for open microsurgical procedures.

Materials & Methods: Using a Zeus Microwrist System in conjunction with the triple-alpha port, we performed suture tasks on a glove box with microsurgical suture (8-0 to 10-0) in two different configurations. First, we used a standard 10 mm laparoscope, camera, and the Zeus monitor. Then, we used an operative microscope for visualization.

Results: In both configurations, we were able to manipulate small suture effectively. Using the standard laparoscope, we measured a maximum working magnification of 27 times. At the maximum magnification, we had some difficulty resolving 10-0 suture. Using the operative microscope, we found that the surgeon was crowded with equipment, however the maximum working magnification was greater, the resolution of the fine suture was excellent, and the surgeon had better depth perception.

Conclusion: We effectively used the Zeus system in manipulating microsurgical suture with both a standard laparoscope and a surgical microscope. The microscope provides better visualization. We plan to further explore this application of the surgical robot by working in an animal model and investigating an adapter that will allow the image from the surgical microscope to be sent to the Zeus video monitor.

s25: ROBOTIC-ASSISTED PYLOROMYOTOMY

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Feasibility studies for the use of robotic surgical systems in pediatric miniature access surgery have demonstrated longer operative times. The purpose of this study was to determine if the longer operating times for robotic-assisted pyloromyotomy were clinically significant. The following data was reviewed for 11 patients undergoing laparoscopic pyloromyotomy in 2001 and 6 patients undergoing robotic-assisted pyloromyotomy in 2002:age; post-op stay; post-op temperature change; operative and anesthesia times; and complications. Clinical significance was defined as post-op hypothermia, prolonged post-op stay,or intra-operative complications. Age (weeks):Laparoscopic(L)5.8±2.27, Robotic(R)5.0±6.16 (p=0.86); post-op stay (days):L 4.0±4.88, R 6.16±11.55 (p=0.7); post-op temperature change (Farenheit):L -0.15±1.83, R 1.1±0.7 (p=0.09); complications:none in either group. The median post-operative hospital stay was 1.0 and 1.5 days for the robotic and laparoscopic groups respectively. Times(mins): Operative: L 33.9±6.9, R 61.5±11.9 (p=0.002); Anesthesia: L 94.4±8.93, R 137±22.9 (p=0.007). The longer operative and anesthesia times for the robotic group was not clinically significant as evidenced by the lack of a difference in the outcome parameters measured. This lack of clinically significant outcome differences supports the addition of robotic technology for more advanced surgical procedures where its benefit to infants and children may be more pronounced.

s25a: WORKSPACE ESTIMATION FOR TRACHEO-ESOPHAGEAL FISTULA REPAIR

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We set out to identify the requirements of the technology needed to perform Robotic Pediatric Surgery. In order to identify a target procedure that demonstrated a challenge in pediatrics today, we reviewed many procedures presently done both laparoscopically and conventionally. We aimed to identify a procedure that was performed primarily on neonates and also afforded good opportunity for substantial clinical benefit when done laparoscopically. The procedure of choice was repair of Tracheo-Esophageal Fistula (TEF). This thoracoscopic procedure represents a major challenge due to the size constraint of the thoracic cavity, especially with respect to the small neonate. Firstly, we identified the dimensions of the workspace for the TEF repair in a small neonate and, then, assessed the possible size constraints of instruments used to perform the TEF repair.

Estimations of workspace dimensions were made from video recordings of a laparoscopic TEF repair. From this we determined that the effective operating workspace approximated to a 2cm cube. Using 5mm instruments we demonstrated good access to the workspace. However, the tip articulation must lie within 1 cm of the instrument tip to allow the TEF repair to be performed within the calculated workspace. In addition, the proximity of the operating field to the chest wall demands that the instrument ports be placed within 3cm of the camera port.

s26: PRIMARY THORACOSCOPIC GROSS TOTAL RESECTION OF NEUROBLASTOMA

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Purpose: Thoracic neuroblastomas are generally less aggressive than abdominal tumors and usually have a better prognosis. We review our experience with a primary thoracoscopic approach.

Methods: Records were reviewed of patients undergoing primary thoracoscopic resection of neuroblastic tumors between 1998-2002. Data included demographics, symptoms, size, location, operative time, complications, hospital stay, histology, biologic markers, adjuvant therapy, and follow-up.

Results: Five patients presented with mediastinal neuroblastic tumors at 9 to 44 months old. Three had neurological symptoms. Tumor size was 2.1 to 6.0 cm. Two were apical, three supradiaphragmatic. Primary thoracoscopic gross total resection was achieved in all five. All were stage I. No patients during this time period underwent a failed thoracoscopic resection. Operative time ranged 64-175 minutes. The only complications were small tumor spillage in two. Hospital stay was 1-4 days. Tumor histology was favorable in all cases, from maturing ganglioneuroma to nodular ganglioneuroblastoma. None were n-myc amplified. Chemotherapy was not indicated for any patient. None have evidence of disease at 7-42 months follow-up.

Conclusion: Primary gross total resection of mediastinal neuroblastoma can be achieved safely and effectively by a thoracoscopic approach. In our series, the tumors had favorable histology and biology, and appear to be potentially treatable by primary thoracoscopic resection alone.

s27: LAPAROSCOPIC ASSISTED EXCISION OF SACROCOCCYGEAL TERATOMA IN AN INFANT

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Introduction: The management of type II sacrococcygeal teratoma requires a combined abdominoperineal approach for the complete resection of the tumour. With the advance in laparoscopic surgery in children, we have been successful in resecting a type II tumour under laparoscopic guidance.

Case report: The patient was initially placed in the supine position. CO2 pneumoperitoneum was established between 12 – 15 mmHg and a 30 degree 5mm laparoscope was used. A 3mm port and a 5mm port were inserted at the left and right lower quadrant respectively. The sigmoid colon and the upper rectum were mobilised and the presacral space was entered. The tumour was then mobilised circumferentially down to the level of the cervix anteriorly and the sacrococcygeal region posteriorly with presacral plexuses safeguarded. The abdominal wounds were then closed and the patient was turned into the prone position. An inverted chevron incision was made and the tumour was mobilised from the adjacent muscles and the rectum until it joined with the intrapelvic dissection. The tumour was then resected together with the coccyx and the whole specimen was retrieved through the perineal wound without difficulty. The wound was then closed with the anus hitched back to restore the puborectal angle. There was minimal blood loss and blood transfusion was not required. The whole operation took 3 hours 25 minutes. The post-operative course was uneventful.

Conclusion: We have found that the combined laparoscopic and perineal approach is ideal in tackling type II sacrococcygeal teratoma. This allows very good visualisation and meticulous dissection of the deep pelvic tumour and possibly carries a more superior outcome.

s28: INTERNET BASED TELEMEDICINE IN PEDIATRIC SURGERY

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Introduction. The Internet is a medium that has fundamentally changed the way patient information is exchanged among health care providers. Use of this technology in the field of pediatric surgery will not only facilitate access to a pediatric surgeon but also make the process of pediatric surgical consultation convenient to both pediatric surgeon and the referring physician. In this study, we hypothesized that pediatric surgical evaluation, diagnosis, and planning of treatment is feasible using Internet based telemedicine.

Materials & Methods. This is a collaboration between two pediatric centers on opposite sides of the globe. The interaction is between a surgical trainee in the Philippines and a pediatric surgeon in Buffalo, New York. Consults were achieved through the use of Desktop PCs with Internet access and digital still camera. Patient data, diagnosis, and plan were exchanged using electronic mail with attachments and instant messaging.

Results. A total of 25 children with varied surgical problems, from congenital anomalies to tumors, were referred. Accurate diagnosis and appropriate treatment plans were made on all cases.

Conclusion. Pediatric surgical evaluation, diagnosis, and planning of treatment are feasible using internet based telemedicine. The protocol is easy to learn and allows accurate diagnosis of a wide spectrum of pediatric surgical conditions.

s29: THE ANTERIOR ENDOSCOPIC APPROACH FOR CORRECTION OF SPINAL ANOMALIES

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PURPOSE: Traditionally, a thoracotomy, thoracolumbar or flank incision has been utilized for exposure to the thoracolumbar spine for anterior release, diskectomy and fusion (ARDF) for correction of significant scoliosis or kyphosis. Following the anterior procedure, posterior fusion and instrumentation has been performed through a long posterior midline incision.

METHODS: This is a retrospective study of a single institution's experience with the first 50 cases of thoracoscopy and retroperitoneoscopy for correction of these spinal anomalies.

RESULTS: The first 50 patients underwent 51 operations between 1995 and 1999. The patients ranged in age from 2 to 21 years (14.3 years, mean) and 32 were female. Forty-two operations involved thoracoscopic ARDF and were followed by open posterior fusion and instrumentation. Three patients underwent retroperitoneoscopic ARDF. In six additional operations, anterior instrumentation was added to the ARDF with the operation primarily in the chest in three patients and in the retroperitoneum in three patients. The minimum follow-up in all patients has been three years. In the ARDF group alone, all patients have been felt to have an excellent to good correction. In the six instrumented patients, complications have developed in three.

CONCLUSION: Thoracoscopic and retroperitoneoscopic ARDF can be performed safely and efficiently. The addition of anterior endoscopic instrumentation is a more difficult procedure and requires additional experience and training.

s30: THORASCOPIC TRACHEOESOPHAGEAL FISTULA LIGATION IN LONG GAP ESOPHAGEAL ATRESIA

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BACKGROUND: Distal tracheoesophageal fistula (TEF) with long gap esophageal atresia is a challenging clinical situation. Recently, thorascopic TEF repair has been described with excellent results. We report a successful staged repair of a long gap esophageal atresia in a premature, low birth-weight neonate utilizing thoracoscopy as the initial operative procedure.

RESULTS: A 30 week 1100 gram neonate with Pierre Robin Syndrome was diagnosed with a tracheoesophageal fistula during emergent fiber optic intubation at birth. Chest xray demonstrated the proximal pouch to be at the thoracic inlet. Within 24 hours, the neonate was taken to the operating room and underwent a right thorascopic exploration. A right sided aortic arch was identified and a long gap esophageal atresia was confirmed. The distal esophagus was identified and dissected towards the trachea. The TEF was ligated with surgical clips. A laparoscopic gastrostomy was also placed. On postoperative day 7, an esophagram was performed, demonstrating a decrease in the gap distance. On postoperative day 29, the esophageal atresia was repaired primarily via a right thoracotomy. An esophagram on postoperative day 6 revealed no leak and a mild stricture. Full feeds were resumed via the gastrostomy.

CONCLUSIONS: In patients with TEF and long gap atresia, thoracoscopy offers the advantage of: 1)confirming a long gap atresia, 2) identifying a right sided aortic arch, and 3) allowing ligation of the TEF for a staged repair without a thoracotomy.

s31: EXPERIENCE WITH THORACOSCOPIC ANTERIOR SPINE PROCEDURES IN CHILDREN

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From February 1996 through September 76 patients were determined to be appropriate for a thoracoscopic approach for the anterior portion of their spinal surgery. Ages ranged from 8 to 17 years of age (avg 12) and weight from 20 to 75 Kg. The diagnosis included severe idiopathic and neurogenic scoliosis and or kyphosis (n=70) and congenital hemivertebra (n=6). The procedures performed included diskectomy and anterior release from 2 to 9 (avg 5) vertebral levels, hemivertebrectomy, and epiphysiodesis. Five patients also had an open lumbar exposure and all had a posterior fusion.

All procedures were completed successfully endoscopically. Operative times for the thoracoscopic portion of the procedure ranged from 50 - 165 minutes (avg 105) and total procedure times were shorter then with the standard open technique. Three patients were extubated at the end of the procedure with the majority extubated on POD # 1. Average ICU stay was 1.6 days and chest tubes were removed between POD #1 and #5 (Avg. 2.2 days). In follow-up surgical correction was deemed to be acceptable and equivalent to open techniques in all cases .

This technique has proven to be safe and effective in children and appears to be associated with less pain and morbidity as evidenced by earlier extubation and chest tube removal, and shorter ICU stay.

s32: THORACOSCOPIC FINAL RECONSTRUCTION AFTER KIMURA´S EXTRATHORACIC ESOPHAGEAL ELONGATION FOR LONG GAP ESOPHAGEAL ATRESIA.

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PURPOSE: Describe a new approach for patients with long gap esophageal atresia.

CASE REPORT: A 1 day old boy with Type A esophageal atresia was referred to our Institution for treatment. Initial evaluation revealed a 5 vertebrae distance between upper and lower pouches and a cervical esophagostomy was performed. After 4 esophageal elongations, end to end esophageal anastomosis was achieved by thoracoscopy.

TECHNIQUE: A) Multistaged extrathoracic esophageal elongation was performed by dissecting and stretching the upper pouch and passing it through a subcutaneous tunnel to a lower position. The procedure was repeated 4 times until both esophageal ends superimposed. B) Patient was positioned prone and three trocars were placed (one 5mm and two 3mm). CO2 insufflation to 5mm Hg provided excellent lung retraction. Azygos vein was divided with monopolar cautery. The already dissected upper pouch was pulled into the thoracic cavity under direct thoracoscopic vision. Anastomosis was accomplished using 8 interrupted stitches of 5/0 PDS using extracorporeal knot tying.

RESULTS: No operative complications were encountered. Operative time was of 180 minutes. Postoperative pain management and cosmetic results were excellent.

CONCLUSION: Thoracoscopic reconstruction after esophageal elongation may be a valuable technical resource for the treatment of long gap esophageal atresia cases.

s33: ENDOSCOPIC SERIAL EXTERNAL RIB CORTEX EXCISION FOR CORRECTION OF THE PROMINENT COSTAL ARCH IN THORACOSCOPIC NUSS FUNNEL CHEST REPAIR IN ADOLESCENTS

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Objective: Many adolescents funnel chests have disfiguring prominent costal arches, which are not normalized by standard Nuss procedures.

Methods and Procedures: Under epidural PCA 98 adolescents (12-41 years, mean 17,8 +/- 5,6 y; 86 male/12 female) got thoracoscopic Nuss repair from 4/2000-10/2002, since 8/2000 in an own modification (JPS 9/2002). 46 patients (including nearly all females) had prominent costal arches mostly asymmetric. In 16 patients costal arch eversion exceeded the funnel depth. From the Nuss accesses submuscular pockets were dissected endoscopically right to the costal arches. With standard Rongeur or Luer serial strips from the external rib cortex (mostly 7-10th) are excised rendering the prominent ribs malleable. Moreover 2-3 segments of about 0.5-1cm are excised from the costal arch itself. The costal arch is molded manually and an elastic thoracic bandage fitted in the operating room to be worn for 4 weeks. The transsected costal arch is not united, but drained by suction drainage, blood loss is only slightly increased.

Results: All including the most severe costal arch deformities could be corrected to normal without additional access or complications. Apart from two early fair results aesthetic results are excellent, minor unevenness can be corrected at the time of bar removal.

Conclusion: Endoscopic serial external rib cortex weakening was an effective complementary procedure for prominent costal arches in 46 thoracoscopic Nuss funnel chest repairs.

s34: USE OF ENERGY DEVICES IN THORACOSCOPY: QUANITATION OF LUNG SEALING CAPACITY

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PURPOSE: The goal of this study is to quantitate the ability of 5mm energy devices to seal lung tissue. Use of stapling devices in pediatric thoracoscopic surgery is limited due to the decreased maneuverability of 12mm instruments in the pediatric chest.

METHODS: Nine 10Kg female swine were divided between three non-survival groups. [Group A, n=3] Left thoracotomy employing a 30mm stapler(US Surgical). [Group B, n=3] Left thoracoscopy employing the Ligasure(Valley Lab) 5mm instrument. [Group C, n=3] Left thoracoscopy employing the harmonic(Ethicon) 5mm instrument. Lung biopsies of the lingula were taken. At the end of the procedure seal burst pressures were recorded.

RESULTS: AVG Burst Pressure(mmHG); [A]Staples 43.5(43-44), [B]Ligasure 44.9(40.2-53.6), [C]Harmonic 37.5(30-46.4). AVG Seal Length(mm); [A]Staples 30(30-30), [B]Ligasure 27(21.4-30), [C]Harmonic 26(22-27). AVG Biopsy Weight(g); [A]Staples 0.52(0.51-0.53), [B]Ligasure 1.78(1.69-2.14), [C]Harmonic 1.58(0.3-1.66). The standard deviations for the pressures were; [A]Staples 0.5, [B]Ligasure 7.54, [C]Harmonic 8.29. There were no statistically significant differences between the burst pressures by T-Test(A vs.B p=0.78, A vs.C p=0.33). There was 80% power to detect a difference in the means of 25mmHG for the [A]Ligasure and 27mmHG for the [B]Harmonic.

CONCLUSION: In conclusion, both the ligasure and harmonic can effectively seal lung tissue from air-leaks in the non-survival swine model.

s35: A NEW USEFUL TOOL FOR THE NUSS PROCEDURE

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Background / Purpose. The main risk of the NUSS procedure is the retrosternal passage of the introducer. There is little space due to the depression of the sternum. Lifting the sternum from outside would provide extra space and safety.

Methods and Materials. In four children, aged from 10 to 15 years, scheduled for the NUSS procedure, an extrathoracic vacuum bell was applied intraoperatively. The negative pressure is created by a small hand pump, with a maximum of -15% of the atmospheric pressure. Upon inserting the thoracoscop the lift up of the sternum was video documented and the introducer passed between heart and sternum. The remaining procedure was carried out as usual.

Results. In all children the sternum was elevated within one or two minutes. This created enough space to safely advance the introducer. When the negative pressure was released the sternum sunk back immediately. There were no skin lesions, no hematoma or petechia and no other complications.

Conclusions. With the vacuum bell the NUSS procedure has become more safe. Further clinical experience is required in order to determine whether it renders intraoperative thoracoscopy unnecessary.

s36: ECHINOCOCCUS GRANULOSIS OF THE LUNG : TREATMENT BY THORACOSCOPY

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The hydatidosis is, in our country, at the endemic state. The lung location is the most frequent in the childhood. Conservative treatment of this pathology is possible by thoracoscopy.

In this study, 30 patients with hydatidosis cyst of the lung have benefited from the video surgery at the children's hospital of Rabar (Morocco) between September 1998 and September 2002.

Three ports are used : a 10mm port for the endoscope and two operatives ports.

The hydatid fluid is aspirated via percutaneous way under control of the view to reduce the tension within the cyst. Hypertonic saline solution (15%) is injected within the cyst cavity as a solecidal agent. The proligere membrane is isolated in a plastic bag and taken out from the 10mm trocard incision. A capsectomy is realized.

Bronchial fistulas are closed and the cyst cavity is padded. A drain is left into the pleural cavity. The average hospitalization duration is about three days.

There is no death in our Seri and there is no recurrence with a follow up of 6 to 48 months.

Conclusion: Video surgery achieves satisfactory results in the treatment of the hydatidosis cyst of the lung in children.

s37: LAPAROSCOPIC RECTOPEXY FOR RECTAL PROLAPSE IN CHILDREN

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Rectopexy is one of the accepted forms of treating rectal prolapse in children. A variety of techniques including laparoscopic rectopexy have been reported in adults. We report our experience of laparoscopic rectopexy in children.

8 Patients with rectal prolapse resistant to conservative treatment underwent laparoscopic rectopexy. Three 5mm ports were inserted: one in the umbilicus for a zero degree telescope, one in left upper quadrant and one in right iliac fossa. The mobility of the rectum was checked. The peritoneum was incised in the area blow the left internal inguinal ring . The rectum is fully stretched and sutured to the psoas muscle with 2-0 vicryl sutures. Postoperatively feeding was commenced once the patients were awake. The patients were discharged the next day and were followed up after six weeks.

All the 8 patients underwent this technique . The median operation time was 45 minutes and the median hospital stay was 24 hours. All patients tolerated the procedure well and there were no complications. There is no recurrences after a follow up of 24 months.

Laparoscopic rectopexy can be easily performed in children. Our technique is simple and had excellent results. We apply laparoscopic rectopexy in children with rectal prolapse resistant to conservative management.

s38: VIDEO OF LAPROSCOPIC APPENDECTOMY FOR APPENDICAL MASS

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Purpose: Laparotomy for appendical mass is necessary in presence of acute right iliac fossa pain, peritonitis and fever.

Generous right iliac fossa incisions are routinely done to deal with these cases as the removing the appendix can be difficult due to extensive adhesion, omental wrapping and abscess within the mass..

Laparoscopic appendectomy (LA) can result in decreased pain due to the smaller wounds and superior cosmesis.

Methodology: Two year prospective study of all laparoscopic appendectomies for appendical masses in a single paediatric surgical unit.

Results: 35 perforated had LA in the period reviewed, 6 children had appendical mass noted under general anesthesia. Procedure took 120 ± 20 minutes. All patients were ambulatory within 2 days and commence oral feeding 3 days later. Postoperative stay was for an average of 5 days.

Conclusion: In the hands of experienced laparoscopist, LA can be recommended even in appendical masses. It does take longer than open operation but cosmesis and decreased pain are advantages of this technique.

s39: LAPAROSCOPIC LADD PROCEDURE FOR CORRECTION OF PEDIATRIC MALROTATION: INITIAL EXPERIENCE

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Malrotation without volvulus can produce chronic, intermittent symptoms and produce potentially disastrous consequences if left untreated. Upper gastrointestinal x-ray series (UGI) in such patients often suggest a rotational anomaly but may not be completely diagnostic.

Thirteen children, ages 3 months to 14 years, suspected of having malrotation without volvulus based on preoperative symptoms and UGI underwent laparoscopic exploration by a single surgeon over a 21 month period. 10 of 13 (77%) were confirmed to have malrotation and underwent laparoscopic correction. Operative time ranged from 80 to 209 minutes (mean 134 minutes) with minimal blood loss. Feedings were started within 24 hours in 6 (60%) and within 72 hours in the remaining 4 (40%). Full feedings were tolerated by postoperative day (POD) #4 in all patients. Hospital course ranged 1-4 days (mean 2.8 days). Two of the three children with negative laparoscopies were discharged by POD #1. Follow-up has ranged from 5 to 22 months. Emesis resolved in 7 of the 10 surgically corrected patients (3 patients were lost to follow-up). No patient developed midgut volvulus nor required re-operation.

In summary, in the subset of patients with intermittent obstructive symptoms and an abnormal UGI, laparoscopy permits diagnostic certainty, symptom relief similar to open Ladd's procedures, yet without the morbidity of open negative laparotomy.

s40: LAPAROSCOPIC DUHAMEL PROCEDURE: MANAGEMENT OF 55 CASES

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INTRODUCTION: Hirschsprung's desease (HD) is a commun cause of neonatal intestinal obstruction and chronic constipation. Advances in instrumentation and in laparoscopic experience make laparoscopic correction possible between few years.

MATERIALS AND METHODS: medical records of children that underwent an laparoscopic Duhamel procedure from feb 1995 and june 2002 were reviewed. Operative technique was always the same, using 4 ports (5,5,10 and 12 mm) and wall-suspension. We reviewed birth-weight, clinical feature, age and weight at procedure, morbidity and follow-up.

RESULTS: 46 boys and 9 girls, with a median birth weight of 3406g, were opered. 4 enterocolitis and 16 sepsis presentation need 20 colostomy and 5 ileostomy (total colonic aganglionosis). Mean age for procedure was 13 months (25days-8years). Average operative time was 140 mn (range 100-330). 4 conversions were necessary. There were no deaths. There were 1 anstomose leakage (colostomy and Swenson 6 months later), 1 retrorectal abcess (local drainage) and 1 ileal perforation during total colectomy (ileostomy). The post-operative recovery include 2 urinary infection and 1 blood sepsis (TPN). There were no enterocoliti and no anastomosis stenosis.Follow-up (3months-7years) find 40 ecellent results, 6 new section of spur and 8 childs with persisting constipation needing laxative.

CONCLUSION: Duhamel laparoscopic procedure is feasible in case of left, right or total colonic aganglionosis.There were excellent early and late results, like open technic without adhesions and scars.

s41: A NOVEL TREATMENT OF CONGENITAL DUODENAL WEB: IMAGE-GUIDED TREATMENT OF CONGENITAL AND ACQUIRED STENOSIS IN CHILDREN.

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Purpose: Image guided pneumatic dilatation of congenital or acquired stenosis of small and large intestine in children has not been previously reported. Here we report the safety and efficacy of pneumatic dilation of congenital and acquired small and large intestinal stenosis.

Methods: Retrospective analysis of 8 children less then two years old between 1994 and 2001 with small or large intestinal stenosis who underwent pneumatic dilatation. In one patient, we use this novel approach in the management of congenital duodenal web.

Results: In addition to the patient who had a dilatation of a duodenal web, there were 2 other patients who had dilatation of small bowel strictures at anastomotic sites and 5 who had dilatation of colonic and rectal strictures. The colonic and rectal strictures were the result of necrotizing enterocolitis (NEC). There was one complication and one unsuccessful dilatation. One patient suffered a localized perforation treated with 72 hours of intravenous antibiotics. Another required operative resection of a long (5 centimeter) stricture. All short strictures were successfully dilated.

Conclusions: Pneumatic dilatation of congenital or acquired short small bowel and colonic stenosis can be performed safely and efficaciously in selected patients. With development of new image guided technology and expertise, the application of this treatment may be broadened.

s42: LAPAROSCOPIC ASSISTED OPERATION FOR JEJUNAL STENOSIS IN INFANT

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Jejunal stenosis is commonly diagnosed and treated at the newborn. But in some patients, it is diagnosed after starting baby food, and these cases are always menbranous type.

Our case is a ten-month-old boy. He had sometimes vomiting milk during neonatal periods, but his body weight gain was enough. After having baby food, biliary vomiting was sometimes recognized. We performed upper gastrointestinal contrast studies and diagnosed as jejunal stenosis. We used laparoscopic assisted technique. 5mm trocar was inserted at the umbilical portion for camera and 3mm trocar was inserted at the right upper quadrant and left lower quadrant for working ports. Dilated jejunum coming from the ligament of Treitz was seen and caliber change was identified as we suspected. Distal jejunum and ileum were normal. We made about 3cm skin incision at left upper quadrant, where was decided by scope as an appropriate position for resection. Then, the caliber change was pulled out through the tiny incision and end to end anastomosis was performed after resection. Pathologic finding is menbranous type.

Our procedure, laparoscopic assisted operation for jejunal stenosis is less invasive and benefit for cosmetic result.

s43: DEFINITIVE LAPAROSCOPIC TREATMENT OF EXTENDED HIRSCHSPRUNG'S DESEASE OR TOTAL COLONIC FORM

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Background: between december 1990 and march 1999, 6 laparoscopic Duhamel pull-through procedure for extended form or total aganglionosis were performed in our departement.

Methods: the aim of thys study was to show that even in extended form of the Hirschsprung's disease, the laparoscopic approach was possible and the total colectomy feasible.The Duhamel procedure we used has been described previously. We used one camera port end three working ports. The sigmoid, transverse and right colon until the ileal cove was mobilisez laparoscopically. A standart posterior ileo-anal anastomosis was performed and a GIA stapler was used for the anterior anastomosis and for the rectal stump.

Results: five patients underwent laparoscopic surgery for 3 total colonic form of the Hirschsprung disease, one rectosigmoid form but with a short bowel and colon resection attributed to a volvulus and one transverse variant using the Deloyer artifice for the pull-througt. Three infants were in need of total parenteral nutrition (TPN)in average 49 days (28-60) from diversion till definitive procedure. Only two had no TPN. Post operatively, there was 2 complications: one wound infection, and one hectic fever. The results on the clinical level were good with no soiling and stoll incontinence, no constipation.

Conclusion: the laparoscopic procedure for the total aganglionosis or extended form of Hirschsprung disease is safety, feasible and reproductible.

s44: STOPPING DUODENAL STENOSIS IN CHILDHOOD LAPAROSCOPIC TREATMENT

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In children we quite frequently find pathology such as duodenal stenosis.It can be congenital or acquired. Complete obstructions and specially the atresic type require an urgent intervention, that is why their treatment must be done quickly. However,partial stenosis in some occasions causes suboclusive bouts with spontaneous resolutions so patients are operated one at a later age. Two girls afflected with duodenal stenosis of the mesenteric artery(MAS):one required the liberation of the Treitz ligament of the 2nd and 3rd portion and the other girl needed duodenal-jejunostomy that required a laparoscopic treatment. A 3rd case with a fenestrated duodenal membrane has been treated by combined endoscopy.In a fourth case with an annular pancreas,the subocclusive picture has been solved by a laparoscopic duodeno-duodenostomy. Finally we present a case of extraluminal diverticulum,which has been extirpated the same way without any problem. The post-operative course has been excellent in all the cases

Concluding: We can state that the use of laparoscopy in many duodenal pathologies can be perfectly done. On the other hand,the cosmetic aspect,decrease of the postoperative pains,the short hospital stay and smaller costs prove that it is the ideal technique at the present moment.

s45: FAIL TO PREPARE, PREPARE TO FAIL - THE INTRATHORACIC STOMACH.

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Large paraoesophageal hernias present difficulties for the minimally invasive surgeon. In many reported series passsage of the stomach, large or small bowel through the oesophageal hiatus often leads to conversion to an open procedure.

We present our series of 5 large paraoesophageal hiatus hernias and the strategies we have gained to allow successful completion of the hiatal repair and fundoplication.

Method: Retrospective review of 5 patients age 8 - 32 months. 4 male , 1 female. All patients presented with an intrathoracic stomach with small or large bowel herniation.

Results: Follow up 9 months to 5 years. No conversions. No recurrence. All children thriving with no clinical evidence of gastroesophageal reflux or foregut dysmotility.

Conclusions: We believe 4 factor lead to a successful repair. 1 control of the omentum with a plication suture. 2 identification of the small anterior sliding hernia and recognition of the larger posterir sliding hernia. Approaching the posterior stomach and hiatus through the lesser and greater omentum leads to superior visualisation. 3 An anterior and posterior crural repair minimises kinking of the oesophagus and requirement for a prosthetic patch. 4 A loose Nissen fundoplication.

s46: PUSHING THE ENVELOPE FOR MINIMALLY INVASIVE SURGERY IN CHILDREN

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Purpose: To report two unique cases of minimally invasive surgery that were performed in children. The cases illustrate that combined endoscopic and laparoscopic drainage of a pancreatic psuedocyst in children can be accomplished successfully.

Methods: Two patients, aged 3 and 5 years old, were referred for pancreatic pseudocysts of traumatic origin. A trial of nonoperative treatment and radiological drainage were unsuccessful. Cystgastrostomy was completed with a combined endoscopic and laparoscopic transgastric stapled anastomosis.

Results: The average operative time was 100 (range 90-110) minutes. There was minimal blood loss and no complications. An adequate biopsy specimen was obtained in each patient. A transgastric cyst drainage tube was placed. Diet was resumed the following day. A CT scan 5 days postop showed resolution of the pseudocyst. The patients were discharged on the fifth post-operative day. A 6-month postop CT scan still showed no recurrence of the pseudocyst and at 8-18 months follow-up, the children are symptom-free.

Conclusions: This report of the first pediatric experience with combined endoscopic-laparoscopic cystgastostomy, shows that it is safe and effective. With improved pediatric instrumentation and experience, surgical problems can increasingly be managed with more innovative minimally invasive techniques.

s47: ADVANTAGES OF LAPAROSCOPIC PYLOROMYOTOMY OVER UMBILICAL OR RUQ APPROACHES

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Laparoscopic pyloromyotomy (LP) has gained considerable acceptance over the last several years. To determine whether the choice of technique affected outcomes, we compared several outcome variables by operative approach. Data from all infants who participated in an IRB approved, RCT of two feeding regimens were retrospectively re-stratified by operative technique. The choice of LP vs. umbilical pyloromyotomy (UP) vs. right upper quadrant pyloromyotomy (RUQP) was based on preferences of the 9 surgeons in this practice. Outcomes of interest were postoperative length of stay (LOS), operative time, overall LOS, and number of episodes of postoperative emesis. 85 patients underwent LP, 35 underwent UP, and 46 underwent RUQP. Since LP wasn't used previor to this study period, the first 1/3 of LP cases was analyzed separately from the latter 2/3 of cases. For cases performed beyond the initial experience with LP, LP patients experienced reduced postoperative LOS compared to either open technique ($p<0.05$; LP=24h, UP=31h, RUQP=31h). LP resulted in significantly fewer episodes of postoperative emesis compared to patients who underwent RUQP ($p<0.05$; LP=1.3, UP=1.8, RUQP=2.1). No differences in operative time (about 30 min) nor overall length of hospitalization (about 44h) were noted regardless of technique. Open and laparoscopic pyloromyotomy are comparable operations overall. For cases performed after the learning phase for LP, our data confirms a modest advantage of LP over open techniques when postoperative LOS and frequency of postoperative emeses were considered.

s48: CO2 PNEMOPERITONEUM IN RATS – BACTERIALTRANSLOCATION AND XANTHIN-OXIDASE ALTERATION IN SMALL BOWEL

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Background: Reports exist on sepsis after laparoscopic proc.The etiology is unclear,but a risk for bact.translocation(BT)is discussed.Xanthine oxidase(XO)is regarded as a significant source of oxidants having impact on the impairment of intestinal barrier function.Aim:Analyzing BT in rats under CO2 pneumoperitoneum(PP)and measuring XD and XO in small bowel. Methods: 32 rats were devided in 4 groups (G). G1 (control) - general anesthesia for 30 min. G2 - sham laparotomy for 30 min. G3 - CO2 PP (10 mmHg) for 30 min. G4 - PP max. CO2 of 15 mmHg. At the end rats were sacrified. Specimens were taken and intestinal colonisation and BT to V.cava, V.porta, mesenteric lymphnode, liver and spleen was determined. XO and XD activity in ileum (IL) and jejunum (JEJ)was measured enzymatically. Results: BT,counted on the basis of contaminated specimen: 5 (G1); 4 (G2); 12 (G3); 20 (G4). BT was increased in group 4 ($p<0,05$),mostly Lacto and E.coli. Contamination of the peritoneum was present in G3 and G4.There was an increase of XO and XD in t he JEJ of G3 and G4 while XO and XD levels in the IL did not show any increase. Various CO2 pressure and XO XD levels correlated($p<0,02$).Conclusion:PP increases BT,depending on the CO2 pressure.XO and XD might be involved.The differences between JEJ and IL can be related to altered small bowel perfusion. Our data might contribute to the hypothesis that PP can damage the mucosal barrier and alter bowel perfusion while the exact mechanism remains still unclear.

s49: MINIMAL INVASIVE SURGERY IN CHILDREN CAUSES LESS ACTIVATION OF THE IMMUNE SYSTEM (LYMPHOCYTE SUBPOPULATION AND HLA DR+ MONOCYTES)

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BACKGROUND: Surgical trauma alterates the immune response. The present study was performed to investigate, whether minmal invasive surgical procedures (MI) in children influence the postoperative immuncompetence less than open surgery.

METHODS: In a prospective study we evaluate 10 children for laparoscopic versus open hiatusplastic + fundoplication and 10 children for MI versus open chest wall correction. Immune response was measured by: CrP, neutrophils, T-lymphocyte surface markers (CD3,CD4,CD8,CD4:CD8 ratio), activation markers (CD25/CD4, HLA DR in monocytes) and NK cells. Blood samples were collected preoperatively and 12, 24, 72 hours and 7 days after surgery.

RESULTS: Postoperative in open surgery a significantly greater increase in CrP, neutrophils and white blood count was recorded. The total lymphocytes showed a greater decrease in this group. Open surgery was found to cause a greater reduction in the number of T lymphocyte surface marker CD3, CD4, CD8 and HLA DR expression on monocytes at 12h after the operation. There was no significant reduction between these groups of the NK cells. Expression of CD25 on T lymphocytes increased in the early postoperative period after open surgery.

CONCLUSION: In children elective surgical procedures cause alterations of the immune system. Minimal invasive surgery cause less activation of the immune system in children than conventional operations and may be an indicator of a reduced surgical trauma inflicted by such MI-techniques.

s50: A PROSPECTIVE RANDOMIZED STUDY OF THE HAEMODYNAMIC EFFECTS OF CARBON DIOXIDE PNEUMOPERITONEUM (CDP) DURING LAPAROSCOPY IN INFANTS USING TRANSESOPHAGEAL ECHOCARDIOGRAPHY

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Purpose: Laparoscopy is routinely used in paediatric surgery, however, the haemodynamic effects and safety of CDP in infants have not been carefully examined.

Methods: 16 infants (<12 months) undergoing laparoscopic procedures were randomly assigned to a normocarbic group (PCO2<38mmHg) or to a hypercarbia group (to a maximum of 60mmHg). The haemodynamic effects of CDP at three different intra-abdominal pressures (0, 10 and 15mmHg) and at three different body positions (horizontal (0 deg.), Reverse-Trendelenburg (10 deg.) and Trendelenburg (15 deg.)) were measured using Trans-esophageal and transthoracic echocardiography prior to surgery. Statistical analysis by multiple linear regression using the SAS program was performed.

Results: Hypercarbia had significant effects ($p<0.05$) on heart rate, systemic blood pressure (BP), velocity of circumferential fiber shortening, ejection time, isovolumetric relaxation time (IVRT) and peak ejection rate. Significant haemodynamic changes ($p<0.05$), including mean BP, ventricular wall stress, IVRT, left ventricular end-diastolic area and right ventricular fractional area change were observed with the changes in intraabdominal pressure. Body position had no significant haemodynamic effects.

Conclusions: Clinically relevant changes in haemodynamic parameters occur during CDP in infants. Both hypercarbia and intra-abdominal pressure changes independently effected haemodynamic function. Caution needs to be exercised when performing laparoscopic procedures in infants who have underlying heart conditions with diminished cardiac reserve.

s51: A HOME-MADE MINIMAL ACCESS SURGICAL SKILLS STATION

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AIM: To develop a simple set-up for practising minimal access surgical (MAS) skills at home/office.

METHOD: An endoscopic trainer station was constructed using an old computer game table. Hooks and rubber bands were used to anchor 5 mm trocars to simulate port positions in real practice. A video camcorder linked to a 14-inch television was used as the viewing element of the set-up. The camcorder was mounted on a tripod and placed between 2 trocars. Recently used disposable laparoscopic instruments were collected, cleaned and used for practising simple MAS skills.

RESULTS: Conditions similar to that of a more expensive laparoscopic trainer were achieved for MAS skills practice. Simple skills practice such as object transfer, knot tying, clip applications were performed in ergonomic conditions (eg 2D view, limited degree of freedom of movement) resembling real-life MAS operations.

CONCLUSIONS: Such set-up would allow junior surgical trainees starting MAS to practice simple skills at home/office. Obviously this is not an alternative to attendance at established laparoscopic training courses, group practice using laparoscopic trainers/manikins and real-life laparoscopic surgery under the guidance of more experienced MAS surgeons. Nevertheless this is much more accessible (in terms of time and costs) for repeated exercises allowing basic laparoscopic skills to develop. Modification of the set-up would allow more advanced exercises to be practised.

s52: DOES POSTGRADUATE YEAR (PGY) LEVEL OF SURGICAL TRAINING AFFECT BASIC LAPAROSCOPIC SKILL ACQUISITION IN THE LABORATORY?

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INTRODUCTION: Teaching residents surgical skills outside the operating room is a strategy that may reduce medical errors and cost. As we implemented such a program for surgical residents at all levels, we decided to evaluate the effect of PGY level on the acquisition of basic laparoscopic skills in the laboratory.

METHODS: Surgical residents were trained in the lab using six previously validated drills (pegboard, cup drop, rope pass, pattern cutting, EndoClip, and EndoLoop). Residents were given a pretest on each of the drills, followed by training and practice, and then were given a posttest. Skill acquisition was evaluated using time and penalty scores. Score improvements were compared across PGY-levels. A mixed-model ANOVA for repeated measures was used after normalized-rank transformation was applied to the data. Two tailed $p<0.05$ was considered significant.

RESULTS: Forty residents participated in the training including PGY-5 (3), PGY-4 (5), PGY-3 (7), PGY-2 (10), and PGY-1 (15). There was a significant ($p<0.05$) improvement between pre- and post-test time scores among all PGY levels. In addition there was significant reduction in penalty score for two drills (pegboard $p=0.005$, rope pass $p=0.01$). There were no significant differences in improvement of scores between the different PGY levels.

CONCLUSION: Basic laparoscopic skill training in the laboratory is beneficial for all levels of surgical residents. The drills used did not discriminate between PGY levels.

s53: Laparoscopy for the Treatment of Females with Anorectal Malformations (ARM)

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Aim: Present our experience with the use of laparoscopy in selected girls with ARM

Methods: Over a 3 years period we use laparoscopy for the treatment of 7 girls with ARM . Five had a cloacal anomaly and 1 a rectovaginal fistula with a high rectum.Their age range was 10 months to 4 years . We started using **laparoscopy combined with total urogenital sinus mobilization (TUM) through a restricted posterior sagital approach (RSARP)** for the treatment of 2 cloacas (GI). After a total urogenital sinus mobilization (4 and 9 cm long) through the posterior sagital approach , the rectum was still high and its mobilization uncomfortable . The rectum was dissected laparoscopically and the fistula transected between endosutures . Tailoring of the rectum was completed through the RSARP.

A l**aparoscopically assisted anorectal pull-through using a minimal perineal incision** (as previously described by K.Georgeson) was used in 2 pts(1 had a rectovaginal fistula and 1 a rare spectrum of cloaca with total vaginal agenesis)**(GII)**.An initial laparoscopic approach was very helpful in the latter. Not only it confirmed uterovaginal dysgenesis but also demonstrated clearly that a very short distal sigmoid had been left . We decided then to leave the rectum as a vagina and descend the proximal sigmoid colostomy to the perineum ,leaving the patient with neither a colostomy nor posterior sagital scar. Cloacal channel was opened and mobilized to create a wide vaginal opening (neovagina).

Encouraged by this experience we used an initial 3mm laparoscopic approach in 3 other pts with cloacas and unclear preoperative contrast studies **(GIII)**. It showed a normal uterus in the midline in all of them and a very dilated rectum that required aggressive tapering in 2. Reconstruction was completed through a restricted sagital approach in all as they were low –intermediate type. A very low dissection of the rectovaginal septum was comfortably achieved in the patient with the nondilated rectum which resulted in an even more restricted sagital approach

Results: Operative time ranged from 190 to 380min . No adhesions or difficulties related to colostomies and vesicostomies were noted . Only 2 pts may be considered for continence : 1 in GI that has severe constipation and requires weekly enemas (9 cm channel) and 1 in GII who is completely continent (associated vaginal agenesis).

Discussion: Laparoscopy gives an optimal view of the pelvis and helps to achieve a low dissection of the fistula with minimal trauma in pts that required an abdominal approach (GI). A combined initial endoscopic and laparoscopic assessment permitted a less invasive and time consuming approach in a case that would be a candidate to start with redoing "the inadequate colostomy".(GII)It helped to asses the real anatomy and reduce sagital dissection (GIII)

s55: DEDICATED INTELLIGENT OPERATING ROOMS FOR CHILDREN

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Introduction. The most recent advance in Miniature Access technology is the Dedicated Intelligent Operating Room (DIOR). To date, few centers have reported their experience with this new technology. In this study, we sought to describe our experience with the use of DIOR for Children and assess its impact in Miniature Access Surgery (MAS). Materials & Methods. We reviewed all MAS operations performed during the last 6 months of the traditional MAS room and the first 6 months of our newly acquired DIOR. 4 variables pertaining to the operation and OR efficiency were analyzed. A survey of the staff, focused on variables impacting user satisfaction, was also conducted. Results. The OR time and time between cases in the DIOR group decreased over time. The difference in the OR time was not statistically significant. The decrease in time between cases in the DIOR group was statistically significant ($p < .05$). User satisfaction, image quality, documentation, and 2-way interactive features ranked high in the survey in favor of the DIOR. Conclusion. The use Dedicated Intelligent Operating Rooms for Children improved the operating room efficiency. Like MAS, there is a learning curved in using this technology. Hence, further improvement in OR efficiency is expected as we advance in this learning curve. End user satisfaction, better image quality, easy documentation, and 2-way interactive features are additional justification for the adoption this new technology.

s56: LAPAROSCOPIC PORTOENTEROSTOMY FOR BILIARY ATRESIA. TECHNICAL ASPECTS AND INITIAL CLINICAL EXPERIENCE OF AN ENCOURAGING TECHNIQUE.

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PURPOSE: Describe and evaluate a technique for Biliointestinal Laparoscopic Enterostomy (BILE) in infants with biliary atresia.

PATIENTS: From December 2001 to September 2002 we treated 3 patients with biliary atresia. Ages ranged from 48 days to 4 months. Weights were 4.8 Kg, 5 Kg and 7.4 Kg.

TECHNIQUE: Patient's whole body is raised so that arms and legs fall aside. A first trocar (4mm) is inserted in the umbilicus. Two 3mm trocars are placed in the right flank and hypochondrium. The fourth trocar of 5mm is placed in the left flank. Transparieto-hepatic stay sutures help to expose the inferior surface of the liver. The porta hepatis is dissected using hook and scissors. A jejunal loop is selected and externalized trough the umbilicus and a Y en Roux is accomplished. BILE is achieved by suturing the jejunum to the porta-hepatis using interrupted stitches of 5/0 PDS with C1 needle. No drains are left.

RESULTS: BILE was accomplished without conversions. Mean operative time was 220 minutes (150 and 270 minutes). No complications were observed during or after surgery. Patients started feeding from 12 to 24 postoperative hours. All patients have colored stools and remain anicteric in follow-up. Cosmetic results are remarkable in all three.

CONCLUSION: BILE is a safe and effective technique. Apart of the astounding cosmetical outcomes, the absence of postoperative adhesions, may turn to be the most important benefit of this approach in the eventuality of a liver transplant.

s57: THE PLACE OF LAPAROSCOPY IN LIVER PEDIATRIC SURGERY: PRELIMINARY EXPERIENCE OF 9 CASES

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Introduction: Many reports described feasibility and safety of laparoscopic liver surgery in adults. This step is not yet reached in children, despite the fact that many pathologies of the liver could benefit of this laparoscopic approach.

Patients and methods: Nine patients from august 1999 to may 2002, aged from 3 months to 7 years, underwent a first intention laparoscopy for liver tumors. Harmonic scalpel was used in 6 cases.

Results: Two cases had biopsies for tumors involving segment III. Histogical diagnosis were 1 systemic cat scratch disease and 1 recurrent neuroblastoma. Three cases concerned cystic lesions. In the first case, a pedicular hemolympangioma was divided from the segment V. In the last two cases, partial pericystectomy was performed for large cysts (50 and 58 cm diameter in 3 months and 1,6 years old boys respectively). The last 4 patients had nodular regenerative hyperplasia involving segments III, IV, VI and the left lobe of the liver, with a tumor diameter range from 30 to 85 mm. The 3 first cases had wedge resections, and the last case a left lobectomy. There were no transfusion or complications.

Conclusion: Laparoscopic surgery should be more often used for children liver pathology in selected patients. Biopsies may be guided by laparoscopic vision, allowing a better histological analysis. About liver partial resections, adult experience is probably applicable with minor modifications in children.

s58: INDICATION AND TECHNIQUE OF LAPAROSCOPIC SUBTOTAL 80-90% SPLENECTOMY FOR SPHEROCYTOSIS OR IMMUNODEFICIENCY IN EXCESSIVELY TRANSFUSION DEPENDENT PRESCHOOL CHILDREN

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Objectives: Laparoscopic splenectomy is inadequate in excessively transfusion dependent preschool children, where haemolysis must be decreased retaining some splenic function.

Methods: Here we used laparoscopic subtotal splenectomy retaining one splenic pole (20-25% of normal spleen). 6 children of 5.1 ± 2.1y (3.2–8.4 y) got transfusion dependency with 25-64 transfusions under four. From 3-4 ports the central branches of the splenic artery were divided retaining the two polar arteries. The better perfused pole was fixed (4 upper/2 lower poles) and the spleen cut by harmonic scalpel removing the splenic bulk umbilically.

Results: There was no complication except a basal atelectasis. After 3-13 months all six children have a normal life quality, normal splenic remnant perfusion and scintigraphic uptake as well as normalized Hemoglobin (mean 11.6g/dl), thrombocytes and borderline bilirubin. No child had severe infection, gall stone formation or needed further transfusion.

Conclusions: Laparoscopic subtotal splenectomy seems to be an effective treatment of excessive transfusion dependency in early childhood with so far no complications although it retains subclinical hemolysis. Basically severe sperocytosis is transformed into mild spherocytosis preserving a functional splenic remnant. The follow-up is still short, but according to French 11-year data from the open procedure it may be the definite procedure for 90% of the children. (37/40 children, B Bader-Meunier, Blood 2001).

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p001: LAPAROSCOPIC ASPECTS OF FEMORAL AND DIREKT INGUINAL HERNIAS IN CHILDREN

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Introduction: Inguinal hernias in children are usually indirect. Direct inguinal hernias have been considered rare. However, they are encountered almost ten times more frequently using laparoscopy.

Methods: In 321 children treated laparoscopically for inguinal hernias, nine direct inguinal hernias (2.8%) and four femoral hernias (1.3%) were identified in 13 boys and one girl (median age, 5 years; range, 1–10 years) and closed with a non-absorbable 4-0 suture, using 2 mm needle holders.

Results: Of the nine children with direct hernias, one child had one previous open repair, and another child had three previous open repairs. Among the four with femoral hernias, two had received three previous open herniotomies, while the other child had received one previous open repair. Six of the nine direct hernias were right-sided, and three were bilateral. Three of the four femoral hernias were bilateral, and one was left-sided. With this approach, one of the nine direct hernias recurred (11%), as did one of the four femoral hernias (25%).

Discussion: Direct inguinal hernias seem to occur more frequently in children than previously assumed. Laparoscopic closure of direct inguinal hernias is more demanding than for indirect hernias. Simple closure by a suture appears inadequate in direct hernias, as demonstrated by the increased recurrence rate. Opening the peritoneum and exposure of the underlying anatomy seems warranted in direct and femoral hernias.

p003: Laparoscopy In The Diagnosis And Treatment Of Pediatric Malignancy

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Background: Laparoscopy may have a place in the management of malignancies, but its safety has been questioned. Few pediatric series have been reported. We present the combined experience of 11 centers on the place of laparoscopy in pediatric malignancies.

Methods: A retrospective review of all laparoscopic evaluations for pediatric malignancies collected from 11 pediatric centers is reported.

Results: 52 patients underwent minimally invasive procedures. In 25 cases a presumed diagnosis of lymphoma was confirmed by biopsy. Solid tumors (27) included: neuroblastomas (10), hepatic tumors (5), appendiceal carcinoid (3), ovarian malignancy (3), and miscellaneous tumors(6). Laparoscopic interventions included 37 biopsies (72%), all diagnostic; 4 complete resections, 2 oophorectomies, and one exploration. No port site metastases have been reported with a mean follow-up of 33.6 months. There were no perioperative mortalities.

Conclusions: While it is one of the largest series on this topic, the relatively small number of cases suggests that laparoscopy plays a limited role in pediatric oncology. In addition to the safe resection of small lesions (including ovarian tumors), it is most useful for lymphoproliferative disorders and unresectable solid malignancies. This approach provides accurate diagnosis and allows assessment of tumor resectability. Tumor seeding at the port sites does not appear to be a concern in pediatric malignancies.

p004: HYDROSTATIC REDUCTION OF INTUSSUSCEPTION UNDER LAPAROSCOPIC CONTROL

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Introduction: A relative contra-indication to radiological air or barium reduction is delayed presentation.

Laparoscopically controlled hydrostatic reduction (LCHR) can be successful in these cases as it is similar to open reduction.

Material & Methods: Over a 2 year period,32 children with intussusception were subjected to LCHR. Radiological reduction, was not attempted in any cases due to delayed presentation (over 4 days).

No patient had clinical evidence of peritonitis but abdominal distension was present in 28 cases.

The method used was to insert a 5mm scope (by Hasson technique) at the umbilicus. CO2 pneumo-peritoneum was achieved using 6-8 mmHg of pressure.

A one-liter saline bag was placed at 150 cm above the patient and connected to a large Foley's catheter which was placed in the rectum. The intussusception was reduced by hydrostatic pressure under laparoscopic surveillance.

Reduction was thought to have failed if after 15mins reduction had not been achieved.

Results: Thirteen reductions were achieved (40%), these patients were discharged the next day. No recurrences were noted in the follow-up period.

The remaining 19 cases, who had failed LCHR had attempted manual reduction via a standard laparotomy open operation. This failed in every case thus necessitating resection.

Discussion: LCHR provides an alternative method for the reduction of idiopathic intussusception in children, conversion to open operation (if necessary) can be done without delay.

The technique is simple and failure necessitated bowel resection in the reported series.

p005: INFLAMATORY BOWEL DISEASE

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Inflamatory bowel disease is a generic term used to describe idiopathic disorders associated with a gastrointestinal inflammation: Crohn´s disease and ulcerative colitis. We are presenting six children with inflammatory bowel disease, 4 of them with ileitis,and the other 2 with an ulcerative colitis. In 4 cases of Crohn´s disease, laparoscopic surgery was performed in all affected segments. The 2 children with ulcerative colitis were subject to a total colectomy by laparoscopy,with ileo terminal resection. The colon is removed through the anus. A protective ileostomy is left,creating a reservoir with an ileal loop (in J) anastomosed to a rectal pouch, amputated about 10cm with endoanal mucosal extirpation. The ileostomy is closed at a later stage.The children with Crohn´s disease had a very variable evolution.One case went very well. Another girl needed ileo-colic resecction, complicated with an acute hemorragic colitis,that required emergency total colectomy,ultimately dying due to multiple complications. A 3.case required 2 laparoscopic cleaning of abscesses and with the diagnosis of stenosis was scheduled for resection,not cleaning finding intraoperatory pathology. A 4.case an ileo-colic resection was performed, with good evolution up to this moment. The two cases of ulcerative colitis had a satisfactory outcome. In our experience,a little bit more than 50% of children carrying inflammatory bowel diseases need surgical treatment.

p006: PEDIATRIC LAPAROSCOPY IN SUSPECTED ACUTE APPENDICITIS - WHAT ELSE CAN IT BE ?

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Purpose: To evaluate the role of laparoscopy in diagnosing other pathologies in pediatric patients suspected of acute appendicitis.

Materials and Methods: Eighteen patients who underwent laparoscopy for signs and symptoms suspicious of acute appendicitis but were found to have diagnoses other than acute appendicitis were reviewed.

Results: All the patients presented with right lower quadrant abdominal pain, 12 (67%) had either vomiting or anorexia in addition and 5 (28%) had the triad of pain, vomiting or anorexia and fever. There was significant neutrophilia in 14 (78%) patients. Nine patients underwent either ultrasonography or computerised tomography of the abdomen preoperatively, of which 3 were diagnosed as acute appendicitis.The myriad of pathologies found during laparoscopy included omental infarction (4), ascending colonic adhesions (3), ileitis (3), mesenteric adenitis (2), infarcted fimbrial cysts (2), right ovarian teratoma (1), right ovarian torsion (1), perforated Meckel's diverticulitis (1) and colonic diverticulitis (1). Two of the patients with colonic adhesions had histological evidence of resolved appendicitis and 1 had a normal appendix. All the therapeutic procedures were performed laparoscopically. Thirteen patients had appendectomies performed, in addition. There were no postoperative complications.

Conclusion: In addition to being minimally invasive, laparoscopy is valuable in identifying alternative pathologies in children with suspected acute appendicitis which may perhaps be missed through conventional Lanz incision.

p007: LAPAROSCOPY IN COMPLICATED PEDIATRIC APPENDICITIS

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BACKGROUND: Complicated appendicitis (gangrenous or perforated) has been associated with increased risk for postoperative complications especially intraabdominal abscess. Caution has been advised when attempting laparoscopy in such cases.

OBJECTIVE: To assess the incidence of intraabdominal abscess after laparoscopic appendectomy in pediatric patients with complicated appendicitis.

MATERIAL AND METHODS: Retrospective review of pediatric patients presenting with acute appendicitis in a single teaching institution who underwent laparoscopic appendectomy by a single surgeon. 52 consecutive pediatric patients with acute appendicitis underwent laparoscopic appendectomy. All laparoscopic procedures were completed without conversion.

RESULTS: Five out of 52 patients (10%) had complicated appendicitis. One out of 5 patients (20%) with complicated appendicitis developed postoperative intraabdominal abscess and underwent laparoscopic drainage during the same admission. No other complications were noted. None of these patients was readmitted for wound infections or intraabdominal abscesses. The single postoperative abscess occurred early during our initial experience with laparoscopic appendectomy.

CONCLUSIONS: Laparoscopic appendectomy seems to be a safe alternative for the treatment of complicated appendicitis in children. Caution is recommended during the initial experience of surgeons. Close postoperative follow-up and a high index of suspicion for development of complications are recommended.

p008: LAPAROSCOPY ASSISTED TREATMENT FOR INTESTINAL DUPLICATIONS

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Videolaparoscopy can help treating many bowel diseases and the use of the umbilical port has been shown to be of great value to avoid suturing inside the abdomen and to reduce ports. The authors present a series of intestinal duplications (ID) removed through the umbilicus with laparoscopic techniques. Methods: 6 children presented with ID confirmed laparoscopically after admission for abdominal cyst (n=4), gastrointestinal bleeding (n=1) or suspiction of complicated appendicitis (n=1). The anomaly was located at the ileum (4), distal jejunum (1) or ileocecal valve (1). The ID was confirmed using an umbilical laparoscope and manipulating through a 3 or 5-mm trocar at the left abdomen or at the umbilicus (1-port technique). The cysts were aspirated by a percutaneous needle, and the compromised bowel was withdrawn through the umbilicus. In the bleeding case the non-cystic ID was easily pulled out. The perforated infected case needed 3 trocars. Under the semicircular umbilical incision, the fascia was enlarged to ease the bowel exteriorization, followed by extracorporeal enterectomy (5) or right hemicolectomy (1). Results: No intraoperative complications occurred. All children recovered uneventfully and were fed by the 2nd postoperative day. Conclusions: Laparoscopy allowed localization and diagnostic confirmation of the ID, indicating the sites for punctures, and making it easier to pull out the bowel for transumbilical extracorporeal enterectomy, even for large enteric cysts.

p009: SUBTOTAL AND TOTAL HIRSCHSPRUNG DISEASE: TREATMENT BY MINIINVASIVE SURGERY

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Rectal and rectosygmoide Hirschsprung disease can be managed in new born with laparoscopic technique or via trans anal way without laparoscopy.

In long segment disease a previous colostomy is preferred by most pediatric surgeons. These cases can benefited from mini invasive surgery.

Three cases of subtotal hirschsprung disease , with the transition zone in the hepatic flexure of the colon , have been managed by mini-invasive surgery in the department of pediatric surgery in the children hospital of Rabat Morocco during two years (2001, 2002).

The rectosigmoid, the descending colon and splenic flexure are mobilized via laparoscopy .The dissection is then continued a long the transverse colon until the site of the colostomy.

The colostomy is liberated, closed and taken down in the peritoneal cavity.

The cecum and ascending colon are easily dissected via the wound of the colostomy.

The transanal mucosectomy is performed as described by K.Georgenson .

The colon completely free is then pulled down through the rectal sleeve until the ascending colon or the cecum is visualized .

The colon is then transected, the anastomosis is carefully made between the new rectum and the distal mucosal cuff.

The operative time is about three hours. The patient is feed on the first post operative day and discharged on the second to fourth post operative day .

In conclusion , sub total and total hirschsprung disease can benefited from mini invasive surgery.

p010: ENDOSCOPIC SUBMUCOSAL INJECTION FOR INCONTINENT ACE STOMA - THE ESI-ACE PROCEDURE

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The Malone Antegrade Continence Enema (MACE) procedure is the most successful treatment for intractable fecal incontinence. Several series report stomal incontinence of either flatus or feces in up to 8%. We report an endoscopic procedure performed for a leaking MACE stoma (Endoscopic Submucosal Injection for incontinent MACE - ESI-ACE). A 7-year old girl was born with a lumbar myelomeningocoele and neuropathic bowel and bladder. She underwent formation of MACE at the time of bladder augmentation at the age of four years. A classic reversed appendicocecostomy was formed. Three months later the stoma began to leak feces causing skin irritation and soiling of clothes. A 9Fr cystoscope was passed down the MACE track allowing submucosal injections of Macroplastique (Uroplasty BV) into the appendix. There was a marked improvement initially with only occasional leakage. The degree of leakage progressively worsened and so a second endoscopic injection was performed . On this occasion Deflux (Q-Med) was injected. At three months follow up there is a marked reduction in the frequency of leaks and the patient and her mother are very satisfied. We describe a simple endoscopic procedure to treat incontinent MACE stomas. This technique could also be applied to any catheterisable conduit eg. Mitrofanoff or Monti. Using this technique could avoid the need for revisional surgery.

p011: LAPAROSCOPIC DIAGNOSIS AND TREATMENT OF A RIGHT PARADUODENAL HERNIA IN A CHILD

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Diagnostic laparoscopy may useful to reveal the initial cause of recurrent abdominal pain. Some patients with paraduodenal hernia (PDH), which is a rare internal hernia, present recurrent abdominal pain. Herein, we report laparoscopic diagnosis and treatment of a right PDH in a child.

Case: A 13-year-old boy was admitted to our hospital because he had suffered from recurrent abdominal pain for several years. Imaging studies showed no remarkable signs except intestinal malrotation. Laparoscopic approach was thus considered for exploration. An initial camera port was placed beyond umbilical portion, and three ports were added. The laparoscopic exploration visualized the entire intestine beneath the thin capsule behind the ascending colon. A diagnosis of a right PDH was established through laparoscopy. The lateral band was initially dissected rather than reduced the herniated bowel. Intraabdominal pressure was set up to 12mmHg and table position was utilized to facilitate the retraction of intestine, and the redundant sac was successfully excised with care, avoiding injury to the mesenteric vessels. The operative time was 240 minutes. There was no procedure-related complication, and he has remained asymptomatic.

Conclusions: Laparoscopy is an attractive technique for the evaluation of a case with recurrent abdominal pain. Laparoscopic treatment of a right PDH in children is technically feasible and may become an alternative surgical option.

p012: LAPAROSCOPY-ASSISTED REPAIR FOR PROLAPSED COLOSTOMY IN AN INFANT

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Aim: To report a simple, minimally invasive, and effective technique for repair of prolapsed colostomy using laparoscopy in an infant.

Methods: Our case was a girl with cloacal extrophy and bilateral renal dysplasia. A loop colostomy was created on day 1 after birth. However, she had multiple episodes of colostomy prolapse beginning 3 months postoperatively. At 6 months of age, weighing 4.2kg, we performed our laparoscopy-assisted repair. After induction of general anesthesia, the prolapsed proximal colon was reduced manually. A 5mm trocar was inserted through the umbilicus. A laparoscope was introduced through the trocar to examine the peritoneal cavity. There were no adhesions between the reduced colon and the abdominal wall. A pair of long forceps was introduced into the lumen of the proximal colon through the stoma under direct vision through the laparoscope, and the colon mobilized with the forceps. The colon was then anchored firmly to the abdominal wall with large U sutures each placed at 3cm, 6cm, and 9cm from the stoma. Each suture was tied over a bolster without undue tension.

Results: Operating time for the procedure was 45 minutes. Postoperative recovery was uneventful, and there was no recurrence of colostomy prolapse. However, she died of renal failure secondary to renal dysplasia 10 months after the repair.

Conclusion: This is the first report of laparoscopy being used for control of prolapsed colostomy. Our technique is simple, effective, and minimally invasive.

p013: Laparoscopic-assisted endorectal ascending colon pull-through for Hirschsprung disease.

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Objective: By performing laparoscopic endorectal pull-through procedure with UHS (Ultracision Harmonic Scalpel) on patients with long-segmental Hirschsprung disease who are not suitable for trans-anal colonic pull-through procedure, the authors discussed the operating ways and characteristics of this minimal invasive operation.

Methods 8 cases with long-segmental HD from June 2000 to November 2001 underwent laparoscopic endorectal pull-through procedures (Deloyer¡¯s operation, modified Soave¡¯s operation). The operative procedure, bleeding conditions, postoperative complications and defecating conditions were observed carefully.

Results All patients were operated successfully. The average operating time was 218 minutes (ranging from 190 to 240 minutes). The amount of bleeding during operation in one case was 20 ml while the others less than 5 ml. No postoperative hemorrhage and other early complications occurred. All patients were followed up from 3 to 20 months. They defecated 1 to 8 times per day without fecal incontinence or contamination. Loose stool were observed in 5 cases during postoperative 3 months and became normal after half a year.

Conclusion Laparoscopic endorectal pull-through procedure with UHS is an effective treatment for long-segmental HD. It has good early results and is a complement to trans-anal colonic pull-through and open procedures.

p015: INCIDENTAL APPENDECTOMY DURING LAPAROSCOPIC SPLENECTOMY IN CHILDREN WITH SICKLE CELL ANEMIA - NEW, SAFE AND WORTH IT!

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Background: Incidental Appendectomy (IA) during Laparoscopic Splenectomy (LS) has not been described previously. Sickle Cell Anemia (SCA) children often present with recurrent abdominal pain; hence the elimination of a potential surgical cause might facilitate the diagnosis and eliminate unnecessary tests and consults. A prior report of IA with laparoscopic cholecystectomy in SCA patients showed no increase in morbidity, prompting us to review our experience with IA during LS.

Methods: Retrospective review of the pediatric sickle cell patient database between 1990-2001.

Results: Three groups were identified. Group I (n=10)- open splenectomy without appendectomy, Group II (n=12)- LS with IA, and Group III (n=25)- nonsplenectomized patients with abdominal pain. There were no wound infections or septic complications in either surgical group. There were 68 admissions for abdominal pain, with 33% being from the postoperative groups. Two patients from Group III had subsequent appendicitis, one of whom had a delay in diagnosis due to confusion with vaso-occlusive crisis. 55.9% of all admissions for abdominal pain had a plain X-ray or ultrasound. No Group II patients had an ultrasound .

Conclusions: IA during LS should be considered in patients with SCA. It can be safely performed, does not have a higher rate of wound infection, eliminates expensive radiologic studies, and might help to avoid diagnostic dilemmas in these complex patients with recurrent abdominal pain.

p016: LAPAROSCOPIC APPENDECTOMY FOR PERFORATED APPENDICITIS - INDICATED OR CONTRAINDICATED?

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Perforated appendicitis (PA) is considered a contraindication to laparoscopic appendectomy (LA). As PA may not be diagnosed preoperatively, our occasional pre-2000 experience with LA was not associated with increased morbidity. Since 2000 we have obtained informed consent for either open appendectomy(OA) or LA on all patients with the preoperative diagnosis of PA. A comparison of the operative and postoperative management including operative time, hospital stay,complications etc was done in a cohort of 50 patients (25 LA and 25 OA).

There were no intraoperative complications but operative time was lengthened with LA. Five patients following OA developed intraperitoneal or wound abscesses requiring drainage. Hospital stay was twice as long in the OA patients.Intravenous antibiotics were administered for 7 days after OA and for 4 days after LA. Requirement for intravenous analgesia was 4.5 days in OA and 3 days in LA. Return to regular activities tended to be faster in the post-LA children (7days vs 10 days).

LA may be a safe alternative to OA in a suitably experienced facility.

p017: TREATMENT OF RECTAL PROLAPSE BY LAPAROSCOPIC SUTURE RECTOPEXY IN A 22-MONTH CHILD

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As surgeons gain more experience with laparoscopy in children, the advantages of this technique is becoming more apparent . The advantages of laparoscopic procedures include a shorter recovery time, a better cosmetic result, particularly in young females and an early return to normal activities. We present the case of a 22 month old female child who presented with severe recurrent rectum prolapse successfully managed using the laparoscopic simple suture rectopexy approach.

The procedure basically included bilateral incisions of the peritoneum at the level of the sacral promontory, mobilization of the rectum from the presacral fascia down to the pevic floor, after preserving the lateral stalks of the rectum. After identifying the iliacal vessels and the ureter , two 3-0 nonabsorbable sutures were bilaterally placed to secure the rectum to the presacral fascia. The procedure was completed without complications and the follow-up examinations were uneventful.

p018: LAPAROSCOPIC PYLOROMYOTOMY: SAFE, COST EFFECTIVE AND COSMETICALLY SUPERIOR

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Introduction: We recently introduced the laparoscopic approach to pyloromyotomy(LP) in our practice. Presented here are results of one surgeon's first 25 such cases. The same surgeon's open(OP) results are compared.

Technique: An umbilical 3mm trocar was used. Two 2-3mm lateral incisions are made. A 2.7mm grasper is passed through the right and a disposable retractable arthroscopic knife is passed from the left. A serosal pyloric incision is made and the knife is exchanged for a laparoscopic pyloric spreader to complete the procedure. OP was performed through a supraumbilical incision in all except one. One patient had a right upper quadrant mini-laparotomy. This was a patient with cyanotic congenital heart disease.

Results: All the 32 consecutive pyloromyotomies performed by one surgeon in one institution were analyzed. There were 7 OPs and 25 LPs. No LP was converted to Op in this series. There was one mucosal tear in OP group. There were no other complications in either group. Data is presented OP:LP:- Age, gender and body weights were similar between the groups. Duration of symptoms is 14:5.5 days; total length of stay is 2:2 days; post-op length of stay is 24:23 hours; operating time is 33:30 minutes; operating room cost is 566:878 US$; pharmacy cost is 37:30 US$ and total cost is 1634:1771 US$ all are medians. Complications are 14%:0%.

Summary: LP is a safe alternative to the OP. Overall cost is similar.

p019: INTRAOPERATIVE ENDOSONOGRAPHIC ASSESSMENT OF PELVIC FLOOR MUSCLES DURING LAPAROSCOPY-ASSISTED COLON PULL-THROUGH FOR HIGH IMPERFORATE ANUS

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Purpose: Intraoperative endosonography during laparoscopy-assisted colon pull-through (LACPT) for high imperforate anus can greatly enhance the precision of positioning the pull-through canal. The aim of this study was to assess the components of the pelvic floor muscles (PFM) during LACPT.

Methods: Two male infants (#1, #2) with rectourethral fistula were examined. A proctoscopic ultrasonographic probe (7.5-MHz, 12mm in diameter) was inserted along the course of the proposed pull-through canal (PTC) under laparoscopic control to assess the structure, thickness, and lengths of the main components of the PFM, i.e., the pubococcygeus (PC), puborectalis (PR), muscle complex (MC), and external sphincter (ES).

Results: Weight at LACPT was 8.0 kg in #1, and 5.9 kg in #2. In both cases, the PTC lay centrally within the PFM. In #1, PC, PR, MC, and ES were 2.4 ± 0.3 mm, 2.0 ± 0.1 mm, 3.6 ± 0.4 mm, and 3.8 ± 0.1 mm, respectively. In #2, PC, PR, MC, and ES were 1.9 ± 0.1 mm, 1.8 ± 0.1 mm, 3.1 ± 0.1 mm, and 3.4 ± 0.1 mm, respectively. The length of the PFM was 42mm in #1, and 31mm in #2.

Conclusion: Intraoperative endosonography during LACPT permitted examination of the PFM in patients with high imperforate anus. By confirming the exact position of the probe laparoscopically, the true size and structure of the PFM (in particular the PC and PR) could be identified.

p021: LAPAROSCOPIC PYLOROMYOTOMY FOR INFANTILE HYPERTROPHIC PYLORIC STENOSIS

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PURPOSE: To evaluate the advantages and disadvantages of laparoscopic pyloromyotomy (LP) compared to open conventional pyloromyotomies: right upper-quadrant approach for pyloromyotomy (RP), and the umbilical approach for pyloromyotomy (UP).

METHODS: Clinical records of 175 RP (1983-1994), 71 UP (1994-1997) and 98 LP (1997-current) were evaluated retrospectively. Weight at birth, age and weight at surgery, blood base excess (BE) on admission, length of operation, complications, and post-operative length of stay were compared among the groups.

RESULTS: There were no significant differences in either age, weights, or blood BE among the three groups. The length of operation in RP group was 29±8 min, which was significantly shorter than that in UP (40±10 min) and LP (41±14 min) groups. The average length of operation in LP for each surgeon decreased once the surgeon had performed more than 5 LPs. Length of stay was significantly shorter in LP (4.3±1.1 days) than in RP (8.3±4.0 days) and UP (8.7±7.8 days). There were 9 complications in UP, 4 in LP, and 3 in RP group.

CONCLUSIONS: Our results suggest that in addition to the obvious advantage of minimal cosmetic deformity, laparoscopic pyloromyotomy also offers the benefit of shortened hospital stay.

p022: LAPAROSCOPIC NISSEN FUNDOPLICATION IN NEUROLOGICALLY IMPAIRED CHILDREN

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The purpose of this study is to evaluate the clinical outcome of laparoscopic Nissen fundoplication in neurologically impaired children.

Patients and Methods: A total of 42 children were enrolled in this study. Thirty-six children were profound neurologically impaired with cerebral palsy and 19 of those had severe scoliosis. The mean age and body weight were 6.7 years and 13.2 kg respectively. The laparoscopic procedure was performed using a five-trocar technique with 5 mm instruments. All patients underwent concomitant gastrostomy placement.

Results: Two children required conversion to open procedure. The remaining 40 children underwent laparoscopic procedure successfully. The mean operative time was 4.4 ± 0.9 hours. The association of scoliosis accounted for the longer operative time. The total morbidity rate was 30%. Early postoperative complications were relieved with conservative managements. Emesis was cured over 90%, whereas respiratory symptoms were relieved in 56%. Six children had wrap failure, and 3 of those with reflux symptoms underwent open redo procedure. Five children with persistent respiratory symptoms died within 3 years after surgery.

Conclusions: The outcome of laparoscopic Nissen fundoplication in neurologically impaired children compare favorably with open procedure. Because of high incidence of wrap failure and late death in this patient population, modification of the operative procedure and the patient selection criteria should be considered.

p023: LAPAROSCOPIC HELLER MYOTOMY AND DOR FUNDOPLICATION FOR PEDIATRIC ESOPHAGEAL ACHALASIA: RECENT TECHNICAL MODIFICATIONS OF AN ESTABLISHED PROCEDURE

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Many pediatric surgeons have been hesitant to perform laparoscopic Heller myotomy because of its technical difficulty, as well as the difficulty (and expense) of coordinating continuous intra-operative flexible esophagoscopy. We describe two recent technical modifications allowing a controlled, safe procedure without the need for esophagoscopy.

Three children, ages 10-14 yrs, with esophageal achalasia underwent laparoscopic Heller myotomy using hook cautery. A #6 Fogarty catheter was passed through the mouth, into the stomach, and then gently pulled back, distending the cardio-esophageal junction and the esophageal lumen, allowing improved laparoscopic visualization of the myotomy length and depth as it was performed. The surgeon was able to reach above the drape to manipulate the Fogarty catheter and therefore gather both visual and tactile confirmation of myotomy completeness. Following division of the short gastric vessels using the harmonic scalpel, a Dor fundoplication was perfomed using the Suture Assist Device (Ethicon), with pre-tied knots.

All patients were fed and home within two days. There were no esophageal leaks. Each patient has had complete relief of preoperative symptoms.

In summary, transoral placement of a #6 Fogarty catheter aids in the performance of laparoscopic Heller myotomy in children, obviating the need for intraoperative flexible esophagoscopy. In addition, use of the Suture Assist Device, with pre-tied knots, aids in the performance of laparoscopic Dor fundoplication in these patients.

p024: A NEW TECHNIQUE OF LAPAROSCOPIC PYLOROMYOTOMY TO TREAT DELAYED GASTRIC EMPTYING: HOOK, SPREAD, AND PULL

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Purpose: Most patients with delayed gastric emptying are treated with pyloroplasty. However, pyloromyotomy is easier to perform and has less morbidity. A new technique of a laparoscopic extramucosal pyloromyotomy is described.

Methods: 10 patients (range: 9mo. to 14 yrs. ave: 6yrs.) with scintiscan proven delayed gastric emptying underwent a laparoscopic pyloromyotomy. 6 also had severe gastroesophageal reflux disease and required a laparoscopic Nissen fundoplication. The pyloromyotomy (extramucosal) was performed as follows. Inverting the proximal duodenum identified the distal pylorus. A deep seromuscular incision through the outer muscle layer was made with the cautery from the distal pylorus to the distal antrum. The inner muscular layer was spread to expose the mucosa, the hook was then inserted under the muscle and pulled on a cutting current to complete the myotomy while simultaneously using the spread dissector to undermine and protect the mucosa.

Results: All patients recovered from the surgery uneventfully. One patient was converted to open to treat a distal mucosal perforation caused by a failure to precisely identify the distal pylorus. Another patient was reoperated upon for a subsequent fundic perforation. 8 patients were followed for at least 6 weeks and 7 of these are off medications.

Conclusion: With precise identification of the pylorus, the hook, spread and pull technique is a simple way to perform a laparoscopic pyloromyotomy.

p025: LAPAROSCOPIC GASTRIC MOBLIZATION AND PULL-UP IN A 3 MONTHS OLD CHILD WITH LONG-GAP ESOPHAGEAL ATRESIA

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Laparoscopic assisted gastric pull-up procedure has been performed for esophageal replacement in adults. We report the first case, who underwent laparoscopic assisted esophageal replacement for long-gap esophageal atresia.

Patient and Procedure: A 3 months old girl with Down syndrome and long-gap esophageal atresia initially underwent gastrostomy. Esophageal replacement was performed at the age of 3 months. The laparoscopic operation included complete mobilization of the stomach, resection of the lower esophageal stump (Endo-GIA), pyloroplasty and transhiatal dissection. After a right cervical approach the gastric pull-up was performed through the posterior mediastinum and the upper anastomosis was completed. Finally, a laparoscopic jejunostomy was done.

Results: The duration of the operation was 4.5 hrs. The intra- and postoperative course was uneventful. Feeding via the jejnuostomy was started on day 1. Gastric emptying of contrast media was documented by x-ray examinaton and oral feeding, which was started on day 7, is tolerated well.

Conclusion: This is the first report on laparoscopically assisted gastric pull-up procedure for long-gap esophageal atresia. Laparoscopically assisted gastric pull-up procedure respresents an option for the treatment of long-gap esophageal atresia.

p026: LAPAROSCOPIC REPAIR OF GASTROESOPHAGEAL REFLUX FOLLOWING SURGICAL MANAGEMENT OF CONGENITAL ESOPHAGEAL ATRESIA WITH TRACHEO-ESOPHAGEAL FISTULA

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After surgical management of esophageal atresia (EA) and tracheo-esophageal fistula (TEF), many patients exhbit evidence of gastroesophageal reflux (GER) and some have esophagitis. In this paper, we report two cases with such conditions that have undertaken laparoscopic repair.

[Patients]: The patients are a three years old boy and a 9 months old male infant. The symptoms of the first case were bronchial asthma and hematemesis and those of the second case were failure to thrive and repeated pneumonia. The surgical procedure for EA with TEF was primary anastomosis with gastrostomy in case 1 and without gastrostomy in case 2. As for postoperative complication, recurrence of TEF was seen in case 2 and the fistula was resected. In both cases, esophageal endoscopy showed severe esophagitis (Los Angels classification; D).

[Operation]: Adhesion between stomach and peritoneum due to previous gastrostomy was easily detached. In both cases, hiatal sliding hernia was notified. Intra-abdomial esophagus was seemed to be short. Phreno-esophageal ligament was resected completely and thoracic esophagus was detached from surrounding tissue to make longer intra-abdominal esophagus. This procedure was not difficult, although preoperative esophagitis was severe. After closing the crus, 360-degree fundoplication was performed.

[Results] No adverse complications were observed in all cases. Symptomatic GER and radiographic recurrence of hernia were not seen in both cases.

p027: ANEXIAL TORSION IN YOUNG GIRLS AND ADOLESCENTS: PROPOSAL FOR CONSERVATIVE MANAGEMENT

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Anexial torsion seems to occur with greater frequency than generally expected. Acute anexial pathology as all surgical acute disease is treated laparoscopically at our institution since1997. A patient with recurrent abdominal pain and and acute attack lasting several days was diagnosed by ultrasound scan as presenting ovarian/anexial torsion. Colour doppler sonography was negative for blood flow. Laparoscopic approach revealed a black-bluish right ovary twisted three times around its axis. It was untwisted and left in place without change in colour. Postoperative course was uneventfull. Follow-up with ultrasound and doppler postoperatively revealed a slow but steady improvement over the following two month with completely normal images at 6 month after surgery. A second patient with a history of over 20 hours of low abdominal pain presented at laparoscopy with double ovarian and falopian tube torsion. The anexial mass was black-bluish and seemed necrotic. Having heard from the experience with the other patient the experienced surgeon untwisted the mass and left it in place with little hope for recovery. No complications occured and one month after surgery the doppler flow was positive.

Conservative approach to anexial torsion is gainig more adepts. As up to date there is no way of firmly establishing a nonviable organ untwisting and near follow up with ultrasound/doppler scan seems to us a reasonable option, specially in young girls.

p028: ERGONOMICS STUDY IN THE HIGH IMPERFORATED ANUS ENDOSURGERY

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Recently, a laparoscopic/perineal approach in one single time has been developed. The new anus is located in middle of the perineal muscular complex contraction. We are presenting 2 patients with high imperforated anus with recto-uretral fistula(prostatic level). Both patients carried a left colostomy and dissection of the rectum and the terminal sigmoid. The fistula was identified,tied and split with suture in both cases,once the rectum was freed from the pelvic floor. The sphyncterean muscles can be identified perfectly,as well as the middle line,the uretra, center of this middle line between guided pubocoxigean muscular bellies; a mapping of the sphincter is performed with muscular transcutaneous electroestimulator. A guide is introduced through a minimal incision in the center of the future anus, vertical median, and a trocar is passed through this line and within the muscular mass. If we are satisfied with its good location,we start dilating with trocars of different sizes. We pass a 10mm Babcock clamp and the rectum is descended to the perineum. In the 2. case we used all the ergonomic resources we currently have:invertogram, colostogram, abdominal ultrasound,perineal electroestimulator, Zeus´mechanic arm,the robotic,etc.. The evolution in both cases was very good.It is fundamental to make minimal perineal dissection, preserve the distal rectum and place it within the elevator or the anus and sphincterean muscular complex.

p029: SUCCESSFUL COMBINED, ENDOSCOPIC AND RETROPERITONEOSCOPIC, TREATMENT OF MAJOR RENAL TRAUMA. A CASE REPORT.

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The treatment of major renal trauma is controversial. A 5-year-old boy with a blunt abdominal trauma and major injury of left kidney was admitted. A contrast CT scan showed a deep parenchymal laceration through the mid- to the lower pole of the left kidney with large perirenal collection. The child was stable and managed conservatively. On day 2 he developed abdominal distension and temperature. A contrast CT scan was repeated showing a collecting systems laceration with urinary extravasation and the lack of visualization of the left ureter. The renal injury was grade IV (American Association for the Surgery of Trauma classification). The child remained hemodynamically stable. A ureteral double J stent was inserted by cistoscopy and a pararenal drainage (Redon 15 FR) was placed at the level of the parenchymal laceration retroperitoneoscopically by one trocar approach trough an operative laparoscope (10 mm). On day 17 the urine from the pararenal drainage stopped, and the drainage removed. On day 20 the child was discharged with the double J in place. After two weeks urography showed no obstruction and the double J was removed. At 3 months follow-up blood pressure, urinalysis, blood tests were normal and a MAG-3 scan demonstrated a defect of the site of the renal laceration, function 36% without obstruction.

p030: LAPAROSCOPIC HEMINEPHROURETERECTOMY IN CHILDREN WITH PYELOURETERAL DUPLICATIONS

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A few reports have shown the feasibility of laparoscopic heminephroureterectomy (LHENU) in children, mostly by retroperitoneal approach. We report our experience with transperitoneal LHENU in 18 children with several types of complete pyeloureteral duplications (PUD).

Methods: LHENU was done in 10 girls and 8 boys, 29 days to 10 years old (mean 2.6), performed without clips and with 3 trocars. The procedures were bilateral in 5 cases (making out 23 HENU), 2 had cecoureteroceles, 1 had horseshoe kidney, and 12 had concomitant Pfannenstiel approaches for vesical procedures (11 ureteroceles, 8 reflux). Other 6 duplicated units with normal function were not removed: 3 ureters were reimplanted due to reflux, 2 had ureteroceles and 1 was stenotic.

Results: Mean overall operative time was 135 minutes (range 45- 285). Blood loss was less than 5 mL and there were no intraoperative complications. All specimens were removed through the umbilicus or the inguinal incision, so no incision or scar larger than 5-mm turned visible at the abdomen. Six children were discharged home on the day of surgery. Mean follow-up: 22 months. No late bowel or port complications developed. All residual renal units have shown good function except 1, who had reflux and needed reimplantation.

Conclusions: LHENU may be performed in children with PUD with little postoperative discomfort, minimal morbidity, excellent cosmesis, short hospital stay and low cost. It may even be done as an outpatient procedure.

p031: LAPAROSCOPIC PERITONEAL DIALYSIS: TECHNICAL ASPECTS

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Catheters for peritoneal dialysis may require open or percutaneous blind insertion. The laparoscopic approach permits to visualise the correct location of the tip of the catheter inside the abdomen, without causing large peritoneal adhesions that can impair its functioning. Moreover, the laparoscopy can visualise the presence of adhesions or of the omentum in the pelvic cavity or an associated inguinal hernia, indicating allied manoeuvres in order to prevent possible complications. We started a prospective study to demonstrate the benefits of the insertion of peritoneal catheters for dialysis by a video-assisted technique in small patients. Three 3-5 mm ports were used, one for the camera and two operative channels. The catheter was inserted, at a site depending on the patient's size and secured with a purse-string on the muscular fascia. The posterior muscular fascia was dissected with the tip of the armed catheter or using a blunt trocar, creating a long preperitoneal tunnel in an oblique direction, to prevent leakage, displacement and obstruction. The distal cuff was positioned between the peritoneum and the posterior fascia of the rectus muscle, the proximal cuff was in the subcutaneous space. The tip of the catheter was located in left pelvis over the sigmoid colon. A subcutaneous tunnel was blindly created with the exit site in a downward direction. Omentectomy and herniectomy were always performed if necessary. The technique resulted fast and easy to perform and no complications were observed. Technical details and 12 months of clinical experience are presented.

p032: LAPAROSCOPIC HYSTEROSTOMY IN THE MANAGEMENT OF VAGINAL ATRESIA

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Vaginal agenesis is frequently missed until puberty. Undrained menstrual fluid will lead to hydrometra. The distended uterine cavity can cause severe pain and discomfort. We report the case of a 12 year old girl with complete vaginal agenesis that developed massive uterine distension and abdominal pain. Despite hormonal suppression of her menses, the pain could not be controlled medically and the patient was treated with laparoscopic hysterostomy for drainage. This was accomplished using 3 trocars (5 mm) and placement of a Foley catheter in the distended uterus. The uterine fundus was sutured to the undersurface of the abdominal wall in the supra-pubic area. Hemorrhagic fluid was effectively drained (500 cc's) with complete resolution of her symptoms. She was discharged 48 hours after the procedure. The drain was removed after two weeks and hormonal treatment was used to suppress her menses. There were no complications. The patient has remained asymptomatic during the 6-month follow-up period. This technique appears to be effective in the management of this unusual problem and should be considered for patients with vaginal agenesis and severe abdominal pain secondary to hydrometra.

p033: A SIMPLE AND SAFE LAPAROSCOPIC TECHNIQUE FOR PEDIATRIC INGUINAL HERNIA REPAIR

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Purpose: Inguinal hernia repair is a common operation performed by pediatric surgeons. Studies suggest that hernia sac dissection from spermatic cord structures causes testicular damage. We present a new technique of laparoscopic inguinal hernia repair (LIR) that may mitigate testicular injury.

Methods: From July 2001 to August 2002, 33 patients(10do-14yr) underwent LIR. This entails insufflation through a 4mm umbilical port, a 3.3mm 30deg. scope, and a 3mm grasper in the contralateral lower quadrant. A needle identifies the center of the internal ring where a 1mm incision is made. A 3-0 PDS suture(tapered needle) is placed through transversalis fascia(TF) and peritoneum(P) laterally; then grasping and incorporating P lateral to the testicular vessels(TV), between TV and vas deferens(VS), and medial to VS. The needle is pushed through the abdominal wall, cut and retracted into the abdomen. Through the inguinal incision, a straight needle with a distal hole penetrates the TF and P, at the medial aspect of the internal ring. The suture is threaded, pulled into the wound and tied to close the defect.

Results: The average operative time is fifteen minutes. There are no recurrences or hydroceles to date. One complication of bowel obstruction occurred secondary to bowel wall incorporation in the umbilical closure.

Conclusions: Laparoscopic inguinal hernia repair is a simple and safe procedure that can avoid injury to the testicle and spermatic cord.

p034: LAPAROSCOPY ASSISTED REPAIR OF UNUSUAL URETERAL STRICTURE

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Ureteral obstruction caused by ovarian vessels is a rare congenital anomaly. We report a new technique for the diagnosis and the treatment of ureteral stricture using the laparoscope.

A two-year old girl was referred to our department because of the right hydronephroureter. Imaging studies including sonography, MRI and retrograde pyelography demonstrated dilatation of the right pelvis and upper one third of the right ureter. The diagnosis of the right ureteral stenosis was made.

At surgery, laparoscopy revealed the right ureteral stenosis due to ovarian vessels which were crossing over and compressing the right ureter. Then the ovarian vessels were dissected and freed from the right ureter using a laparoscopic dissector. However, the stricture of the right ureter still remained, and the percutaneous pyelo-ureterography with the guide of a laparoscopic retractor, was performed, which demonstrated the intrinsic stricture of the ureter.

Then a small incision was made in the right lower abdomen just above the ureteral stricture, and the resection of the narrow portion of the ureter following end-to-end anastomosis was performed successfully. The postoperative course was uneventful.

p036: LAPAROSCOPIC MANAGEMENT OF CROSSED TESTICULAR ECTOPIA IN INFANTS

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Crossed testicular ectopia is a rare condition and it may be an unexpected finding at the operating table. A 3 month old boy came for right inguinal hernia and unpalpable left testis. An ultrasound scan showed a testis-like image at the right internal inguinal ring while failed to show the testis on the left side. At the time of the hernia repair, a diagnostic laparoscopy through a 5mm transumbilical port was performed, showing the left testis at the right internal inguinal ring. The infant underwent the conventional inguinal approach for hernia repair. During the dissection of the sac, the left ectopic testis came out retroperitoneally: its pedicle was carefully dissected from the contralateral one and the right hernia repaired. Then two trocars (3mm) were positioned bilaterally in the lower abdomen: the left testis pedicle was further mobilized and pushed into the left inguinal canal with no tension, the testis exteriorised through a left inguinal incision and orchiopexy performed. Only two cases of laparoscopically assisted correction of transverse testicular ectopia have been reported. Traditionally surgical correction has been performed leaving both spermatic cords in the same inguinal canal and fixing the ectopic testis into the contralateral hemiscrotum through a transeptal window. Laparoscopy compared to the transeptal approach allows a more anatomic orchiopexy with less tension on the ectopic spermatic cord and less risk of bilateral testis damage.

p037: EFFICIENCY AND SAFETY OF THE VIDEOASISTED PYELOPLASTY VS OPEN LUMBOTOMY IN CHILDREN

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A retrolective study was done from June 1997 to January 2000, Obtaining Group I from patients operate with our videoasisted technique (VA), and group II were those operated with a lumobotomy approach, the data analyzed was, age, sex, surgical time, analgesia, postop evolution, complications and succeed of the surgery, with different statistical methods.

Results: 36 units operated, 13 from group I, with a majority of males, no statistical difference with age, the surgical time was shorter in group I, and also the hospital time, with less analgesics administered, the efficiency of both techniques was 100%.

Conclusion: Our videaossited technique is safe, efficient and with some advantages over the classic method.

p038: LAPAROSCOPIC RENAL ABLATIVE SURGERY IN PEDIATRIC UROLOGY: INITIAL EXPERIENCE.

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INTRODUCTION: Laparoscopic Renal ablative surgery has established itself in adults. We evaluated the feasibility and results of laparoscopic renal ablative surgery in the pediatric population from our initial experience.

METHODS: We reviewed the records of all pediatric urology patients who underwent laparoscopic ablative renal surgery from 2000-2002. Age, sex, diagnosis, surgical technique, operative times, complications, and length of stay were evaluated.

RESULTS: Fourteen patients were identified - 7 males and 7 females. The median age was 2.5 years (range 5 months -18years). Patient diagnoses included multicystic dysplastic kidney (4), UPJ obstruction (4), ectopic ureter (3), obstructive megaureter (2), and posterior urethral valves (1). All patients had associated nonfunctioning renal units. Laparoscopic nephrectomy and heminephrectomy was performed in 12 and 2 patients respectively. A transperitoneal approach was used in all patients. Specimens were removed intact in all patients. The median operative time was 142 minutes (range102-270) for all patients and 122 minutes for simple nephrectomies. One patient had a serosal small bowel electrocautery injury which was recognized and repaired intraoperatively. The median length of stay was 1 day. One patient was readmitted after 2 weeks due to an infected ureteral stump.

CONCLUSION: Laparoscopic renal ablative surgery can be safely performed in the pediatric population, even in small infants. Naturally, further improvement in operative times can be expected as our experience evolves.

p039: INCIDENCE AND MANAGEMENT OF THE INGUINAL HERNIA DURING LAPAROSCOPIC ORCHIOPEXY

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During the laparoscopic approach of undescended testis, an associated inguinal hernia is a frequent finding that must be treated at the same time. Most of the works about laparoscopic orchiopexy don't mention inguinal hernia or its management in the same procedure. The objective of this presentation is to show the incidence and management of the inguinal hernia that were found during laparoscopic orchiopexy.

MATERIAL AND METHODS.- Between January 1999 and December 2002, 31 patients with 33 palpable and non palpable undescended testes were treated by laparoscopic orchiopexy.Patients were between 6 months and 9 years. We used 4 ports,and 2 mm instrument. When an associated inguinal hernia were found we only removed the membranes of the processus vaginalis and didn't closed the defect. All cases were treated by the same surgeon.

RESULTS. - The average surgical time was 50 minutes that included the orchiopexy and the treatment of the associated inguinal hernia.

We found inguinal hernia in 23 cases (69.9%). We didn't find any inguinal hernia in the opposite side of the undescended testis.In two patients with bilateral undescended testis that were approached in two stages three months later we confirmed the closure of the hernia defect.These 23 patients have 21.5 months average follow up and confirm no recurrence .

CONCLUSIONS. – We found a lower incidence of inguinal hernia than reported.Is not necessary to repair the peritoneum because the scar will join the edges of the canal and the parietal peritoneum will grow above.

p040: LAPAROSCOPIC FOWLERS STEVENS PROCEDURE IN PRUNE BELLY SYNDROME

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Introduction: Prune Belly Syndrome is characterized by the triad that include (a) hypoplasia of the abdominal wall musculature (b) urinary tract abnormalities and (c) bilateral cryptorchidsm. The abdominal as well as the urinary tract abnormalities can pose technical challenges in the laparoscopic management of the cryptordism that may not be encountered during the open procedure.

Patient and Method: A 2-year old male child with Prune-Belly Syndrome was managed laparoscopically for bilateral cryptorchidism using the Fowler Stevens procedure. The child presented with hypoplastic abdominal wall musculature which presented difficulties in trocar placement due to the increased wall elasticity as well as the decresed wall resistance. The megasystis, with urine oulet being provided only by the still persistant urachus due to severe stenosis of the urethra, further added to the level of difficulty.

Result: The Fowler Steven laparoscopic management was completed in a time of 35 minutes. Technical problems were encountered in insertion of the trocars against a reduced resistance of the hypoplastic abdominal wall.

Conclusion: Prune Belly children can present an unexpected element of surprise in laparoscopic procedures. Although, laparoscopic Fowler Stevens procedure is a routine operation in the management of cryptorchidsm, it is important to take into account the abdominal wall and the urinary pathology into serious consideration.

p041: LAPAROSCOPIC VARICOCELECTOMY VERSUS TRADITIONAL TREATMENT IN CHILDREN'S HOSPITAL ZAGREB CRAOATIA

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We reported our experience of 84 vericocelectomy in Childrens hospital Zagreb since 1997. when we initiated laparoscopic varicocelectomy. Laparoscopic procedure was performed on 38 patients and open varicocelectomy in 46 patients.All procedures were Palomo type operation with ligation of the artery and vein. We compared outcome data;relapse rate, presence of hydrocele, testicular and scrotal oedema as well as operative time and postoperative stay .

Resultates ;Relapse rate were o% LV verus 2.27 % OV, hydrocele O%LV verus 2.27 %OV, scrotal oedema 5,2 %LV versus 4.54 %OV.

Postoperative stay 3,4 days LV versus 6,8 days.

Operative procedure lenght 18,6 min LV verus 22,4 min in OV.

Conclusion ; Laparoscopic procedure in pediatric patients scored shorter hospital stay, shorter duration of operative procedure ,and almost same rate of complication as open surgery.

p042: LAPAROSCOPIC ANDERSON-HYNES DISMEMBERED PYELOPLASTY

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Objective: The feasibility and results of laparoscopic Anderson-Hynes dismembered pyeloplasty were evaluated, and we demonstrate our laparoscopic techniques using a videotape.

Material and Methods: Two children, 5-year old girl and boy, and one adult of 36-year old gentleman with proved ureteropelvic junction obstruction underwent laparoscopic Anderson-Hynes dismembered pyeloplasty via a transperitoneal route. Two hitch stitches were placed at the anterior wall of renal pelvis and were used to stabilize the pelvis like a puppet. The ureteropelvic junction was dissected, and then sacrificed. The proximal ureter was spatulated to create a wide anastomosis to the pelvis. After a stent tube via nephrostomy was placed by inserting a long 1.5mm catheter to the urinary bladder, the posterior anastomosis was sutured with 5 interrupted stitches using 6-0 PDS(tm). The anastomosis was then completed by closing the anterior wall by 4 interrupted sutures.

Results: The operative time was gradually reduced such as 270, 200, and 180 minutes, and the estimated blood loss was minimum. There was no conversion to open surgery and no other operation related morbidities. All patients have no demonstrable evidence of obstruction after surgery.

Conclusions: Laparoscopic Anderson-Hynes dismembered pyeloplasty represents an attractive alternative to conventional open pyeloplasty. It is technically challenging, however, with practice it may be completed in the same time as conventional open pyeloplasty. It offers results approaching those of conventional dismembered pyeloplasty.

p043: THE USE OF VAGINOSCOPY FOR STAGING AND TREATMENT OF RHABDOMYOSARCOMA OF THE VAGINA

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Rhabdomyosarcoma is the most common soft-tissue sarcoma found in children. Genitourinary sites comprise 20 percent of the primary location of these tumors. A polypoid form of the embryonal type of rhabdomyosarcoma, sarcoma botyroides, is often found in girls less than age 5. These tumors are usually localized to the anterior vaginal wall. Accurate staging has been limited to radiologic modalities such as ultrasound, CT, and MRI because the small caliber of the vagina in children prevents the use of specula. In addition, the traditional treatment with sharp curettage cannot predictably remove all visible tumor. In the past 30 years we have seen a shift in treatment from radical surgery to conservative surgery with chemotherapy and radiation with improved survival and preservation of normal anatomy and improved post -operative body imagery. We present a case of a 2 year-old child with a RMS of the vagina for which we utilized vaginoscopy to stage the tumor and then perform therapeutic resection using a 5-French bipolar electrode in normal saline medium through an operative hysteroscope. Vaginoscopic evaluation of the tumor revealed no extension to the upper vagina and cervix, and complete resection was easily accomplished under direct visualization.

p044: DISPOSABLE VS REUSABLE LAPAROSCOPIC (VLS) INSTRUMENTS: AN ANALYSIS OF QUALITY AND COSTS ISSUES.

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The aim of this study was to evaluate costs of VLS, comparing costs and benefits of employment of disposable Vs reusable instruments.

Many studies analysed this aspect, but very few dwell upon the issue of the proteic and microbiologic pollution of reusable instruments. This kind of pollution, in fact, can cause a reduction in performance of the instruments, as well as infections, adhesions, and immunological reactions.

After each single surgical procedure, we evaluated the level of proteic pollution on cleaned and sterilised instruments. In this way we could notice an occasional microbiologic contamination, Vs a frequent proteic pollution.

For this reason we concluded that the sterilisation process alone is not to be considered adequate, and therefore, in economic evaluation of VLS procedures, morbility induced by this form of contamination must be considered.

p045: SONOGRAPHIC EVALUATION OF THE INTERNAL INGUINAL RING IN LAPAROSCOPIC FEMALE INGUINAL HERNIA REPAIR

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Laparoscopic hernia repair in children, is a reciprocal modification of the open technique. It is an effective method in minimalising the access trauma. The mentioned technique, however, deserves comparative follow-up with regards to different types of repair. We have evaluated the long-term fate of the inverted hernia sac at the internal inguinal ring by the help of sonographic screening.

Seventeen female patients of age 1,5 months to 7 years (average 3.4 years) were included in this study. An umbilical 5 mm 0º scope and two 2.8 mm working ports lateral to the rectus muscles at umbilical level were utilized. The internal inguinal ring was closed using a single purse suture, with the last bite passing through the base of the inverted sac. Any unexpected contralateral opening was repaired in the same fashion. The obliterating bulk of sac tissue, which would resemble a "rose bud", was examined at intervals by 7.5 MHz surface probe at axial and sagital planes.

Three patients presented with bilateral hernias, six other cases had a contralateral patency. A total of 26 open internal inguinal rings were repaired. Sonography revealed an approximately 15 mm nodular hypoechoic area during the early postoperative period. The dimensions of this mass gradually diminished and disappeared in almost each case by the end of six months. There were no recurrences.

We may conclude that, the presence of the "rose bud" is effective in preventing an early possible recurrence, it also disappears in time thus any attempt to resect it is unnecessary.

p046: THORACOSTOMY IN CHILDREN UTILIZING A MINIMALLY INVASIVE TECHNIQUE

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BACKGROUND: During thoracoscopy, chest tubes can be placed via thoracoscopy ports with relative ease. In contrast, chest tube placement in an awake child can be a traumatic event both for the operator, as well as, the patient. This is a follow-up report describing a method of tube thoracostomy utilizing minimally invasive techniques at the bedside.

PATIENTS/METHODS: After performing thoracoscopic chest tube placement on multiple patients under general anesthesia, a similar technique was used at the bedside. Thirty children and infants from 1 month to 15 years of age required thoracostomy; 8 pneumothoraces, 15 pleural effusions, 3 traumatic hemopneumothoraces, 2 chylothoraces, one pneumatocele and one arrest resuscitation. After administration of sedation and local anesthetic, a small incision was made. The Veress needle and radially expandable sleeve were advanced into the thoracic cavity, followed by dilation with a cannula. A chest tube was placed via the port.

RESULTS: All chest tubes were successfully placed in good position as documented by chest radiograph and 28/30 were initially therapeutic. All procedures lasted less than 5 minutes and no further anesthetic or analgesia were required.

CONCLUSIONS: Utilizing radially expandable access devices for chest tube placement at the bedside is safe and effective in children of all ages. These minimally invasive techniques allow for quicker, as well as, more precise tube placement and are better tolerated by patients with little morbidity.

p047: NEW TECHNIQUES OF LAPAROSCOPIC CHOLECYSTECTOMY IN AN INFANT WITH CHOLECYSTOLITHIASIS ; REPORT OF A CASE

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We herein report a case of a 12-month-old girl underwent laparoscopic cholecystectomy and introduce new techniques of endoscopic surgery in an Infant.

Endoscopic procedures are used extensively in adult at present. But in pediatric surgery, we have not yet reached the experience gained by general surgeons. Technical problems related to size as well as variations in surgical indications and techniques are the reasons for delayed application in pediatric patients. Therefore several improvement and modification of the devices and various applied techniques will become needed to obtain safety in applying to pediatrics.

Laparoscopic cholecystectomy is now the safe and efficient technique for removal gallbladder with lithiasis in adult. Although cholelithiasis is uncommon in children, laparoscopic treatment for it has become more popular among pediatric surgeons. We implemented laparoscopic cholecystectomy to the 12-month-old infant with a chronic cholelithiasis. And not only in an adult but also in an infant, we could confirm the usefulness of laparoscopic surgery by using a flexible endoscope for esophago-gastroduodenoscopy which have the with angle view of 120 degrees, original port fixation appliances and ligation forceps.

Endoscopic surgery is sufficient safely for the pediatric patient as well as for adult by devising techniques and the expansion of the adaptation range that becomes more from now on is expected.

p048: HAND-INSTRUMENT ASSISTED MINIATURE ACCESS SURGERY

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Introduction. Hand-Assisted Laparoscopic Surgery (HALS) is not a new technique. However, the intracorporeal use of micro-instruments to improve HALS cases; we call this, Hand-Instrument Assisted Miniature Access Surgery (HIAMAS) is a novel variant to assist the miniature access surgeon. Materials & Methods. We describe a technique of placing the surgeon's hand into the peritoneal cavity through a hand port placed in a minilaparotomy incision and intracorporeal use of conventional micro-instruments. The micro-instruments can be inserted intracorporeally either via the hand port on a minilaparotomy incision or down a 10 or 12mm trocar. Results. Our preliminary result in showed that, HIAMAS allows for easy exposure, precise dissection, and meticulous tissue handling and hemostasis, especially around vascular pedicles, i.e. renal, hepatic, and splenic vessels. The hand and the micro-instruments are extremely helpful in identifying the planes of dissection. Conclusion. This approach provides excellent means to explore, to retract safely, and to apply immediate hemostasis when needed. The regaining of tactile sensation, which is an essential surgical tool, may encourage less experienced colleagues to perform more complex miniature access operations. It is hoped that this technique will facilitate miniature access surgery in our adult sized pediatric patients and encourage pediatric surgeons to develop and engage in more advanced miniature access techniques.

p049: A LAPAROSCOPIC TECHNIQUE OF SIMULTANEOUS INGUINAL HERNIA REPAIR AND GASTROSTOMY TUBE PLACEMENT IN A NEONATE

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Inguinal hernia repair is the most common surgery performed in infants and children. The incidence rises in premature neonates. Our practice is to repair inguinal hernias diagnosed in premature infants before discharge from the neonatal unit. Many premature infants will also have feeding problems due to neurological impairment or congenital anomalies. A gastrostomy feeding tube may be required. We present a successful technique of simultaneous repair of an inguinal hernia and percutaneous laparoscopic-guided gastrostomy tube placement. We recommend consideration of the feeding status of all neonates with hernias because the optimal time to place a gastrostomy tube may be at the time of henria repair. This will eliminate risks associated with the percutaneous endoscopic technique.

p050: MINIMALLY INVASIVE SURGERY IN VERY PREMATURE INFANTS

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Purpose: To report two unique cases of minimally invasive surgery that were performed in very premature infants. The cases illustrate that laparoscopy in very premature infants can be accomplished successfully and safely.

Methods: Two patients, aged 25 and 27 post-conceptual weeks, were referred for free intraperitoneal air. The infant's weights were 720 and 760 grams, respectively. Each patient had received indomethacin. Both had a bradycardia episode and a confirmatory abdominal X-ray. Otherwise, the infants were hemodynamically stable, without signs of sepsis or coagulopathy. Laparoscopy was performed in the operating room and in both cases an isolated perforation at the terminal ileum was found. The perforation was exteriorized through the right-sided 5 mm port. A central line was also inserted.

Results: Average surgery time was 45 (range 40-50) minutes. The operating room time was much longer. There was minimal blood loss and no complications. The patients were maintained on intravenous antibiotics and NPO for 7 days postop. They were then started on trophic feeds, which were eventually increased to nutritional goal. There were neither stoma complications nor output or electrolyte problems. The stomas were closed just prior to discharge.

Conclusions: Minimally invasive surgery in the very premature infant is safe and effective. Close cooperation must be maintained with the anesthesiologist.

p051: DUODENAL ATRESIA: LAPAROSCOPIC APPROACH IN THE NEW BORN

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The treatment of choice of duodenal atresia is duodenal-duodenal anastomosis in the newborn period, made through abdominal open approach. There are few papers (two) in the literature about laparosopic approach of this anomaly and in this period.

MATERIAL AND METHODS. - We report a case of a 72-hours-old female and 2.700 kg weight patient. She was born with an upper intestinal obstruction without other associated anomalies as Down syndrome.

The X ray film showed the "double bubble" image, diagnostic of duodenal atresia.

After further evaluation and stabilization, a laparoscopic approach was done, for planned diamond duodenal-duodenal anastomosis. We used one 5 mm umbilical port (30 degrees lens) and two 3 mm port for the working instruments, placed in the upper and lower left quadrants with anterior axillary's line. We made a one-layer diamond duodenal-duodenal anastomosis with five-zero absorbable sutures with extra-corporeal knots. We left a Pen-Rose drainage at the surgical field for 72 hours.

RESULTS. - Five days later, we made an abdominal X ray study with hydro soluble contrast media that showed intestinal permeability without leakage. She was fed by mouth two days later.

CONCLUSIONS. - We show that the duodenal atresia can be successfully approach in the new born by laparoscopy; we recommend this approach for surgeons with skills in this field.

p052: MINIATURE ACCESS SURGERY (MAS) IN THE NEONATE: NEW FRONTIERS AND OLD LIMITATIONS

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Introduction Pioneers of MAS have instigated changes in instrumentation, surgical technique and anesthetic strategies for MAS in the neonate. We reviewed successful neonatal MAS surgeries and introduced potential MAS procedures.

Method A Medline search was conducted using the following key words: Infant, neonate, newborn, minimally invasive surgery, laparoscopic surgery.

Results Therapeutic neonatal MAS procedures were repair of esophageal atresia and lung resection, congenital diaphragmatic hernia repair, fundoplication, pyloromyotomy, placement of gastrostomy button, repair of intestinal atresia/duplication, treatment of chylous ascites, Ladd's procedure, inguinal hernia repair, ovarian cystectomy, laparoscopic-assisted endorectal pull-through, anorectal pull-through and colonic resection for post necrotizing enterocolitis strictures. Diagnostic procedures were tissue biopsy and exploratory laparoscopy with or without cholangiography. Potential MAS procedures are enterotomy and T-tube placement for uncomplicated meconium ileus, laparoscopic examination of gynecological anomalies associated with cloacal malformation, excision of urachal remnants, feeding jejunostomy, thoracic duct ligation for congenital chylothorax and the management of vitelline duct remnants.

Conclusion: The size of the thoracic and abdominal cavities, instrumentation, and the physiology of the neonate are no longer insurmountable obstacles to the use of MAS.

p053: LAPAROSCOPY IS EFFECTIVE FOR EVALUATION OF ABDOMINAL MASSES OF UNKNOWN ETIOLOGY IN NEONATES

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Neonatal abdominal masses may be difficult to diagnose with imaging, and often require laparotomy. We discuss our experience with three neonatal cases that were managed laparoscopically, and demonstrate the utility of this approach.

Medical records of the patients were reviewed, and IRB approval was obtained. Three neonates presented with abdominal masses, and each underwent radiologic studies which were inconclusive for the diagnosis. One patient had a prenatal diagnosis and two presented with abdominal distention at birth. In all three, a large ovarian cyst was identified with laparoscopy. Two of the cysts had caused ovarian torsion and were free floating in the abdomen. Laparoscopy allowed marsupialization of the cyst in one case and removal in two in a minimally invasive fashion, and avoided a large incision. All patients did well post operatively and were discharged without complications.

We recommend laparoscopy for the initial evaluation and diagnosis, as well as treatment of neonatal abdominal masses.

p054: LAPAROSCOPIC APPENDECTOMY IN CHILDREN: RESULTS OF EIGHT YEARS IN MEDICAL TRETMAN

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In this retrospective review we have analysed results of appendectomy with laparoscopic technicque in children untill 16 years old.

In period from march 1994. to august 2001. 187 laparoscopic appendectomy, has been done to the 99 boys and 88 girls in average from 11,8 (4-16) . Acute catarrhal -inflammation we hade in 99(52,9%) patients ,gangrenous appendicitis in 44(23,5%), perforated appendicitis in 19(10,2%) patients. 6 (3,2%) appendectomies has been done after the period of conservativ treatman of periappendicular indurate.Incidental appendectomy in 19 cases(10.1%) In review time average for one operation in whole opservated period was 48 minuts (16 - 128) , improved in last five years in 36 minutes. Because of not clear and determinated anatomical relations we made conversion in tree cases from laparoscopic appendectomies in open appendectomies.

In totale we had 13 (6,9%) of commplications : during the operation two hemorages from dammeged lower epigastric artery , after operation 9 complications(2 wound infections, 2 intraabdominal abscesses, 4 heavy pareses of intestinals, 1 early adhesial ileus and 2 infectiones of respiratory ways. Median length of admission was 3,6 days.

Appendectomy preformed with laparoscopic technique is safe and efficient operation, it includes all advanteges of minimum invasive surgery and in experiens laparoscopic surgeons is most applicated way of appendecites treatman.

p055: LAPAROSCOPIC GUIDANCE OR REVISION OF VENTRICULOPERITONEAL SHUNTS

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BACKGROUND: Ventriculoperitoneal shunt(VPS) is the preferred treatment for hydrocephalus. Complications include: infection, obstruction and shunt fracture with migration of the fractured fragment within the peritoneal cavity. We report 16 cases of laparoscopic evaluation and revision of VPS in children.

METHODS: From January 2000-October 2002, we reviewed our experience with laparoscopy and VPS.

RESULTS: Laparoscopy wsa performed in 16 patients (age range 9 months-19 years) with a malfunctioning shunt, presumed shunt fracture, reinsertion of a shunt after externalization, and primary shunt placement. Six patients (38%) were converted to an open laparotomy due to adhesion (5) or conversion to a ventriculopleural shunt (1). Ten patients (62%) underwent successful laparoscopic assisted VPS placement: 5/10(50%) had lysis of adhesions (LOA) and repositioning of a functional VPS; 3/10(30%) had successful retrieval of a disconnected catheter with reinsertion of a new catheter; 2/10(20%) had laparoscopic confirmation of placement and function, requiring no revision; 1/10(10%) had an initial VPS placed with laparoscopic guidance due to obesity. Operative time ranged 30-60 minutes. All laparoscopic procedures used one or two 5mm ports. Peri-operatively, no adverse neurological sequelae occurred due to the pneumoperitoneum.

CONCLUSIONS: Laparoscopic guidance or revision of VPS permits: 1) direct visualization of catheter insertion within the peritoneal cavity, 2) satisfactory positioning, 3)LOA and catheter repositioning, and 4)retrieval of fractured catheters.

p056: CSF SHUNTS IN CHILDREN AFTER PREVIOUS SURGERY - ENDOSCOPICALLY ASSISTED PLACEMENT OF THE DISTAL CATHETER

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Introduction: In patients with repeated shunt revisions and other previous surgical procedures the placement of the distal catheter in CSF shunts can be difficult. Endoscopic approaches are employed increasingly in children. We report our experiences with endoscopically guided placement of the distal catheter in this special group of children.

Patients: From April 2001 to Sept 2002 168 shunt procedures were performed. In six children (7 months to 17 yrs) eight lap. assisted operations were performed. All patients had previous surgery for different origin (severe peritonitis, recurrent shunt infection, GER surgery, button placement, ileus ecc...).

Technik: After open access in the umbilicus a pneumoperitoneum was installed and the shunt was placed under direct endoscopic vision.If required adheasions were cut.

Results: In 7 cases the distal cath. was placed abdominally, in 1 boy pleurally. The latter underwent 2 prev. thoracotomies for shunt insertion and multiple abd. shunt revisions. In 2 cases the shunt had to be removed for infection but could be reinserted later. No intraop or post op. complication occured.

Conclusion: Laparoscopic and thoracoscopic assistence in placement of the diastal cath, with the ability to explore the body cacity is a minimal invasive technique, which allows a safe and precise insertion under visual control of the shunt function even in patients with prior surgical interventions.

p057: LAPAROSCOPIC RECREATION OF ABDOMINAL DOMAIN IN PATIENTS WITH COMPLICATED VENTRICULOPERITONEAL SHUNT (VPS)

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Introduction. With Long-term use of VPS in hydrocephalus patients, peritoneal adhesions with abdominal CSF pseudocyst formation often develop that can require shunt removal. We hypothesized that laparoscopic recreation of abdominal domain in these patients is technically feasible to spare them from more complicated shunting alternatives.

Materials and Methods. During a 21-month period, we operated on 5 patients, ages ranged from 2 to 20 years old, who had complicated VPS. Each had required 2 to 5 previous shunt revisions following their neonatal shunt placement. Our patients developed peritoneal adhesions that obliterated or converted their peritoneal cavity into several small pockets of peritoneum with CSF pseudocyst formation. The laparoscopic procedure involved careful adhesiolysis and catheter placement back into the peritoneal cavity.

Results. The average OR time was 2.5 hours and was technically feasible in 4 of the 5 patients. Dense adhesions which completely obliterated the peritoneal cavity accounted for the failure in 1 patient. Of the 4 remaining patients, 2 had shunt malfunction at 2 weeks and 4 months post-operatively. Neither of them was salvageable and was converted to ventriculoatrial shunt. The remaining 2 patients had functioning VPS at 15 and 16 months follow-up.

Conclusion. Laparoscopic recreation of abdominal domain in complicated VPS patients is technically feasible and should be attempted prior to abandoning the peritoneal cavity. The long-term success remains to be determined.

p058: HYPERTROPHIC PYLORIC STENOSIS: AN ALTERNATIVE APPROACH IN HIGH RISK PATIENTS

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The effficacy of pyloromyotomy as surgical treatment in the hypertrophic pyloric stenosis has been well established since the 50's, but also we can read sporadic repports of succesful nonoperative treatment of this entity, always with longer average time to be effective.

We present a preterm male patient, birth weight 1.780 grs, and 30 weeks of gestational age , with a pure esphageal atresia without fistula who was planed to be treated with a delayed esophageal anastomosis and we performed at birth a feeding gastrostomy and aspiration of the upper pouch waiting the gap length were < 2 vertebral bodies .At the age of five weeks developed enteral intolerance and a hypertrophic pyloric stenosis was diagnosed by ultrasounds.

Due to the prematurity of the boy and the need for a further intervention a 0,01 mg/Kg enteral dosis, six times a day was initiated and the results followed daily by sonograms. At the third day the Atropine was interrupted because of hematemesis. We insert a Gastro Enteric Feeding Tube MIC 16 French/25.0 cm under radiologic control that provide a simultaneous gastric and jejunal access and restarted the enteral feeding till the normal ultrasonographic measurement of his pyloric muscle.

One month later we performed a sucessfully esophageal anastomosis with a normal transit time of gastric content.

We conclude that nowadays in our group laparoscopic pyloromyotomy is the first choice treatment for Hypertrophic Pyloric Stenosis, but in high risk patients we must use all the therapeutic chance at our hand.

p059: FORCEFUL EVACUATION OF RETAINED PNEUMOPERITONEUM MIMICKS AN ACUTE RECURRENT INGUINAL HERNIA

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Background: We present an unusual complication of laparoscopic exploration of the contralateral side during inguinal hernia repair:forceful evacuation of retained pneumoperitoneum mimicking an acute recurrent hernia.

Case Report: A 9 months old female presented for right inguinal hernia repair. Laparoscopic exploration of the left side was performed with a 70-degree laparoscope. It revealed a closed left internal ring. The pneumoperitoneum was evacuated. The hernia sac had started to tear so it was closed with a running horizontal mattress monofilament suture. The internal ring was closed with interrupted sutures. Upon awakening, the patient coughed. The right groin was filled with a mass that we felt was air. But to rule out an acute recurrent hernia, we sedated the patient and reexplored the groin. There was a large collection of air that had dissected the tissues in the subcutaneous tissues and under Scarpa's fascia. The hernia repair was intact. The patient is now 6 months after the repair with no evidence of a recurrence.

Discussion: This is the first report of this unusual complication of laparoscopic exploration during hernia repair. Two factors contributed to it. The sac was closed with a mattress suture, which is not as airtight as a double ligature after twisting. The second is the incomplete evacuation of the pneumoperitoneum. With the increasing use of laparoscopic contralateral exploration, this case illustrates the need to evacuate the pneumoperitoneum as thoroughly as possible and to achieve an airtight closure of the sac.

p060: SCRUB NURSES' ATTITUDE TOWARDS DEVELOPMENT OF PEDIATRIC MINIMALLY INVASIVE SURGERY (MIS) IN SINGAPORE

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Purpose: Scrub nurses are vital members in the MIS team. We evaluate their attitude towards the development of pediatric MIS in Singapore.

Materials and Methods: A questionnaire was completed by each of the 19 pediatric scrub nurses of our major operating suite and results were analyzed.

Results: Seventeen (89.5%) of scrub nurses had > 5 years of operating room experience and had scrubbed for more than 10 MIS procedures. Retrospectively, 68.4% felt that they handled their first MIS procedure with difficulty. 21.1% felt nervous initially, 78.9% were excited and looking forward to learning the new technique. 47.4% considered that there were more instruments to take care of compared to conventional open surgery. 94.7% felt that MIS is beneficial to the patients. 57.9% considered that scrubbing for MIS procedure during after office hours with limited manpower made no difference to the scrub team especially if the patients were to benefit from it. 68.4% felt that if the theatre setup was adequate, and 84.2% felt that if the circulating personnel had experience with MIS instrumentation, they would be comfortable in scrubbing for MIS procedures. All felt that easily available mobile equipment would be practical but 47.4% felt that a dedicated fully equipped MIS operating room would be ideal.

Conclusion: Understanding the scrub nurses' attitude towards MIS is valuable in the initial development of pediatric MIS in Singapore. Fine-tuning and introduction of continuing nursing education in MIS would definitely enhance the efficiency of the team.

p061: LAPAROSCOPY IN THE DIAGNOSIS AND TREATMENT OF PEDIATRIC MALIGNANCY

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Background: Laparoscopy may have a place in the management of malignancies, but its safety has been questioned. Few pediatric series have been reported. We present the combined experience of 11 centers on the place of laparoscopy in pediatric malignancies.

Methods: A retrospective review of all laparoscopic evaluations for pediatric malignancies collected from 11 pediatric centers is reported.

Results: 52 patients underwent minimally invasive procedures. In 25 cases a presumed diagnosis of lymphoma was confirmed by biopsy. Solid tumors (27) included: neuroblastomas (10), hepatic tumors (5), appendiceal carcinoid (3), ovarian malignancy (3), and miscellaneous tumors(6). Laparoscopic interventions included 37 biopsies (72%), all diagnostic; 4 complete resections, 2 oophorectomies, and one exploration. No port site metastases have been reported with a mean follow-up of 33.6 months. There were no perioperative mortalities.

Conclusions: While it is one of the largest series on this topic, the relatively small number of cases suggests that laparoscopy plays a limited role in pediatric oncology. In addition to the safe resection of small lesions (including ovarian tumors), it is most useful for lymphoproliferative disorders and unresectable solid malignancies. This approach provides accurate diagnosis and allows assessment of tumor resectability. Tumor seeding at the port sites does not appear to be a concern in pediatric malignancies.

p062: APPLICATION OF TISSUE ADHESIVES IN PEDIATRIC ENDOSURGERY

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Aim: The use of tissue adhesives or glues for tissue approximation and hemostasis is increasing in surgery as the related technology advances. We report our preliminary experience with this technology in paediatric endosurgery.

Methods: In a four-year period, between 1997 and 2000 we employed tissue adhesives in 48 paediatric patients during laparoscopic procedures.

In 25 patients the glue was adopted for the hemostasis of parenchimal organs (liver in 24 cases and spleen in 1). In three cases the glue was used to repair organ perforation, in 19 to close the distal part of the peritoneal-vaginal duct, in case of congenital inguinal hernia. In the last case the glue was adopted to achieve optimal airtightness in case of pulmonary biopsy. The glue was injected with the aid of a needle positioned trans-parietally. The procedure was easy and rapid in all cases.

There were no problems or complications related to glue positioning.

Conclusion: In our opinion, tissue adhesives are a very versatile product to use in paediatric laparoscopic surgery. It is likely that their usage will expand as the technology improves and more effective products are developed.

p063: A MODIFICATION OF THE NUSS PROCEDURE FOR PECTUS EXCAVATUM TO PREVENT IATROGENIC CARDIAC INJURY

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Background: Minimally invasive repair of pectus excavatum (the Nuss procedure) is associated with complications related to blind passage of the metal bar behind the sternum. The most life-threatening of these is iatrogenic injury to the right heart. We present a modification of the Nuss technique designed to eliminate the risk of injury during insertion of the.

Patients and Methods: Between March 2001 and October 2002, following a case in which insertion of the clamp injured the right atrium and required an urgent cardiorrhaphy, we developed a modification of the procedure. Eighteen patients underwent the modified Nuss procedure. The modification entails an initial left thoracoscopy with safe passage of an umbilical tape to the left hemithorax anterior to the heart under direct vision, followed by a right thoracoscopy. The subsequent steps are according to the original description of the operation. The bar is finally sutured around the ribs with two surgical wires. No iatrogenic injuries or other insertion-related complications have been observed in any of the patients in our series. No bar rotation or displacement have occured. All children lead normal lives with excellent temporary cosmetic results.

Conclusions: We present a modification of the Nuss procedure with a bilateral thoracoscopic approach, and insertion of the instrument from the left side. This modification allows for a safer insertion of the bar under direct vision to minimize the risk of iatrogenic injury.

P064: A NOVEL RAT MODEL - LAPAROSCOPIC VERSUS CONVENTIONAL SURGERY

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Aim: Development of a small animal model with stressfree anesthesia to investigate inflammatory responses following conventional and minimally invasive surgery.

Methods: Male Lewis rats (250-300g) were used. Three sets of experiments were performed: 1.) comparison of inhalation/i.m.-anesthesia to i.v.-anesthesia in 6 rats. 2.) pneumoperitoneum vs laparotomy (7cm) using i.v.-anesthesia (each n=6). Endpoints were cell count, production of superoxide anions and nitric oxide by alveolar and peritoneal macrophages after lavage, and interleukin-6 in plasma. 3.) feasability of various laparoscopic procedures.

Results: 1.) inhalation/i.m.-anesthesia decreased the amount of alveolar macrophages significantly. 2.) both, laparotomy and pneumoperitoneum, appeared to increase superoxide anion release by peritoneal macrophages compared to control. Nitric oxide production was quantitatively comparable in all groups, whereas the amount of alveolar macrophages was reduced after pneumoperitoneum. Only laparotomy resulted in elevated interleukin-6 levels in plasma. 3.) feasability of fundoplication and liverlobectomy was excellent.

Conclusion: Permanent venous canulation is essential for this model. Immunological parameters can be determined locally, systemically, and in distant organs. Major laparoscopic procedures can be performed easily.

p065: LAPAROSCOPIC RESECTION OF PULMONARY SEQUESTRATION IN AN INFANT WITH CONGENITAL DIAPHRAGMATIC HERNIA

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Laparoscopic repair(LR) of late-onset congenital diaphragmatic hernia(CDH) has become a common procedure in infants. We report a successful LR of left CDH combined with laparoscopic resection of extralobular pulmonary sequestration.

Case Report: A 4-month-old infant was incidentally diagnosed with left CDH from a chest X-ray. After detailed imaging studies, LR was performed with one optical trocar and three working trocars. Laparoscopy revealed left CDH with a sac and intestinal herniation. Subsequently, the hernia contents were reduced and the hernia sac was excised by laparoscopic coagulation sheers. Laparoscopy also revealed an extralobular pulmonary sequestration and a small lung in the left thoracic cavity. The sequestration was resected using GIA, and the defects of the diaphragm were directly sutured using non-absorbable sutures. The patient had an uneventful recovery following a short hospital stay.

Conclusion: Laparoscopic approach can be an effective and more advantageous alternative to laparotomy for CDH in the pediatric population. Laparoscopic approach for late-onset CDH is extremely useful, not only as a minimally invasive procedure, but also for precise evaluation of associated intrathoracic complications.

p066: SUCCESSFUL LAPAROSCOPIC LIGATION OF THE LYMPHATIC TRUNK FOR RECURRENT CHYLOUS ASCITES

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We reported a 3-year-old girl with recurrent chylous ascites, which was successfully treated by laparoscopic ligation of the ruptured lymphatic trunk. She was referred to our hospital at 16 days of age because of marked abdominal distension. Imaging methods showed massive ascites of unknown origin, and analysis of the ascites showed it was chylous in nature. MCT milk and elementary diet were started with no improvement followed by total parenteral nutrition. Her condition improved somewhat and she was discharged. But she was readmitted 2 years later because of abdominal distension and appetite loss. Surgical intervention was planned to clarify the etiology and to treat intractable chylous ascites. Sudan Black B was orally administered 6 hours before laparoscopic surgery. Under general anesthesia, a laparoscope was passed into the abdomen. White-grayish ascites was seen in the abdominal cavity, and a dark-blue stream of the dye was noticed. The lesion responsible for the ascites, a ruptured intestinal trunk, was found by following the stream. The lesion was ligated twice with an Endo Loop (tm). She is then completely free from symptoms for 1 year and 6 months. This experience shows that laparoscopic surgery is useful in investigating the etiology of chylous ascites and in treating it in some cases. Laparoscopic surgery may be considered as a treatment of choice instead of open surgery for treating intractable chylous ascites.

p067: ENDOSCOPIC-ASSISTED CRANIECTOMY WITH CRANIAL BANDING FOR TREATMENT OF SAGITTAL SYNOSTOSIS

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Objective: Endoscopic-assisted craniectomy for treatment of sagittal synostosis is currently a much debated topic. The success of this technique may rely on the effectiveness of the orthosis used post-operatively. The purpose of this investigation was to assess the efficacy of an orthotic treatment program designed for use after endoscopic-assisted craniectomy.

Methods: A treatment protocol was established for infants entering orthotic treatment after the endoscopic procedure. Each patient was fit with a cranial headband within 8-16 days postoperatively. Custom headbands were designed to apply anterior-posterior holding pressure, and encourage lateral growth. Photographs and anthropometric measurements (cranial length [g-op], width [eu-eu], cephalic index, and circumference) were obtained at the beginning of treatment and every two weeks thereafter.

Results: Since June 2000, 15 patients entered the treatment program with a mean entrance age of 3.3 months. Average treatment time was 3.2 months, resulting in an overall improvement in the cephalic index by 16.5% (Pre Treatment Mean: 69.2; Post Treatment Mean: 80.5).

Conclusions: These results demonstrate that cranial banding can have a significant impact on postoperative outcomes of endoscopic-assisted craniectomy, not only by improving the overall cephalic index but also by correcting bitemporal narrowing and frontal bossing. Long term follow up to assess the stability of the correction achieved is being performed.

p068: USEFULNESS OF DIAGNOSTIC RELATED GROUPS IN COMPARATIVE TRIALS BETWEEN LAPAROSCOPIC AND OPEN PEDIATRIC APPENDECTOMY (HOSPITAL STAY)

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Introduction. Effectiveness of laparoscopy (LT) vs open techniques (OT) in pediatric acute appendicitis (AA) is recognized. Unfortunately, the different clinical peculiarities and morbidity of these children are not usually differentiated between LT and OT series. Preventing this fault, we propose a homogeneous comparison of both surgical techniques in AA with the Diagnostic Related Groups (DRG).

Material and Procedures. From 7/1997 to 12/2001, we operated 606 children for AA (47 LT, 559 OT). All them were aggregated by clinical codification in 4 different DRG (numbers 164,165,166,167) for each technique (LT, OT) and their hospital stay has been compared (SPSS 8.0 validation).

Results. DRG 167 is the prevalent (41 L, 457 OT), followed by DRG 165 (5 L, 78 OT) and DRG 164 (1 L, 19 OT). Except in year 2000, the hospital stay is lower in LT, with significance in DRG 167 (* = $p < 0{,}001$) (** = $p < 0{,}05$).

Conclusion. Usefulness of DRG method in homogeneous comparative trials between LT and OT in AA is emphasized, extensive to other pathologies. In spite of our short laparoscopic series and learning curve, we found a lower stay with LT, especially with the prevalent GRD 167. A greater number of cases is needed in the other DRG.

p069: LAPAROSCOPIC VIDEO PRESENTATIONS: A "FIRST CLASS" ALTERNATIVE

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Modern three chip cameras and digital video (DV) recorders ensure broadcast quality pictures capable of over 500 lines resolution on the operating theatre monitor but the same quality is unnecessarily high for digital projection.

Analogue video signals first need to be digitised by a video capture card while DV can be transferred directly to the computer hard disc. Adobe Premier is an expensive commercially available program. First class video editing can be achieved using Movie Maker included with Microsoft Windows ME and XP without any additional expense.

While digitised analogue video at 600 x 480 pixels x 25 fps requires over 20 megabytes/sec in AVI format, encoding reduces the amount of memory considerably, similar to JPEG for still images. Encoding techniques such as MPEG-2 found on DVD can reduce memory requirements considerably but may be reliant on processor speed or dedicated decoders to reproduce high quality video.

Windows Media Encoder encodes specifically for Media Player, the program that displays video in PowerPoint. The codec can encode at a variety of levels ranging from 492 Kbps at 320 x 240 pixels x 30 fps (VHS quality) through to 1368 Kbps at 640 x 480 pixels x 24 fps (cable video). It can encode video for replay on a Pocket PC or for distribution over a secure network connection to facilitate telementoring.

Microsoft Windows Movie Maker together with Media Encoder makes a First Class video editing suite suitable for Laparoscopic PowerPoint Presentations.

p070: PAEDIATRIC - LAPAROSCOPY MANIA ! SIGNIFICANCE OF HANDS - ON ENDOSURGERY COURSES FOR PAEDIATRIC SURGEONS

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Currently there is no certified hands - on course specific for Paediatric Endosurgery in India. Nevertheless hands - on courses in endoscopic surgery for paediatric surgeons is being held at various centres in India; throughout the year, almost ast monthly intervals. What is the real significance of those courses adn what are their objectives? What is the likely outcome?

It is thus imperative that an in - depth assessment of the requirements and contents for a hands - on course be conducted; preferably by a responsible unbiased authority. This could be achieved by surveying the vast number of participants of the course. The survey should consist of

- Length of the course
- Contents of Syllabus
- Safety aspects - both anaesthetic and surgical
- Live demonstrations / vidotapes
- Invivo / Invitro procedures
- Instruments, fee and so on.

p071: LAPAROSCOPIC ASSISTED ANORECTOPLASTY FOR IMPERFORATE ANUS IN A MALE INFANT

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INTRODUCTION: The feasibility of laparoscopy in children and its impact on routine paediatric surgery were not, so far, well established. However, reports documenting the safety, efficacy and cost-effectiveness of paediatric laparoscopic surgery are precipitating a rapid evolution in minimal access surgery in children. It has been shown in studies that about 60 percent of abdominal operations in children can be performed via laparoscopy. This presentation describes technique of laparoscopically assisted anorectoplasty for imperforate anus (LAARP).

SURGICAL TECHNIQUE:

RESULT: The patient made a smooth and uneventful recovery with feeds being started on the second postoperative day and discharged on the fourth postoperative day. We await long term follow up for assessment of faecal continence.

CONCLUSION: This new method of pullthrough for imperforate anus offers many advantages like excellent visualisation of the rectourethral fistula and surrounding structures within the small pelvis of the infant, accurate placement of the bowel through the levator ani sling and minimally invasive abdominal and perineal wounds. The paediatric patient is the one to gain most from this minimal invasive procedure (LAARP) with less pain, decreased hospital stay and earlier return to normal function. Also, at experienced hands the technique may be performed consistently with good short term results. However, long term follow up is necessary for an accurate assessment of faecal continence.

p072: THE USE OF LAPAROSCOPIC MESENTERIC LYMPH NODE BIOPSY IN THE DIAGNOSIS OF MYCOBACTERIUM AVIUM INFECTION IN CHILDREN WITH HIV

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Infection with the acid-fast bacilli, Mycobacterium avium and Mycobacterium intracellulare (collectively referred to as the Mycobacterium avium Complex, or MAC) is a substantial diagnostic and clinical problem in the child with HIV infection. Because blood cultures in MAC infected patients are frequently negative, tissue biopsy and culture are often required to confirm the diagnosis or rule out malignancy.

We describe the use of laparoscopic mesenteric lymph node biopsy in three children presenting with clinical symptoms and radiographic findings (abdominal lymphadenopathy) consistent with MAC infection. Three ports were utilized and positioned dependent upon CT findings. Adequate specimens for diagnosis were obtained without morbidity in all three children. This experience supports the use of laparoscopy as the preferred method of confirming intra-abdominal MAC infection in HIV infected children.

p073: THE NUSS MINIMALLY INVASIVE REPAIR VERSUS THE TRADITIONAL RAVITCH OPEN REPAIR OF PECTUS EXCAVATUM: IS EITHER SUFFICIENTLY SUPERIOR TO THE OTHER?

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Introduction: We sought to directly compare the short-term results of the Nuss vs. Ravitch repairs and hypothesized that the they are equally effective with neither proving superior during short-term follow-up.

Methods: Consecutive cases oover a 3yr period(Nuss 9, Ravitch 9). Outcome measures: op time, blood loss and transfusion needs, post-op pain, rate of complications and length of stay.

Results: Nuss vs. Ravitch; Demographic (aver. age 12.7vs.14.1yrs, males 75vs.77%), Pectus severity (index 4.5vs.3.79, respiratory complaints 86vs.29%, abnl PFTs 60vs.75%), Primary indication for surgery (cosmetic 67vs.83%), Aver. op time (131vs.283 minutes), Aver. blood loss (37vs.511 ccs, transfused 0vs.37.5%), Aver. LOS(4 days each), Early complications (major 11vs.0%, minor 44vs.50%), Chronic post-op pain (33vs.0%), Other late complications(67vs.29%). Follow-up(Nuss 4to29 mths, aver. 16 mths with three bars now removed, Ravitch 1to13 mths, aver. 9 mths).

Conclusions: The Nuss repair does offer several compelling advantages over the Ravitch repair. scars are smaller. There is much less blood loss and minimal risk for blood transfusion. Operative times are more than halved. Both repairs have a similar LOS and rate of early complications. However the Ravitch rapair had no chronic pain problems. Since the primary operative indication in our series was for cosmesis, we conclude that the Nuss repair provides superior short-term results.

p074: PECTUS EXCAVATUM - THE SUCCESSFUL APPLICATION OF A MODIFIED NUSS TECHNIQUE IN 50 PATIENTS

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The aim of this paper is to present the successful application of a modified Nuss technique (MNT) for pectus excavatum(PE).

Methods: 50 patients between the ages of 10 and 16 years, with moderate to severe PE were treated by MNT. Routine preoperative chest CT scan or/and pulmonary function tests were not performed. The correct size Nuss bar was chosen immediately preoperatively. Thoracoscopy was done in one patient only. Tucker bougies were used to atraumatically create a tract for the Nuss bar. All patients required a urinary catheter. Patient controlled intravenous analgesia was used in 32 patients and intraoperatively inserted epidural catheter was placed in 18 patients. Return to school was two weeks after the procedure with restricted activity for 6 months. Bars were removed after 2 years. Follow-up was for 25 months.

Results: There were no intraoperative complcations including need for blood transfusion, arrhythmia, pneumothorax. The major complication was chest pain which was best managed by thoracic edidural analgesia. Two patients developed late wound infections not requiring removal of the metal prosthesis. Periprosthesis intense fibrosis with calcification was noted. Satisfaction was universal and if given the choice, patients still opted for the operation. Only 5 patients volunteered improved exercise tolerance.

Conclusion: The MNT is a safe, effective surgical option for patients with PE. However patients must be told about postoperative pain. Patient-appreciated physiological improvement is unusual; but improved self-image is universal.

p075: LAPAROSCOPIC FEMORAL HERNIA REPAIR USING UMBILICAL LIGAMENT AS PATCH

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A novel technique for the laparoscopic repair of femoral hernia is described. An 11-year-old boy who had undergone previous open inguinal herniorrhaphy presented with a persistent bulge in the ipsilateral groin. Upon aspiration, the lump was found to contain clear fluid that recurred. He was taken to the operating room for laparoscopic exploration where a small femoral hernia was discovered. The hernia was reduced with extrinsic compression and the defect was closed laparoscopically using a purse string suture. The ipsilateral umbilical ligament was then used as a patch and secured in place in a running fashion. The immediate postoperative result was satisfactory, with resolution of the bulge in the groin and minimal postoperative pain. This laparoscopic technique allowed for confirmation of this challenging diagnosis, evaluation of the contralateral side, and a novel means of butressing the peritoneal closure with a patch of umbilical ligament. The procedure is safe, simple, and provides excellent functional and cosmetic results.

p076: MINIMALLY INVASIVE VIDEO-ASSISTED THYROIDECTOMY IN YOUNG PATIENTS: REPORT OF 16 CASES

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From October 1998 to December 2002 in the Department of Surgery of the University of Pisa, 16 patients of the age of 18 or under (14 females-87.5% and 2 males-12.5%)(range 11-18, mean age of 16

years with an average weight of 48 Kg, a minimum weight of 34 kg and a maximum of 62 Kg)) underwent a surgical operation with video-assisted technique for a thyroid pathology.These patients belong to a group of 270 patients treated with this technique. Surgical therapy with video-assisted technique was chosen: a lobectomy was used in 15 cases (90%) and a total thyroidectomy in 1 case (10%).

The hystological exam revealed in 14 cases (87.5%) a benign pathology and 2 cases(12.5%) a malignant lesion, papillary type.

2 patients (12.5%) underwent a second video-assisted operation to complete thyroidectomy after a negative false at the extempore hystological exam during the first operation. No post-surgery complication was observed.The results of the mini-invasive video-assisted technique for thyroid in our preliminary experience seem to be equal to those of the traditional surgical technique (200 surgical operations for thyroid pathology of the age of 18 or under. Elective indications of the mini-invasive video-assisted technique are the volume of the nodule and hystological type; this technique can't be used in voluminous goiters, in medullary carcinomas and in scarcely differentiated carcinomas.The advantages that this technique offers is a better esthetic result which is particularly important in young patients, a briefer stay in hospital and less post-surgery pain.

p077: LASER TREATMENT OF NEWBORN AND CHILDREN WITH CYSTS OF THE LARYNX AND TRACHEA

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Introduction: Congenital cysts of the larynx and trachea in newborns cause an acute obstruction of the upper airways. The cysts are firm and non compressible. In these cases intubation is often impossible and an emergency intervention becomes necessary.

Patients and Methods: In our collective of 531 chidren with stenosis of the airways we only had 23 cases where cysts were the main cause of obstruction.

Most of the cysts were principally located in the larynx follwoed by the subglottic and the thoracic trachea. In seven cases they became symptomatic in the newborn age.

Therapy: All children underwent an endoscopic laser therapy. We used a rigid bronchoscope with a channel for the 0.4 mm bare fiber. Large cysts were emptied by puncture followed by fenestration using contact technique, fibertom mode, 20 W cw. Afterwards the ground of the opened cyst was coagulated by non-contact technique.

Results: All children are alive. In three newborns with congenital cysts, a second session was necessary. In the elder children with multiple post inflammatory cysts, 2-3 sessions were performed.

p078: LAPAROSCOPY IN CHILDREN WITH ACUTE ABDOMEN DUE TO VITELLINE DUCT REMNANTS

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Intraabdominal bands as remnants of the vitelline duct cause an acute abdomen in more than 75 % of the cases. In these cases, laparoscopy is the procedure of choice because it makes possible an exact classification and successful laparoscopic therapy of these congenital disturbances in the same session.

Patients and Methods: From 1991-2002, six children with an acute abdomen due to remnants of the omphaloenteric duct and vitelline arteries underwent laparoscopic treatment in our department. There was a predominance of male children (5:1) with a mean age of 6,8 years. In five children a Meckel´s diverticulum was present. In four cases bowel obstruction resulted by an entrappment of an intestinal loop between the congenital band and the mesenterium. In two cases massive intestinal hemorrhage occured. The laparoscopic procedures were the same as in laparoscopic appendectomy.

Results: All six chidren underwent an emergency laparoscopy with resection of the diverticulum and the accompanied ligament. None of the children expired , no complication occured and no conversion was necessary.

p079: LAPAROSCOPIC TREATMENT OF OMENTAL TORSION IN A 5-YEAR-OLD GIRL

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Omental torsion is a rare cause of abdominal pain in children. A previously healthy 5-year-old girl presented with a three-day history of right lower abdominal pain and vomiting. Abdominal examination revealed marked tenderness with guarding and a palpable mass in the right lower quadrant. White blood cell count was 11.0 x 109 with a left shift. Abdominal ultrasonography and CT demonstrated a homogeneous intra-abdominal mass under the abdominal wall in the right lower quadrant. A provisional diagnosis of perforated acute appendicitis and abscess formation was made. Laparoscopy was then performed and 30mL of serosanguineous fluid was aspirated from the peritoneal cavity. The omentum, ileocecum and right ovary were adhered to the abdominal wall. After adhesiolysis, the distal omentum was found to be torted and was matted with venous congestion. The appendix and the ovary were normal with no evidence of inflammation. The torted distal omentum was resected laparoscopically using a harmonic scalpel. The patient recovered without complication and was discharged home on postoperative day 3. Pathology showed severe congestion of the excised omentum, and there were focal areas of hemorrhagic necrosis with no other pathological features such as cyst or tumor. Omental torsion is rare, but should be considered with a high index of suspicion in the differential diagnosis of right lower quadrant pain. Laparoscopy proved to be effective for both diagnosis and treatment in this case.

p080: ROBOTICALLY-ASSISTED MINIMALLY INVASIVE SURGERY IN CHILDREN: INITIAL EXPERIENCE & TECHNICAL CONSIDERATIONS

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Introduction: Reports of robotically assisted minimally invasive surgery (RMIS) have increased over the last several years. Few reports have addressed RMIS in pediatric patients. We present our initial RMIS experience and discuss technical considerations, advantages and disadvantages, compared to conventional minimally invasive surgery (CMIS) in children.

Materials & Methods: Four children underwent RMIS with the Intuitive Surgical(R) daVinci(TM) system. Mean age was 9.5 yr. (range 5-13); mean weight was 40 Kg. (range 20-60). The procedures were cholecystectomy (2), splenectomy, and resection of a urachal cyst. Trocar placement, total OR time, technical considerations and patient outcomes were recorded and compared with retrospectively reviewed CMIS cases.

Results: Mean RMIS vs. CMIS total OR times were 202 min vs. 78 min for cholecystectomy; 318 min vs. 184 min for splenectomy. Four trocar incisions were used in all patients. Additive trocar incision length was longer in the RMIS group. One open conversion was required in each group. Blood loss and recovery were similar between the two groups. There were no post-operative complications.

Conclusion: RMIS can be performed safely in children and offers advantages over CMIS including articulating instruments enabling more precise, intracorporeal tissue manipulation, 3-dimensional vision and intuitive ergonomics. Currently, disadvantages of RIMS include larger trocar incisions, longer total OR time and limited tactile sensation.

p081: PEDIATRIC ROBOTIC CHOLECYSTECTOMY

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Purpose: The array of procedures, which can be performed using minimally invasive surgery, is limited by the surgeon's ability to perform complex movements with instruments that are currently available. Most laparoscopic instruments do not have articulating heads, which allow for the complex movements that simulate human hand and wrist action. In an effort to broaden our minimally invasive procedure capabilities, we elected to begin our experience in robotic surgery by performing a cholecystectomy in an adolescent female with symptomatic cholelithiasis.

Materials: The Da Vinci surgical robot was used to perform the cholecystectomy through two 8 mm robotic arm ports with visualization of the procedure provided by a 12 mm stereo imaging camera. A fourth auxiliary 10 mm port independent of the robot was used for retraction and extraction of the gall bladder.

Results: The operation was successfully performed with no post-operative complications. The patient tolerated a clear liquid diet the evening of surgery and was discharged home the following day on a regular diet.

Conclusion: Pediatric robotic cholecystectomy is a safe and relatively easy procedure to perform. The complex three-dimensional motions that can be made with the robotic instruments supercede the movements that are possible with standard laparoscopic instruments. The variety and complexity of procedures using a minimally invasive approach will be greatly expanded by the use of robotic surgery in children.

p082: MINIMMALY INVASIVE AND ROBOTIC SURGERY TECHNIQUES IN THE FUTURE OF PEDIATRIC SURGERY: A NATIONAL SURVEY OF PEDIATRIC SURGERY FELLOWS

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Background: The purpose of this study was to assess the attitudes of pediatric surgery fellows toward miniature access surgery (MAS) and robotic surgery.

Methods: In May of 2002 a survey was sent to the 38 pediatric surgery residency directors in North America. The directors were asked to distribute the questionnaire to their current residents and fax the completed survey to the Department of Miniature Access Surgery at Buffalo Children's Hospital.

Results: Forty five percent (17 of 38) pediatric surgery programs responded to the survey. All respondents (17/17) conveyed an interest in minimal access surgery, with 71 percent of these respondents placing their interest at either a high or medium level. Eighty eight percent of the responders plan to utilize MAS in their future practice. Seventy one per cent of responders felt robotics would play at least an important role in the future of pediatric surgery. Forty seven percent feel there should be a greater emphasis placed on robotic training during residency; seventy six percent of responders are not currently planning on pursing advanced fellowship training in robotics, while 24 percent are uncertain at this time.

Conclusion: There is high level of interest in MAS and robotic surgery amongst pediatric surgery fellows in North America, with the vast majority of fellows intending to use MAS in their future practice.

p083: THE NUSS PROCEDURE: EXPERIENCE FROM THE FIRST FIFTY

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Purpose: The Nuss procedure has gained rapid acceptance among pediatric surgeons. We present the results from our initial 50 patients undergoing the minimally invasive pectus repair.

Methods: A retrospective review of patients undergoing the Nuss procedure from April 1998 to the present was performed. Data including age, operative time, length of hospital stay, and complications were recorded.

Results: Fifty patients underwent the Nuss procedure. Average age was 13 years. Average operative time was 92 minutes. Average length of stay was 6 days. Eleven post-operative pneumothoracies occurred, none requiring a thoracostomy tube. One displaced bar was replaced at one month. A second displaced bar was removed at 15 months. Infection necessitated one bar removal at 11 months. Three bar stabilizers, one broken, one bent, and one displaced, were replaced. Upon bar removal, two bar stabilizers were broken. A rib wire has replaced bar stabilizers. One internal mammary artery injured occurred. Eighteen bars have been removed. All but one patient with a tilted sternum had excellent satisfaction.

Conclusions: The Nuss procedure offers decreased operative times, minimal blood loss, and improved cosmesis when compared with the open approach. Patient satisfaction has been excellent. Unique complications include an infected bar, broken bar stabilizers, and an internal mammary artery injury. Initial results demonstrate the Nuss procedure is an effective method for a pectus excavatum repair.

p084: Laparoscopic Partial Splenectomy for an Hemangioma of the Spleen

Bailez M. , Elmo G. and Golberg K. Pediatric Surgery , Garrahan Htal Bs As . Argentina

Aim Present the first case report of a successful laparoscopic segmentary splenectomy for a spleen neoplasm in pediatrics.

Introduction Splenic hemangioma is a rare disorder but remains the most common benign neoplasm of the spleen .It often has a latent clinical picture but spontaneous rupture may occur .Diagnosis is most often made after histologic findings of a resected solid spleen tumor. Treatment most often consists in splenectomy.Laparoscopic preservation of spleen has been previously reported for the treatment of cysts and traumatic lesions.

We present a child with a solid spleen tumor treated with a laparoscopic partial splenectomy with a postoperative diagnosis of capilar hemangioma.

Case Presentation A 2 years old male presented with recurrent abdominal pain. Ultrasonography and CT showed a 4.05 x 3.63 cm hipoecogenic mass involving the spleen pedicle. A laparoscopic approach in the prone position with a slight left side elevation showed a solid tumor in the lower pole of the spleen involving the splenic main vessels.

We used 4 ports : an umbilical 10mm one for the lens ; one left lower quadrant 5 mm for the surgeon right hand ; one epigastric 5mmfor retraction and suction and one 5mm in the midline between the umbilicus and the epigatric port for the surgeon left hand. The bipolar vessel sealing system was used successfully as the primary method for vessel occlusion . Approaching the upper border of the tumor , we found a splenic upper pole vascular pedicle which was preserved .Transection of the splenic tissue was completed using monopolar hook and the bipolar vessel-sealing device,following signs of isquemia on the surface of the spleen. Spleen upper ligaments were left on site to prevent a wandering residual spleen. The resected spleen was extracted in a bag through a small pffannestiel incision.

Results Operative time was 75 min . Hospital stay was 2 days . Histologic exam showed a capilar hemangioma. Doppler US is positive after 2 months of follow up.

Discussion This is the second splenic solid tumor treated by laparoscopy in our institution and the first successfully resected preserving splenic tissue. The type of vascular supply and the use of the bipolar system device made a safe and bloodless segmentary splenectomy possible.

p085: BILIOINTESTINAL LAPAROSCOPIC ENTEROSTOMY (BILE) FOR EXTRAHEPATIC BILE DUCT ATRESIA

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The Kasay Roux-en Y portoenterostomy has been usually performed using one of the largest incisions in pediatric surgery. In 2001 we first described the laparoscopic techniques and the novel transumbilical jejunojejunostomy (JJ), that may be called biliointestinal laparoscopic enterostomy (BILE). This paper shows the outcomes and the learning curve with the first 11 cases.

Methods: 7 boys and 4 girls, 25 to 76-days old, had BILE with 3 or 4 trocars. The JJ was done with a laparoscopic stapler (n=6)) or handsewn suture (n=5). Results: There were no complications related to laparoscopy or anesthesia. The average operative time declined from 190 minutes in the first 5 cases to 150 in the last six. Average postoperative time to feed: 36 hours; mean time for first stools: 18.5 hours; mean length of stay: 4.1 days; mean follow-up: 16 months. Early cholangitis (CG) developed in 2 cases (18%), and late CG in 2. Seven patients had hernias, umbilical or inguinal, and 1 umbilical recurred. Four patients (36%), anicteric, have colored stools. Three (27%) with cirrhosis have variably colored stools with mild jaundice. Two icteric with acholic stools or nephritis are waiting liver transplantation. One died after 6 months by cardiac disease.

Conclusions: BILE is feasible and safe in neonates and infants, allowing bile drainage when possible. The advantages for the liver transplantation are yet to be defined. Longer follow-up and comparative studies to open techniques are underway.

p086: LAPAROSCOPIC SPLENOPEXY FOR THE WANDERING SPLEEN SYNDROME

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Purpose: Wandering spleen is an uncommon condition characterized by the absence of the normal suspensory ligaments of the spleen. The spleen is highly mobile, suspended only by its vascular pedicle, and prone to significant complications including torsion, pancreatitis, intestinal obstruction, and bleeding from gastric varices. Splenectomy has been the traditional method of treatment, however, splenopexy has recently been advised to avoid the risk of postsplenectomy sepsis. We present a novel minimally invasive method of splenopexy for the wandering spleen.

Methods: A 15 year old female presented with a 3 week history of intermittent severe lower abdominal pain and was found to have a palpable mass and thrombocytopenia. Ultrasonography demonstrated an enlarged wandering spleen and cholelithiasis. Laparoscopic splenopexy and cholecystectomy were performed using five 5mm ports and one 10mm port. An absorbable polyglycolic acid mesh was used to secure the spleen in a circumferential manner to the diaphragmatic surface of the left upper quadrant.

Results: The patient had an uneventful perioperative course and was discharged home on post-operative day 1 tolerating a regular diet. The minimally invasive procedure was performed safely and without complications.

Conclusion: Laparoscopic splenopexy with splenic salvage is a safe method of treatment for the wandering spleen.

p087: LAPAROSCOPIC SPLENECTOMY FOR TORSION OF THE SPLEEN IN A GIRL WITH POLYSPLENIA SYNDROME

Dae-Yeon Kim, M.D., Seong-Chul Kim, M.D., In-Koo Kim, M.D., Department of Pediatric Surgery, Asan Medical Center, Seoul Korea

Torsion of the spleen in polysplenia syndrome is a very uncommon condition. A 14-year-old girl presented with a 4-day history of constant right upper abdominal pain. Her vital signs were stable. Abdominal examination revealed marked abdominal tenderness and guarding on right upper quadrant. Abdominal sonography and CT showed a homogenous soft tissue mass that was consistent with the infarct of a spleen in multiple spleens on right upper quadrant. The patient underwent laparoscopic examination. This revealed multiple spleens and a mass wrapped in inflammatory omental fat tissue on the right upper abdomen. There were midline liver and gallbladder, right-sided stomach, nonrotation of bowel. Adhesiolysis using a harmonic scalpel revealed that the mass was a infarcted spleen measured 4" in diameter. Splenectomy of infarcted spleen performed using harmonic scalpel, the spleen removed with endobag. Postoperatively the patient made an uneventful recovery and was discharged from hospital after 2 days. Laparoscopy is a useful procedure for evaluation of gastrointestinal anomalies and management of splenic torsion in polysplenic syndrome.

p089: THORACOSCOPIC ASSISTED RESECTION OF A CHEST WALL HAMARTOMA WITH SECONDARY ANEURYSMAL BONE CYST

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Introduction: Thoracoscopic assisted resection of thoracic aneurysmal bone cyst has never been described in the literature.Infantile cartilaginous hamartoma of the rib is a large tumor characterized by cartilaginous, vascular, and mesenchymal elements.Aneurysmal bone cysts are known for their hypervascularity. Different techniques have been described in the literature to avoid complications from hemorrhage.This is a presentation of a ten month old boy with a large chest wall mass, confirmed by computed tomography guided biopsy to be a chest wall hamartoma with secondary aneurysmal bone cyst.Due to concern for major hemorrhage during the procedure, the mass was first evaluated thoracoscopically and control of its major blood supply was planned for prior to open resection.

Methods: The patients was taken to the operating room and placed in the right decubitus.Three five millimeter thoracoscopic ports were placed in the left chest.Using blunt disection and electrocautery three separate intercostal neurovascular bundles were isolated.They were then divided anteriorly and posterioly using the harmonic scalpel.All thoracoscopic ports were then removed and formal open resection of the mass was performed.

Results: The blood supply was adequately controlled with the thoracoscopic ligation of the intercostals with an estimated blood loss of 40cc for the entire procedure.

Conclusion: The use of thoracoscopy can facilitate control of the blood supply of large chest wall tumors prior to open resection.

p090: ESOPHAGEAL ATRESIA:PURE THORACOSCOPIC APPROACH VS VIDEO-ASSISTED MINITHORACOTOMY REPAIR

F.J.Berchi; I.Cano; M.I. Benavent; E.Portela; J.Anton-Pacheco; A. Garcia Vazquez, HUMI 12 de Octubre, Dept. of Paediatric Surgery, University Complutense, Chief: Prof. F.J. Berchi, Madrid/Spain

Minimally invasive techniques permit excellent identification and vision of the anatomy in esophageal atresia, with or without fistula. Prenatal diagnosis is desirable. Special issues to be examined are: presence of a tracheo-esophageal fistula,measurement of esophageal gap and localization of the aortic arch. We show 3 cases of esophageal atresia,2 without fistula type I and 1 type III, treated by means of a pure thoracoscopic procedure or video-assisted minithoracotomy. The surgical steps are similar in both techniques:Identification of upper pouch and the distal esophagus or fistula, careful dissection avoiding devascularization and an end to end anastomosis.Fibrin glue has been used in 2 patients and a thoracic drain in all of them(2 extrapleural and 1 intrapleural). An extrapleural thoracic drainage has been used left in 2 cases,and an intrapleural in 1 which was removed after a few hours in the pure thoracoscopy. The postoperative course has been excellent in all the cases. No postoperative leakage or gastroesophageal reflux up to the present time. None of the babies had life-threatening associated anomalies. Thoracic endosurgery offers sharp advantages compared to classic open procedures: Less postoperative pain,shorter ICU and total hospital stay, better cosmetic result and no spine or costal morbility. Enhanced vision of the anatomical structures allows precise identification and dissection, decreasing the rate of postoperative complications.

p091: THORACOSCOPIC REPAIR OF DIAPHRAGMATIC EVENTRATION

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AIM: We share our experience of a 6-month old child who presented with recurrent chest infections associated with a right diaphragmatic eventration and underwent thoracoscopic plication with good results.

TECHNIQUE: In the left lateral position three five-millimetre ports were inserted into the right hemithorax.

A 30-degree telescope was introduced and carbon dioxide insufflation to 8 mm Hg yielded good views of the bulging right hemidiaphragm. Interrupted 2/0 gortex sutures were used to plicate in an antero-posterior direction and tied extra-corporeally. This achieved adequate flattening of the hemidiaphragm. The procedure lasted 100 minutes with no cardio-respiratory compromise.

RESULTS: The child was managed in intensive care overnight and returned to the ward subsequently. A post-op chest x-ray demonstrated a well descended right hemidiaphragm. He made an uneventful recovery and was discharged on the third postoperative day. By four months he was off all medications with no lower respiratory infections. At one year follow up he was discharged from our care being asymptomatic and a chest x-ray at that time showed a dramatic improvement of the right diaphragm.

CONCLUSION: Thoracoscopic approach to treat diaphragmatic eventration in children is a viable option with all the known advantages of minimally invasive surgery

p092: THORACOSCOPIC AORTOPEXY - A THREE PORT TECHNIQUE TO REPLACE OUR USUAL LATERAL THORACOTOMY APPROACH.

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Our usual route for aortopexy is via a left lateral thoracotomy. This allows visualization of the ascending aorta and brachiocephalic trunk and the incision is arguably more acceptable than a median sternotomy. The key to aortopexy is the laying-in of sutures to allow for subsequent sequential knot tying while the sternum is manually depressed, preventing strain being placed on the first suture site (with the potential for aortic bleeding if the suture is avulsed).

We devised a thoracoscopic method for reproducing the technique used in the open procedure. Three 5mm ports are placed along the mid axillary line, the thymus is mobilized and/or removed, and the pericardium opened to expose the aortic root. Three sutures are

sequentially placed (from a caudad to cephalad direction) through the aorta and the sternum just to the right of the midline. Each is brought out through a different port (inferior to superior) without tying the knot, requiring the telescope, forceps, and needle holder to be juggled from one port to the other as each suture is laid in. The sternum is then compressed from without and the sutures tied in an extracorporeal fashion. The sternum is then released and the aortopexy at this stage is supported at three points. Four sutures are then placed and immediately tied, from the aortic root to the brachiocephalic trunk, in a line to the left of the midline.

We report a case of a 29 month old girl in whom this procedure was performed. Her hospital course was uneventful and she was discharged 48 hours postoperatively with complete resolution of her symptoms.

p093: THORACOSCOPIC TREATMENT OF INFLAMMATORY LUNG DISEASES IN CHILDREN

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Advanced cases of empyema require surgical debridement of infected pleural debris. Thoracoscopy now allows surgical debridement with potentially less morbidity. Visibility is excellent in children and approximates the exposure during an open procedure. Our study discusses thoracoscopic treatment of inflammatory lung diseases with illustrative case reports.

We have treated 14 cases presenting with empyema and/or postpneumonic abscess using thoracoscopic approach, during November 2001 – September 2002. There were 9 males and 5 females of age 2.5 – 7 years (average 5.2 y). Preoperative evaluation was determined by US or CT. Spontaneous breathing was desirable to facilitate maintenance of the pneumothorax. Thorax cavity was insufflated with 5 mmHg CO2. Empyema debridement was performed using two or three reusable 2.8 - 5 mm ports or the 5 mm StepTM trocar assembly. Four cases were treated through a single port. Simple detachment of the abscess debris and aspiration was all that was needed followed by tube drainage. The chest tubes were removed on an average 4.6 days (2-10 d) and the patients were discharged in a week. An additional chest tube had to be placed in one case with subcutaneus emphysema. All of the cases' chest radiographs, except for one with minimal persistent air entrapment, returned to normal.

Thoracoscopy has the advantage of decreased perioperative pain, less postoperative pulmonary compromise, and comparable or lower cost when compared with open thoracotomy. Hospital stay and duration of chest tube drainage are shorter for thoracoscopic procedures.

p094: THORACOSCOPIC TREATMENT OF SYMPTOMATIC RIB EXOSTOSIS

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Familial exostosis is a condition that causes abnormal bone growth from the surface of a bone, often involving the ossification of muscular attachments and surrounding soft tissue. The osteoma-type of lesions are frequently seen in long bones and ribs and may become symptomatic due to local pressure and inflammatory reaction. Pain is the most common symptom and treatment requires excision of the osteoma. We report the case of a 17 year old female with congenital exostosis who developed severe rib/chest pain. CT scan of the chest confirmed the presence of two osteomas with protrusion into the pleural cavity of the left chest. Thoracoscopic exploration with a 5 mm, 30 degree angled thoracoscope, confirmed the presence of the two lesions in ribs number 3 and 7, and identified a third smaller lesion in the 6th rib. Resection of all lesions was accomplished using thoracoscopic angled bone rongeurs inserted through a single 10 mm trocar. The patient was discharged home 48 hours post-operatively and has remained asymptomatic (one year follow-up). This technique proved effective in the management of this unusual problem and it eliminated the need for thoracotomy.

p095: MINIMALLY INVASIVE REPAIR OF DIAPHRAGMATIC HERNIA AND EVENTRATION

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INTRODUCTION: Diaphragmatic defects generally do not require a complex structural repair, but they have traditionally been approached through a generous open thoractomy or laparotomy, with its attendant morbidity. To avoid this morbidity, we have attempted to repair 11 diaphragmatic hernias and eventrations using thoracoscopy or laparoscopy.

METHODS: Diaphragmatic hernias and eventrations were approached through three 5 mm thoracoscopic ports, or three 5 mm laparoscopic ports. In the thoracoscopic cases, 4 torr of capnothorax was applied, and single-lung ventilation was not required. Freehand 2-0 silk sutures were used to close all defects.

RESULTS: Seven children (age 2 d to 3 y) had a diaphragmatic hernia. Of the four who underwent a laparoscopic approach, 3 were successfully completed in 213, 110, and 98 min, but the youngest required conversion to (mini-)laparotomy for placement of a single suture. Of the 3 who underwent thoracoscopic hernia repair, two were completed in 129 and 55 min, but one required conversion for a congenitally short esophagus. All 4 children (age 15 d to 14 m) with eventration had a successful thoracoscopic plication in 96, 178, 68, and 61 min. All children recovered uneventfully, and there were no recurrences.

CONCLUSIONS: We conclude that diaphragmatic hernias and eventrations can be safely and successfully repaired in a minimally invasive fashion, even in newborns and infants. The thoracoscopic approach may yield higher success rates than the laparoscopic approach because intra-abdominal organs do not obscure the view.

p096: COMPLICATIONS OF LAPAROSCOPIC SURGERY IN INFANTS

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Introduction: Minimally invasive surgery in infants and children has gained widely in practice. As a consequence, the number of surgeons performing laparoscopies has increased, as has the number of complications.

Material and Methods: Our purpose is to give a view on our experience. In our department in the period from 1978-2000 more than 1902 laparoscopic interventions have been performed. From 1978-1991, one single surgeon performed 161 laparoscopies and only had two complications. In the following years, from 1991-1994, 311 laparoscopies were performed by six different surgeons and 13 complications occured. Four laparoscopies had to be converted to open procedures. In the third period, from 1995-2000, 1430 laparoscopies were performed by 8 surgeons. 6 complications occured and in 24 cases conversions became necessary.

None of the children expired or suffered from permanent health disorders.

Summary: The number of laparoscopic complications depend on the experience of the surgeon. The laparoscopic surgeon has to be familiar with intraoperative complications. Furthermore he must be capable of independently managing them by converting laparoscopy to conventional laparotomy.

p097: THORACOSCOPIC LASER THERAPY OF INTRATHORACIC HEMANGIOMAS AND VASCULAR DISORDERS (CVD)

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Introduction: Thoracoscopy made also possible to perform the endoscopic laser application inside the thoracic cavity. Our purpose is to demonstrate the possibility of successful treatment of pulmonary and mediastinal hemangiomas and CVD in newborns, infants and children, by performing the same technique as in the treatment of cutaneous disorders.

Procedures: Threepoint thoracoscopy, arteficial pneumothorax, Nd Yag Laser 1064 nm Medilas Dornier, bare fiber 0,6 mm.

The laser parameters are to be adapted accordant to the different diagnosis:

Hemangioma:	Coagulation, noncontact, 25 W, 0,2 sec, interrupted
Lymphangioma:	Resection, fibertom mode, contact, 20 W, single impulse
Hemangioendothelioma:	LITT, standard LPS, 3-4 W, cw

Patients and methods: In a ten-year-period, from 1992 to 2002, 15 children underwent the thoracoscopic lasertherapy in our hospital. The tumours were localized in the mediastinum (n = 11), intrapulmonary (n = 1) and at the pleura (n = 2). The CVD consisted of 11 lymphangiomas, 2 hemangiomas, 1 AV malformation and 1 hemangioendothelioma.

Results: In all 15 children we achieved the complete resection or regression of the CVD without any complication. In only 3 cases a second session was necessary. All children are well.

p098: THORACOSCOPIC THYMECTOMY: BENEFITS OF THE MINIMALLY INVASIVE APPROACH

Suzanne Yoder, MD; Shinjiro Hirose, MD; Micheal Harrison, MD; Diana Farmer, MD; Hanmin Lee, MD, Department of Surgery, Division of Pediatric Surgery, University of California, San Francisco, CA, USA

PURPOSE: Comparison of various techniques used to perform thymectomy in the pediatric population.

METHODS: Retrospective review of a single institution experience with children undergoing thymectomy from 1996-2002. The main outcome variables include: clinical presentation, indication for operation, comorbidities, pre-operative studies, approach, operative time, pathology and post-operative course including pain medication requirements and length of hospital stay.

RESULTS: From 1996 to 2002, a single pediatric surgery team performed 9 thymectomies for medically refractory myasthenia gravis, cystic hygromas, cystic lymphangiomas and teratomas. Patients ranged in age from 21 months to 15 years of age. Five surgeries were performed via a minimally invasive approach. Four were performed via a transcervical excision, 2 required sternotomy for complete excision. Those children undergoing thoracoscopic thymectomy were all discharged on post operative day 2. Those with open procedures remained in the hospital for a minimum of 13 days and required a longer course of intravenous pain medication.

CONCLUSION: Patients undergoing thoracoscopic thymectomy have decreased pain medication needs, significantly decreased hospital stay and an obvious cosmetic advantage over those undergoing open procedures.

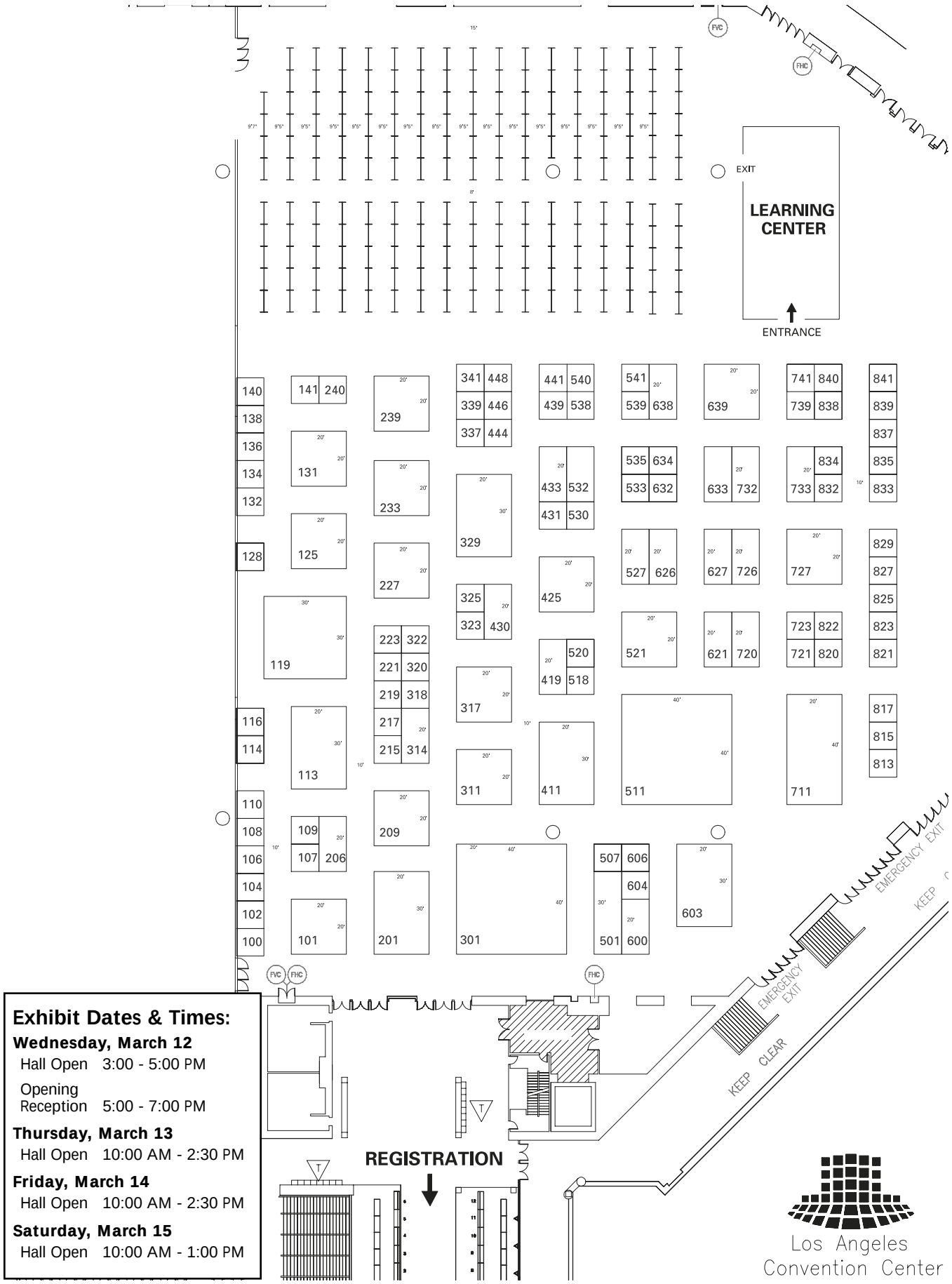

Exhibit Dates & Times:

Wednesday, March 12
Hall Open 3:00 - 5:00 PM
Opening Reception 5:00 - 7:00 PM

Thursday, March 13
Hall Open 10:00 AM - 2:30 PM

Friday, March 14
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BAXTER 726-728

Address: 1627 Lake Cook Rd
Deerfield, IL, 60015
Phone: 8479405737 Fax: 8479406525
Website: www.baxter.com

Profile: Baxter is your complete source for BioSurgery therapeutics and devices featuring Tisseel VH fibrin sealant and FloSeal Matrix Hemostatic Sealant. Tisseel VH fibrin sealant sets within seconds to create a fibrin matrix, while FloSeal controls active bleeding during surgery. Visit Booth #726-728 for detailed information about Baxter BioSurgery therapeutics and devices.

BERCHTOLD CORP 627

Address: 1950 Hanahan Rd
Charleston, SC, 29406
Phone: 8438180209 Fax: 8435696133
Website: www.berchtoldusa.com

Profile: For over 80 years, Berchtold has delivered better ways to operate through high performance products and focused OR solutions! Our Supersuite7 planning design and implementation process brings you an integrated surgical suite that includes CHROMOPHARE7.Surgical Lights, TELETOM7 Power Booms and OPERONJ Surgical Tables.

BOSTON SCIENTIFIC/MICROVASIVE 311

Address: One Boston Scientific Place
Natick, MA, 01760
Phone: 5086508000 Fax: 5086525026
Website: www.bsci.com

Profile: Boston Scientific has pioneered the design, development and manufacturing of devices for use in diagnostic, therapeutic, and palliative gastroesophageal, pancreaticobiliary, and colorectal endoscopic procedures. Boston Scientific products reduce procedural trauma, complexity, cost, time and risk to the patient.

BRAINTREE LABORATORIES, INC. 215

Address: 60 Columbian St. West
P.O. BOX 850929
Braintree, MA, 02185
Phone: 7818432202 Fax: 7818437932
Website: www.braintreelabs.com

Profile: Braintree laboratories will exhibit MiraLax™ , the first new Rx laxative therapy in 24 years. Benefits of No Grit, No taste have made MiraLax a popular choice for the treatment of constipation. Other products include, GOLYTELY®, Nu LYTELY®, PhosLo®.

BRIDGING HEALTH OPTIONS, LLC 829

Address: 2429 W. Commerce Street, Suite C
Ocean Springs, MS, 39564
Phone: 2288724091 Fax: 2288724752
Website: www.bridginghealthoptions.com

Profile: Bridging Health Options is a Bariatric surgery consulting service, assisting surgeons and/or hospitals in developing a quality Bariatric surgery support program that exceeds all guidelines & standards. We offer a complete Aturnkey@ program or you can choose from an extensive list of services.

CALMOSEPTINE, INC 535

Address: 16602 Burke Lane
Huntington Beach, CA, 92647
Phone: 7148403405 Fax: 7148409810
Website: www.calmoseptineointment.com

Profile: Calmoseptine® Ointment is a multi-purpose moisture barrier that protects and helps heal skin irritations from moisture, such as urinary and fecal incontinence. Calmoseptine® Ointment temporarily relieves discomfort and itching. Free samples at our booth!

CINEMED, INC. 817

Address: 127 Main Street, North
Woodbury, CT, 06798
Phone: 2032630006 Fax: 2032634839
Website: www.cinemed.com

Profile: Cine-Med distributes SAGES Top 12 Surgical Video Collection. This collection contains the 12 most common minimally invasive procedures performed by general surgeons as determined by the SAGES Educational Resources Committee. As an educational resource, this collection is an ideal training tool for surgical residents, as well as a good brush up for surgeons in practice. An expert laparascopic surgeon presents each procedure. Also available on CD-ROM are video presentations of each procedure as well as a printable commentary from the nation's leading laparascopic surgeons.

COMPUTER MOTION 119

Address: 130B Cremona Drive Suite B
Santa Barbara, CA, 93117
Phone: 8056853729 Fax: 8056859277
Website: www.computermotion.com

Profile: Computer Motion manufactures computer-assisted robotic-surgical systems. Products include: AESOP®, a voice-controlled endoscope positioning robot, the HERMES®, a centralized system to voice-control the OR, ZEUS® Surgical System for minimally invasive microsurgery procedures, and the SOCRATES™ System for remote surgeon telepresence and mentoring.

CON MED INTEGRATED SYSTEM 639

Address: 1815 NW 169th Place #4020
Beaverton, OR, 97006
Phone: 5036141106 Fax: 5036141109
Website: www.val-med.com

Profile: ConMed Integrated Systems provides true turnkey digital integration for OR's and all critical patient care areas featuring the Nurse's and Surgeon's Assistant Integrated Touch Screen Control Systems, surgical areas featuring the Nurse's and Surgeon's Assistant Integrated Touch Screen Control Systems, surgical lights, service arms and managers, seamless video networking, digital video capture, and web/tele-medicine.

CONMED CORPORATION 638

Address: 525 French Rd.
Utica, NY, 13502
Phone: 8004486506 Fax: 8004383051
Website: www.conmed.com

Profile: CONMED® Corporation, headquartered in Utica, NY, features a full line of Electrosurgical Generators and Accessories, Argon Beam Coagulation products, Minimally Invasive Surgical Instruments, Smoke Evacuation Systems, Surgical Suction Tubing, Instruments & Implants used for Arthroscopic sports medicine and powered surgical instruments such as drills ands saws, for orthopedic, ENT and neuro-surgery.

CONTEMPORARY SURGERY 102

Address: Dowden Publishing
110 Summit Ave.
Montvale, NJ, 07645
Phone: 2013919100 Fax: 2013912778
Website: www.contemporarysurgery.com

Profile: Contemporary Surgery provides surgeons with practical, immediately applicable information that helps them both overcome long-standing challenges and master new operative techniques or other advances. Through its symposiums with nationally renowned experts, its review articles, case reports, and other articles, Contemporary Surgery gives readers the insights they need to provide optimal patient care.

COOK SURGICAL 314

Address: 750 Daniels Way
Bloomington, IN, 47402
Phone: 8004574500 Fax: 8005548335
Website: www.cookgroup.com

Profile: Cook will be exhibiting a variety of products including: Surgisis® Inguinal Hernia Matrix and Surgisis® Gold Hernia Repair Graft, a naturally occurring extracellular matrix for tissue reinforcement, Ciaglia Blue Rhino® Percutaneous Tracheostomy, Introducer Sets, Products for Common Bile Duct Exploration, Cholangiography Catheters and Cook Spectrum® Antimicrobial Impregnated Central Venous Catheters.

CURON MEDICAL, INC 233

Address: 735 Palomar Ave
Sunnyvale, CA, 94085
Phone: 4087339910 Fax: 4085221188
Website: www.curonmedical.com

Profile: Curon Medical, Inc. develops, manufactures and markets innovative proprietary products for the treatment of gastro-intestinal disorders. The Stretta Procedure is the less invasive, endoscopic alternative to anti-reflux surgery. The Stretta System consists of a radio-frequency generator and single use energy delivery catheter. The Secca Procedure is a minimally invasive outpatient procedure for treatment of fecal incontinence

DAVOL, INC. 507

Address: 100 Sockanossett Crossroad
PO Box 8500
Cranston, RI, 02920
Phone: 4014637000 Fax: 401 4633143

Profile: See how the Davol® Prefix® Plug redefined inguinal hernia repair. The Bard Kugel™ Patch is the first mesh designed for open tension-free perperitoneal hernia repair.

ENCISION, INC. 822

Address:4828 Sterling Drive
Boulder, CO 80301
Phone: 303-444-2600 Fax: 303-444-2693
Website: www.encision.com

Profile: Encision's AEM® Larparascopic Instruments are shielded and monitored to prevent stray electrosurgical burns. They are designed to function identically to conventional 5mm instruments with added benefit of enhances patient safety and are available in all preferred shapes, sizes, and styles.

ETHICON ENDOSURGERY, INC. 301

Address: 4545 Creek Road
Cincinnati, OH, 452422839
Phone: 5133377100 Fax: 5133372000
Website: www.surgeonsforum.com

Profile: Ethicon Endo-Surgery is transforming patient care through innovation with its comprehensive line of minimally invasive surgical products. Ethicon will showcase the Harmonic Scalpel® with hand activation, the Long 45 ENDOCUTTER® and the longer sleeve LAP DISC for the bariatric surgeon.

EUROPEAN ASSOCIATION FOR ENDOSCOPIC SURGERY 823

Address: PO Box 335
5500 AH Veldhoven
Netherlands, ,
Phone: 01131402549777 Fax: 01131402549777
Website: www.eaes-eur.org

Profile: The European Association for Endoscopic Surgery and Other Interventional Techniques (E.A.E.S.) was founded in October 1990 with the following aims:

Evaluation of endoscopic surgery and interventional techniques in Europe.

The coordination and training of these techniques in Europe

To promote scientific studies in order to develop an identity for European Endoscopic Surgery

The Association consists of European medical practitioners who, with the exception of Corporate Members, actively practice surgery and any kind of Endoscopic surgery. The Association has Founding Members, Acitve Members, Candidate Members, Corporate Members and Honorary Members, with currently a total of 3000 members.

EUROPEAN INSTITUTE OF TELESURGERY 444

Address: Hopitaux Universitaires1 Place De L'hopital
Strasbourg, , 67091 France
Phone: 33388119008 Fax: 33388119099
Website: EITS.org

Profile: EITS is the most renowned academic center for laparascopic training. Located in Strasbourg, France, it is training more than 3,000 surgeons in laparascopic surgery every year. Surgeons can learn laparascopic techniques during intensive or advanced courses organized all along the year in digestive, colorectal, endocrine, pediatrics, aortoiliac, urology, morbid obesity and hernia repair surgery.

FLEET PHARMACEUTICALS 425

Address: 4615 Murray Place, PO BOX 11349
Lynchburg, VA, 245061349
Phone: 4345228470 Fax: 4348476110
Website: www.cbfleet.com

Profile: Fleet Pharmaceuticals, the maker of Fleet® Phospho-soda®, is pleased to announce the introduction of Fleet® Phospho-soda® ACCU-PREP™, a complete bowel cleansing system designed to eliminate patient confusion and increase patient comfort.

GENERAL SURGERY NEWS 630

Address: 545 West 45th Street, 8th Floor
New York, NY, 10036
Phone: 2129575300 x263 Fax: 2129577230
Website: www.mcmahonmed.com

Profile: General Surgery News is the only surgery-related newspaper mailed to every general surgeon, surgical resident, colon and rectal surgeon, surgical oncologist, trauma surgeon, and critical care surgeon in the U.S. General Surgery News specializes in presenting late-breaking clinical news from all major surgery meetings. Monthly editorial sections include physician debates of 'hot topics' in surgery, a 'Residents Corner', educational review, summaries of important journal articles, a section of new products and FDA updates and more.

GENZYME BIOSURGERY 501

Address: 2100 Evergreen Boulevard
Duluth, GA, 30096
Phone: 6172527500 Fax: 6787754001
Website: www.genzymebiosurgery.com

Profile: Genzyme Biosurgery is the leader for adhesion prevention following abdominopelvic surgery. Seprafilm® Adhesion Barrier is a bioresorbable barrier that separates adhesiogenic tissue surfaces during the critical 7-day period of adhesion formation. In a pivotal abdominal clinical study, Seprafilm® Adhesion Barrier prevented adhesions in 51% of patients.1 No statistically significant differences were observed in the incidence of adverse events comparing Seprafilm® and control patients. Sepramesh™ Biosurgical Composite is a polypropylene mesh coated on one side with a HA/CMC adhesion barrier. Sepramesh™ is proven to prevent adhesion formation to the mesh while providing strong tissue ingrowth2 . (1 Becker 1996. 2Greenwalt 2000)

GLAXOSMITHKLINE 739

Address: 3 Franklin Plaza, 1600 Vine St.
Philadelphia, PA 19102
Phone: 919-483-2100 Fax: 919-483-7778
Website: www.gsk.com

Profile: GlaxoSmithKline is a leading research-based ;pharmaceutical company with a powerful combination of skills to discover an deliver innovative medicines. We offer a number of programs to support effective health management strategies and improve patient care. Please visit our exhibit to learn more about out products.

HAEMACURE CORPORATION 431

Address: 2 North Tamiami Trail, Suite 802
Sarasota, FL, 34236
Phone: 941 3643700 Fax: 9413643734
Website: www.heamacurecorp.com

Profile: Hemaseel™ APR, the first commercially available Fibrin Sealant, is a biological tissue adhesive with superior sealant and hemostatic properties. Hemaseel™ APR is a prepackaged, ready to mix Fibrin Sealant which offers surgeons a new level of component consistency and viral safety. Haemacure Corporation is dedicated exclusively to the innovation in Fibrin Sealants.

HOVERTECH INTERNATIONAL 634

Address: 603 N. 2nd St
Allentown, PA, 18102
Phone: 6104328753 Fax: 6104339107
Website: www.hovermatt.com

Profile: The Hovermatt™ Patient Transfer Technology creates a Acushion of air@ to reduce friction and facilitate lateral patient transfers. It helps reduce worker's comp. injuries while providing a very comfortable transfer. There is no weight limit.

IMAGE STREAM MEDICAL 839

Address: 410 Great Road, Box B8
Littleton, MA 01460
Phone:978-486-8494 Fax: 978-428-2694
Website: www.imagestreammedical.com

Profile: Image Stream Medical (ISM) produces motion video and still image recording devices that record surgical procedures onto digital medium (DVD, CD) immediately post procedure. ISM also provides post-procedure video production software to quickly create high quality video presentations.

IMMERSION MEDICAL 633

Address: 55 West Watkins Mill Road
Gaithersburg, MD, 20878
Phone: 3019843706 Fax: 3019842104
Website: www.immersonmedical.com

Profile: Immerson Medical, Maryland, is the leading producer of computer-based medical training simulators enabling healthcare personnel to practice minimally invasive procedures without placing patients at risk. Three product line cover Intravenous Therapies, Endoscopic Procedures, and Endovascular Interventions. More information is available at www.immersion.com

INAMED CORPORATION 227

Address: 5540 Ekwill St.
Santa Barbara, CA, 93111
Phone: 8006244261 Fax: 8056815765
Website: www.bioenterics.com

Profile: INAMED Health manufactures and distributes the BioEnterics® LAP_BAND System, the premier minimally invasive surgical solution for the treatment of morbid obesity; the surgery; and other obesity treatment devices.

INKINE PHARMACEUTICAL 820

Address: 1787 Sentry Parkway West Bld 18, STE. 440
Blue Bell, PA, 19425
Phone: 2152836850 Fax: 2152854600
Website: www.inkine.com

Profile: InKine Pharmaceutical Company is a specialty pharmaceutical company focused on the development and commercialization of products for the gastrointestinal market. Visicol Tablets: Sodium phosphate oral tablets indicated for cleansing of the bowel as a preparation for colonoscopy in adults 18 years of age or older.

INLET MEDICAL, INC. 838

Address: 10180 Viking Drive
Eden Prairie, MN 55344
Phone: 952-942-5034 Fax: 952-829-7112
Website: www.inletmedical.com

Profile: Inlet Medical, Inc. provides a variety of disposable procedure kits for minimally invasive surgical procedures. The Metra PS® kit offers gynecologists a quick, reliable alternative for repositioning the uterus to its anatomically correct setting. The Inlet CloseSure™ procedure kit provides a fast, simple, and effective method to close all trocar entry sites. The Elevest® kit offers a unique method for the strengthening of he utero-sacral ligaments and support of the pelvic floor.

INTUITIVE SURGICAL 711

Address: 950 Kifer Rd
Sunnyvale, CA, 94086
Phone: 8888684647 Fax: 4085231390
Website: www.intuitivesurgical.com

Profile: Intuitive Surgical, the market leader in operative surgical robots, has developed the *da Vinci*™ Surgical System, still the only surgical robot cleared by the FDA for laparoscopic and thorascopic procedures. The *da Vinci*™ Surgical System utilizes articulating Endo Wrist™ Instruments and a unique 3-D InSite™ Vision System. For more information, visit our website at www.intuitive surgical.com

JVC HDTV 815

Address: 2246 Camino Ramon
San Ramon, CA 94583
Phone: 925-355-0750 Fax: 925-355-0777
Website: www.ttimedical.com

Profile: High Definition Endoscopic Video Camera, Digital Image Capture System, High Definition Display

JARIT SURGICAL INSTRUMENTS 600, 602

Address: 9 Skyline Drive
Hawthorne, NY, 10532
Phone: 914 592 9050 Fax: 914 5928056
Website: www.visitus.com

Profile: A comprehensive line of high quality, reusable, innovative endoscopic instruments if offered by JARIT Surgical Instruments. The Instrument People...specializing exclusively in surgical instruments. JARIT features laparascopic instruments in diameters from 3.5mm to 10mm, and lengths from 24cm to 45cm.

KARL STORZ ENDOSCOPY AMERICA,INC. 411

Address: 600 Corporate Pointe
Culver City, CA, 90230
Phone: 3103388100 Fax: 3104105537
Website: www.karlstorz.com

Profile: Karl Storz will be introducing AIDA™ DVD, the new single-source solution for capturing, editing and archiving digital video. Karl Storz will be exhibiting its fully integrated endosurgery line, including Hopkins® rod lens telescopes, reusable trocars, extended-length bariatric instruments, 42cm laparascopes, ClickLine® hand instruments and OR1 custom-designed operating rooms. OR1 provides centralized control of every OR component, including medical devices, teleconferencing, hospital computers and lighting.

LSI SOLUTIONS 518

Address: 7796 Victor-Mendon Road
Victor, NY 14564
Phone: 585-869-6600 Fax: 585-742-0886
Website: www.lsisolutions.com

Profile: *Sew-Right*® SR.5™ - The single squeeze suturing device, is a re-loadable 5mm suture device that provides precise and rapid suture placement for minimally invasive surgery.

Ti-Knot® TK™ - The device to instantly secure and trim excess sutures, is a 5mm device, which delivers a Titanium Knot™ Top Hat that is strong and reliable.

InsideView™ - The only medical display system to protect advance high-resolution videoscopic images onto a sterile screen within the surgical field.

LEXION MEDICAL 318

Address: 1957 Gateway Blvd.
St. Paul, MN, 55112
Phone: 6516350000 Fax: 6516361671
Website: www.lexionmedical.com

Profile: The Insuflow® represents a unique advancement - a return to the normal homeostatic state of the peritoneal cavity. The Insuflow® filters, heats, and hydrates the laparascopic gas to physiologic conditions. Significant patient benefits are provided while reducing costs.

LIFECELL 109

Address: 1 Millennium Way
Branchburg, NJ, 08876
Phone: 9089471100 Fax: 9089471088
Website: www.lifecell.com

Profile: LifeCell Corporation is a bioengineering company engaged in the development and commercialization of tissue regeneration and cell preservation products. Through cutting edge technology, LifeCell Corporation offers Physicians AlloDerm®, acellular dermal graft, Repliform®, tissue regeneration matrix, and Cymetra®, for the replacement of lost or damaged tissue.

LIPPINCOTT, WILLIAMS & WILKINS 110

Address: 11636 Andasol Ave
Granada Hills, CA, 91344
Phone: 8183630477 Fax: 6033720007
Website: www.lww.com

Profile: Lippincott Williams (LWW) is a leading international publisher of professional health information for physicians, nurses, specialized clinicians and students.

LIVLITE, INC 106

Address: 900 Wilshire Blvd Suite 1129
Los Angeles, CA, 90017
Phone: 2136238410 Fax: 2136239764
Website: www.liv-lite.com

Profile: LiveLite Weight Loss ProgramK, (www.liv-lite.com) provides hospitals and physicians with a complete, turnkey Bariatric Surgery program including implementation, marketing and on-going management within a nationwide network of hospital Centers of Excellence..

MACROPORE BIOSURGERY, INC. 833

Address: 6740 Top Gun Street
San Diego, CA 92121
Phone: 858-458-0900 Fax: 858-458-0944
Website: www.macropore.com

Profile: Welcome to MacroPore Biosurgery, Inc. We are a leader in the design, development and production of bioresorbable polymer implants, and emerging new technologies for use in a variety of surgical applications within the biosurgery market:

Bioresorbable implants – bone healing and fixation

Bioresorbable anti-adhesion products

Regenerative technologies in tissue engineering

Healing compounds and growth factors.

MAHE INTERNATIONAL, INC. 723

Address: 490 Craighead Street
Nashville, TN, 37204
Phone: 6152697256 Fax: 6152694605
Website: www.maheinternational.com

Profile: At MAHE we specialize in surgical and office equipment for the Otolaryngology, Laparascopy and arthroscopy markets. All of our medical instruments are manufactured in Germany using only the top grade of German Steel, and we offer a one-year guarantee on all of our medical instruments and repairs. In addition to our surgical and office instruments, MAHE manufactures some of the top rigid and flexible Endoscopes in the world. Each MAHE Endoscope undergoes a thorough examination in all areas of functionality, thus ensuring that only the highest quality endoscopes reach the U.S. market. Our Nashville, TN office services the United States and Canada.

MARKET ACCESS PARTNERS 732

Address: 3236 Meadowview Road
Evergreen, CO, 80439
Phone: 3035261900 Fax: 3035267920
Website: www.meti.com

Profile: Market Access Partners provides marketing research consulting to the medical device industries. We use innovative qualitative and quantitative methodologies to research opinions of physicians, nurses, and patients. We offer a management-oriented approach to product development and marketing.

MARY ANN LIEBERT, INC. PUBLISHERS 134

Address: 2 Madison Avenue
Larchmont, NY 10538
Phone: 914-834-3100 Fax: 914-834-3771
Website: www.liebertpub.com

Profile: Mary Ann Liebert, Inc., is known for establishing authoritative peer-reviewed journals in cutting-edge areas of science and biomedical research. We will be exhibiting the peer-reviewed *Journal of Laparoendoscopic & Advanced Surgical Techniques and Pediatric Endosurgery & Innovative Techniques* along with other related journals

MEDICAL EDUCATIONAL TECHNOLOGIES, INC 813

Address: 600 Fruitville Road
Sarasota, FL, 34232
Phone: 9413425609 Fax: 9413791621
Website: www.meti.com

Profile: METI (www.meti.com), the exclusive distributor of Mentice surgical education systems in the Americas, will showcase the Procedicus® surgical simulation platform, the Minimal Invasive Surgical Trainer (MIST) with its new Suturing and Knot Tying module, and new task training modules for laparoscopy. This powerful platform provides a turnkey solution for laparoscopy, arthroscopy, and interventional cardiology/radiology surgery education.

MEDICAL MEASUREMENT SYSTEMS841

Address: 100 Main Street, Suite 111
Dover, NH 03820
Phone: 800-236-9310 Fax: 800-750-3155
Website: www.mmsinternational.com

Profile: Offering a complete line of Gastrointestinal Monitoring Equipment and accessories. UPS2020 system performs Esophageal, Anorectal, Sphincter of Oddi, Antroduodenal, and Colon manometry studies including Video/Fluoroscopy. Orion Logger uses our NEW pHersaflex disposable pH probe (fits all brand loggers), capable of performing multichannel 24-72 hours of ambulatory pH monitoring.

MEDIFLEX 433

Address: 250 Gibbs Rd.
Islandia, NY, 11749
Phone: 6315828440 Fax: 6315828487
Website: www.mediflex.com

Profile: Mediflex offers Laparascopic holders and positioners including Aendo-assist@ robotic holding system, a wide range of Laprascopic and General Tissue Retractors, and a complete line of Laprascopic instruments for General and Pediatric applications.

MEDOVATIONS 448

Address: 102 E. Keefe Ave
Milwaukee, WI 53212
Phone: 414-265-7620 Fax: 414-265-7628
Website: www.medovations.com

Profile: Medovations' Transillumination System aids in the identification of the esophagus, rectum and other structures by transillumination during laparoscopy, thoracoscopy, or open procedures. This device enhances patient safety by transmitting intense light without dangerous heat generation.

MEDTRONIC 606

Address: 4000 Lexington Ave. N. MSX 180
Shoreview, MN, 55126
Phone: 7635149700 Fax: 7635149745
Website: www.medtronic.com

Profile: Medtronic Gastroenterology is your one source for the newest and most innovative diagnostic equipment for 48-hour pH testing, esophageal and anorectal manometry plus Enterra Therapy for gastroparesis. New products include Bravo™ pH Monitoring System for catheter-free pH monitoring and Bilitec™ 2000 for bile reflux and ElectroGastroGraphy (EGG) for gastric motility.

MICROLINE, INC 430

Address: 800 Cummings Center, Ste. 157X
Beverly, MA, 01915
Phone: 9789229810 ext25 Fax: 9789229209
Website: www.microline.com

Profile: Microline's integrated modular laparascopic system consists of reusable instrument handles and disposable tips including scissors, graspers and dissectors. Our laparascopic line also offers a reusable multi-fire 10 mm clip applier with a disposable 19 clip cartrdge.

MIS FELLOWSHIP COUNCIL 132

Address: 2716 Oean Park Blvd. Ste. 3000
Santa Monica, CA 90405
Phone: 310-314-2536 Fax: 310-314-2589
Website: www.misfellowshipcouncil.org

Profile: The MIS Fellowship Council is an association of MIS and Surgical Gastrointestinal Endoscopy fellowship directors formed to address the unique needs of fellowship directors and applicants. The MIS Fellowship Council provides a communication forum for disseminating information about fellowship issues and communicating the Council's positions to other organizations. The Council primary goals are creating a fellowship program registry and standardizing the fellowship application and selection process for the upcoming application cycle. Residency program directors, fellowship directors and upcoming fellowship applicants are encouraged to stop by this booth to learn more about the organization and its goals.

NASHVILLE SURGICAL INSTRUMENTS 322

Address: 322 Northcrest Dr.
Springfield, TN, 37172
Phone: 6153824996 Fax: 6153846568
Website: www.nsipreview.com

Profile:Laparscopic Ventral Hernia repair made easy with a new approach. Laparascopic Cholanbgiography without Cystic Duet Cannulation.

NDO SURGICAL INC 104

Address: 125 High Street, Suite 7
Mansfield, MA, 02048
Phone: 5083378881 Fax: 5083378882
Website: www.ndosurgical.com

Profile: NDO Surgical, Inc. develops, manufactures, and markets innovative technologies for gastrointestinal disorders. The company's Endoscopic Full-Thickness Plicator™ has been designed to provide an outpatient treatment for gastro-esophageal reflux disease (GERD).

9TH WORLD CONGRESS OF ENDOSCOPIC SURGERY 827

Address: Alberto Chousleb, MD, FACS, President
The American British Cowdry Hospital
Sur. 138, No. 116, Col. Las Americas
Apartado Postal 18901 C.P. 01120 Mexico, D.F.

Profile: The 9th World Congress of Endoscopic Surgery will be held February 2-7, 2004 in Cancun, Mexico

OLYMPUS AMERICA INC. 201

Address: Medical Instrument Division
2 Corporate Center Drive
Melville, NY, 11747
Phone: 6318445533 Fax: 6318445447
Website: www.olympus.com

Profile: Olympus is the worldwide leading provider of the highest quality optical an digital imaging surgery systems. Olympus is revolutionizing MIS with digital surgery products: LTF-V3- flexible laparascopy with 4-way angulation, Endoeye™ - distal mounted CCD and advanced digital capturing, photography and printing solutions.

ONUX MEDICAL 832, 834

Address: Five Merrill Drive
Hampton, NH 03842
Phone: 603-929-6200 Fax: 603-929-6300
Website: www.onuxmedical.com

Profile: ONUX Medical developed and commercialized two 5mm reusable, MIS products with disposable suturing cartridges. Touche?, is a needle-free suturing instrument capable of producing 50 interrupted sutures without removing the system from the surgical site. Salute easily secures prosthetic mesh to tissue by forming unique, circular staples.

PARÉ SURGICAL, INC 107

Address: 7332 S. Alton Way, Ste. H
Englewood, CO, 80112
Phone: 3036890187 Fax: 3036890579
Website: www.paresurgical.com

Profile: PARÉ Surgical, Inc. is the leader in the development of innovative technologies for use in Minimally Invasive Surgery. The Quik-Stitch® One Port Delivery™ Endoscopic Suturing System simplifies suturing through the use of a pre-tied locking Roeder knot and a reusable delivery system available in 3mm, 5mm, an d10mm sizes. A disposable 5mm Suturing System is also available which utilizes the standard 5mm Quik-Stitch suture spools.

PENTAX PRECISION INSTRUMENT CORPORATION 626

Address: 30 Ramland Rd.
Orangeburg, NY, 109622699
Phone: 8004315880 Fax: 954-349-3846
Website:www.pentaxmedical.com

Profile: i-technology...integration of multiple data platforms, video streaming, voice technology, multi-media conferencing, on demand internet access, image management. All at the touch of a button!

PILLING SURGICAL 125

Address: 2917 Weck Drive, P.O. Box 12600
Research Triangle Park, NC 27709
Telephone: 919-361-3955 Fax: 919-361-3914
Website: www.pillingsurgical.com

Profile: See Teleflex & Weck

PNA MEDICAL SYSTEMS, L.P. 530

Address: PO Box 2015
Glens Falls, NY, 12801
Phone: 5187611193 Fax: 5187612637
Website: www.nnamed.com

Profile: PNA Medical Systems is proudly presenting their high quality endoscopic, laparascopic and arthroscopic instruments. Included will be reusable modular instruments, reusable shielded trocar systems and several innovative reposable alternatives. Get the features of disposables with the cost efficiency of reusables.

REACHIN TECHNOLOGIES, AB 538

Address: Arstaangsvagen 24
Stockholm, Sweden 11743
Phone: 46-8-566-76-00 Fax: 46-556-766-01
Website: www.reachin.se

Profile: Reachin Technologies will exhibit the Reachin Laparascopic Trainer (RLT), a laparascopic simulator for training of basic laparascopic skills and specific procedures. It is based on virtual reality with fully implemented haptics (force feedback).

RICHARD WOLF MEDICAL INSTRUMENTS CORP 209

Address: 353 Corporate Woods Parkway
Vernon Hills, IL, 600613110
Phone: 8479131113 Fax: 8479136959
Website:www.richardwolf.com

Profile: Richard Wolf offers a complete assortment fo products including: laparascopic and thoracoscopic instrumentation, 3 chip video camera systems, insufflators, and a complete line of instruments designed specifically for bariatric surgery. Please see our Panaview Plus, distortion-free laparascopes and micro laparascopy products.

SANDHILL SCIENTIFIC 821

Address: 9150 Commerce Center Circle #500
Highlands Ranch, CO, 80129
Phone: 3034707020 Fax: 3034702975
Website:www.sandhillsci.com

Profile: Sandhill Scientific offers a comprehensive series of esophageal diagnostics for refulx monitoring and motility testing. Two revolutionary new products utilize mufti-channel intraluminal impedance (MII). Concurrent MII-pH monitoring assesses both acid and non-acid reflux. Concurrent MII-manometry assesses both esophageae pressure and bolus transit during swallow.

SAUNDERS-MOSBY (DIV. OF ELSEVIER) 825

Address: 11363 Dulcet Ave
Northridge, CA, 91326
Phone: 8188316717 Fax: 8183605903
Website: www.elsevier.com

Profile: Saunders-Mosby is the world's largest medical book publisher. The latest surgery and G.I. textbooks will be available for viewing.

SLEEP DATA INC. 741

Address: 4420 Hotel Circle Ct. Ste. 240
San Diego, CA 92108
Phone: 619-299-6299 Fax: 619-299-6222
Website: www.sleepdata.com

Profile: Sleep Data, Inc. is a nationwide market leader in providing expert home-based diagnostic testing for sleep apnea syndrome. They have been working with bariatric centers across the country since 1995, performing rapid and cost-effective sleep apnea testing.

SKYTRON 323

Address: 5000 36th St. S.E.
Grand Rapids, MI, 49512
Phone: 6169570500 Fax: 6169575053
Website:www.skytronsurgical.com

Profile: Skytron provides state-of-the-art medical equipment including surgical tables and accessories, surgical, emergency, procedure, exam, cath lab and birthing room lighting. We also provide space management skybooms, surgical light handle cameras, flatscreen monitors, HERMES voice and touchscreen activation equipment for endosuite integration, smoke evacuation stainless steel and warming cabinetry, nurse document centers, scrub sinks and washer-disinfectors.

SLACK INCORPORATED 128

Address: 6900 Grove Rd.
Thorofare, NJ, 08086
Phone: 8568481000 Fax: 8568535991
Website: www.slackbooks.com

Profile: SLACK Incorporated is a medical publisher that has been in business for over 40 years. We are excited about our new latest in Gastroenterology. Stop by our booth to learn more about SLACK Incorporated and our newest publications.

SMITH & NEPHEW ENDOSCOPY 329

Address: 150 Minuteman Rd.
Andover, MA, 01810
Phone: 9787491386 Fax: 9787491577
Website: www.smithnephew.com

Profile: A global leader within arthroscopy and an innovator in endoscopic surgery, Smith & Nephew Endoscopy designs, develops, and manufactures endoscopic surgical instrumentation and techniques with the goal of reducing trauma and pain to the patient, reducing cost to healthcare systems and providing better outcomes for surgeons.

SNOWDEN PENCER 621

Address: 5175 South Royal Atlanta Drive
Tucker, GA, 30084
Phone: 7704960952 Fax: 7707232798
Website:www.snowdenpencer.com

Profile: Snowden Pencer is the manufacturer of the highest quality instrumentation and equipment for endoscopic surgery. Our product line includes Diamond-Flex®, Diamond-Touch, and Diamond-Port instruments as well as the latest technology in high flow insufflators.

SOFRADIM 632

Address: 200 Stonewall Blvd, Suite 2A
Wrentham, MA, 02093
Phone: 5083842070 Fax: 5083842074
Website: www.sofradim.com

Profile:Sofradim designs, manufactures and distributes unique and patented, mutifiber polyester hernia mesh products - Parietex® - for laparascopic and open approaches. Our Parietex® Composite helps prevent post-operative adhesions. The first fully resorbable hernia fixation device, Pariefix™, will be introduced.

SOVIS OPTIQUE 221

Address: B.P. 1 Le Gouffre
La Perte Sous Joaurra, , 77260 France
Phone: 3364363058 Fax: 3360277567
Website: www.sovis-optique.com

Profile: Glass components for optical lighting and radiation shielding (endoscopic) light guide, rigid fiber rods, flexible fiber bundles, lenses, optical coatings, X-ray shielding glass.

SPRINGER VERLAG 108

Address: 175 Fifth Ave.
New York, NY, 10010
Phone: 2124601500 Fax: 2124736272
Website: www.springerny.com

Profile: Springer-Verlag is a leading publisher of Medical Books and Journals, including Surgical Endoscopy. Visit the booth for a free sample copy of this and other journals, and to see the rest of our cutting-edge program in Surgery.

STARION INSTRUMENTS 520

Address:20665 Fourth St
Sarastota, CA 95070
Phone: 408-741-8773 Fax: 408-741-8774
Website: www.starioninstruments.com

Profile: Thermal Ligating Products for open and endoscopic surgery simultaneously seal and divide vessels providing hemostatic cutting of soft tissue. Hemostasis is achieved through the concurrent application of heat and pressure with no electricity required to pass through the patient.

STERIS CORPORATION 239

Address: 5960 Heisley Road
Mentor, OH, 44060
Phone: 4403542600 Fax: 4403546832
Website: www.steris.com

Profile: STERIS Corporation is a leading provider of surgical support and infection prevention systems, products, services and technologies worldwide. Since its founding in 1987, STERIS has earned its standing as a trusted partner of healthcare professionals in more than 5,000 hospitals.

STRYKER ENDOSCOPY 603

Address: 5900 Optical Court
San Jose, CA, 95138
Phone: 8004350220 Fax: 8004350111
Website: www.strykerendo.com

Profile: Stryker Endoscopy is the technology leader in cross specialty surgical video, voice activation, digital documentation, telesurgery and Enodsuite operating room. Featured will be the latest innovative products in video, laparoscopy and instrumentation.

SURGICAL PRODUCTS MAGAZINE 217

Address: 301 Gibraltar Dr
Morris Plains, NJ, 07950
Phone: 9732925100 Fax: 9735393476
Website: www.surgprodmag.com

Profile: Surgical Products is the premier source for news of technological advances in the operating room. It is used by the most important Surgical professionals, including: Surgeons, OR Supervisors, related department heads, and OR purchasing materials management.

SURGICAL ROUNDS 116

Address: 241 Foursgate Drive
Jamesburg, NJ, 08831
Phone: 7326561140 Fax: 7326561142
Website: www.mwc.com

Profile: Surgical Rounds is a monthly surgical journal with articles of practical, everyday clinical application. It reaches more than 50,000 surgeons and surgical specialists throughout the United States, including interns, residents, medical school faculty, and fulltime hospital and private practice surgeons.

SURGICON, INC. 727

Address: 400 Long Beach Blvd.
Stratford, CT, 06615
Phone: 2035808771 Fax: 2033808769
Website:www.surgicon.net

Profile: Surgicon offer innovative instrumentation, beginning with the SpringLock 5mm Ligation System. SpringLock is an alternative to traditional occluding clips that provides increased security and versatility including the ability to ligate vessels or other structures end0on and the ability to quickly close perforations in the gallbladder or other organs.

SURGRX 439

Address: 2629 B Terminal Blvd
Mountain View, CA 94043
Phone: 650-938-0424 Fax: 650-938-5664
Website: www.surgrx.com

Profile: SURGRX EnSEAL™ System for surgical hemostasis represents a new generation of precisely controlled bipolar tissue welding. The proprietary Smart Electrode™ technology achieves unparalleled performance for large vessel ligation and division.

SYNOVIS SURGICAL INNOVATIONS 733

(formerly Bio-Vascular, Inc.)

Address: 2575 University Avenue
St. Paul, MN, 55114
Phone: 6516033700 Fax: 6516429018
Website:www.synovissurgical.com

Profile: Synovis Surgical Innovations (Synovis SI), a division of Synovis Life Technologies, Inc., will display Peri-Strips® and Peri-Strips Dry® for staple line reinforcement in the bariatric surgical procedures of gastric bypass and gastric banding. Also displayed will be Peri-Guard® and Supple Peri-Guard® for abdominal and thoracic wall repair and other hernia soft tissue repair. Synovis SI develops, manufactures and markets these products as well as other specialty medical devices for use in cardiac, vascular, neuro, urologic and general surgeries.

TAUT, INC. 317

Address: 2571 Kaneville Court
Geneva, IL, 60134
Phone: 6302322507 Fax: 6302328005
Website: www.taut.com

Profile: Taut, Inc. manufactures and distributes 5mm, 10/11 mm and 12mm asymmetrical dilating access ports, 2mm and 3mm Mini-Ports for mini-laparoscopy, Ob/Gyn and Pediatric surgery, Peritoneal Intraducers®, Cholangiogram catheters, a CBDE kit and non-latex capillary drains.

TELEFLEX MEDICAL GROUP 125

Address: 2917 Weck Drive, P.O. Box 12600
Research Triangle Pk, NC, 27709
Phone: 9195448000 Fax: 9193613914
Website: www.teleflex.com

Profile: Please see Pilling Surgical and Weck

THOMPSON SURGICAL INSTRUMENTS, INC. 539

Address: 10170 East Cherry Bend Road
Traverse City, MI, 49684
Phone: 2319220177 Fax: 2319220174
Website: www.thompsonsurgical.com

Profile: Thompson Surgical Instruments, Inc., manufactures table-mounted retractors in a variety of configurations, providing surgeons easy access with excellent visibility.

TOP GUN 141, 240

Address: James C. "Butch Rosser, Jr., MD FACS
Beth Israel Medical Center
350 East 17th Street, 16BH
New York, NY 10003
Phone: 212-420-4337 Fax: 212-844-1039
Email: jrosser@chpnet.org

Profile: The "Top Gun Laparascopic Skill Shootout" exhibit brings thrills, excitement and competition to the quest of mastering minimally invasive surgery. This exhibit features the Yale based curriculum practiced by hundreds of institutions around the world.

TSL (TISSUE SCIENCE LABORATORIES) 541, 838

Address: 1141 Clark St. Suite D
Covington, GA 30014
Phone: 678-342-7808 Fax: 678-342-7844
Website: www.tissuescience.com

Profile: Tissue Science Laboratories, plc (TSL) is a medical device company specializing in human tissue repair. Formed in 1996,TSL is committed to developing innovative medical products that are safe, effective and have a positive impact on surgical outcomes and patient quality of life.

Core Technology: Permacol™ Collagen Implant

TSL is committed to innovative solutions for the surgical reconstruction, re-contouring, and repair of human tissue. The company's first technology, Permocol™ Collagen Implant, consists of collagen derived from porcine (pig) dermis. The collagen, still intact, is treated in such a manner that when implanted in the human body, it is non-allergenic and resistant to breakdown by the body's enzymes. Permacol™ Collagen Implant becomes a permanent, integral part of host tissue by allowing cell infiltration and revascularization to occur. Therefore, Permacol™ surgical implant is a safer option than synthetic meshes or donor tissue, which may not always be sterile and can destroy collagen.

UNITED STATES SURGICAL/ TYCO HEALTHCARE 511

Address:150 Glover Ave.
Norwalk, CT, 06856
Phone: 2038451000 Fax: 2038454404
Website: www.ussurg.com

Profile: United States Surgical, a unit of Tyco Healthcare Group LP, is a leading manufacturer of innovative wound closure products an advanced surgical devices. Our products are available through two primary business divisions; The Auto Suture Division which offers a complete line of surgical devices and laparascopic instrumentation for general and specialty procedures and the USS DG Sutures Division, one of the most comprehensive suture product lines in the industry.

U.S. BARIATRIC 840

Address: 4800 N.E. 20th Terrace #303
Fort Lauderdale, FL 33308
Phone: 954-351-7770 Fax: 954-771-7252
Website: www.usbariatric.com

Profile: Long recognized as a medical program of excellence, U.S. Bariatric now offers one of the most comprehensive and complete bariatric training programs in the world. Boasting a faculty of nationally recognized surgeons and multidisciplinary professionals, USBMI (usbmi.com) equips this country's next generation of successful bariatric professionals.

VALLEYLAB 521

Address: 5920 Longbow Drive
Boulder, CO, 80301
Phone: 3035302300 Fax: 3035306285
Website: www.valleylab.com

Profile: Permanently fuse tissue bundles and vessels up to 7mm in diameter without dissection in laparascopic procedures using Valleylab's new LigaSure Atlas™ sealer/divider. The ALigaSure Atlas™ sealer/divider provides versatile grasping for multiple tissue types, holding sealed tissue for easy transaction.

VISIONSENSE, INC. 339-341

Address:70 Hilltop Road
Ramsey, NJ 07446
Phone: 201-995-9200 Fax: 201-995-0600
Website: www.visionsense.com

Profile: Propriety technology providing MIS Surgeons with a realtime high resolution, natural Stereoscopic Vision.

VISTA MEDICAL TECHNOLOGIES, INC. 720

Address: 5451 Avenida Encinas, Suite A
Carlsbad, CA, 92008
Phone: 760 6039120
Fax: 7606039170
Website: www.vista.com

Profile: Vista Medical Technologies offers Bariatric Surgery program implementation and onsite program management to include: hospital business plans, laparascopic bariatric surgery preceptorship, minimally invasive visualization systems, and bariatric information systems. Vista also provides dietary supplements for gastric bypass patients.

WILSON-COOK MEDICAL 140

Address: 4900 Bethania Station Rd.
Winston-Salem, NC 27105
Phone: 336-744-0157 Fax: 336-744-5785
Website: www.wilsoncook.com

Profile: Wilson-Cook Medical is a world leader in gastrointestinal Endoscopy. Key products include sphincterotomes, stents, wire guides, forceps, snares, etc.. Recent innovations such as multi-band ligators, ultrasound needles and endoscopic suturing devices continue to keep us at the forefront of the medical industry.

W.L. GORE & ASSOC., INC. 419

Address: 3750 W. Kiltie Lane
Flagstaff, AZ, 860010900
Phone: 9287792771 Fax: 9287791456
Website: www.gore.com

Profile:W.L. Gore & Associates, Inc. is the worldwide leader in expanded polytetrafluoroethylene (dPTFE) technology. The Medical Division of Gore specializes in the design and manufacture of innovative medical devices.

WEBSURG 337

Address: A Place De L'hopital BP 40019
Strasbourg Cedex, , 67080 France
Phone: 33388119127 Fax: 33388119199
Website: www.websurg.com

Profile: WebSurg is a virtual university, accessible through the internet, specialized in minimally invasive surgery in general digestive and thoracic surgery as well as urology and gynecology. WebSurg offers more than 100 operating techniques, over 300 videos of surgical procedures ands expert opinions, photos and animated drawings. CME credits are available on www.websurg.com.

WECK, A TELEFLEX MEDICAL COMPANY 125

Address: 2917 Weck Drive, P.O. Box 12600
Research Triangle Park, NC 27709
Phone: 919-361-3955 Fax: 919-361-3914
Website: www.weckclosure.com

Profile: Weck has enhanced the popular Hem-o-lok® polymer ligating clip line with the automatic Endo5® ML Applier, for ligation of vessels up to 10mm all through a 5mm port.

See Pilling Surgical & Teleflex Medical Group.

WEIGHT FOR LIFE 325

Address: 801 North Tustin, #702
Santa Ana, CA, 92705
Phone: 7145427994 Fax: 7145429285
Website: www.weightforlife.com

Profile: Weight For Life is a 12 year old company specializing in obesity surgery patient services to hospitals and surgeons. Services include in-house call center, insurance and marketing departments to help increase surgical volume, program awareness and profitability.

WORLD OF MEDICINE 320

Address: 4531 36th St.
Orlando, FL 32811
Phone: 407-438-8810 Fax: 407-859-2425
Website: www.world-of-medicine.com

Profile: World of Medicine® develops, manufactures and markets unique products for minimally invasive surgery. The W.O.M. AFREDDY@ laser U100 represents a new class. It rapidly fragments calculi by shock waves; only on the target, not soft tissue.

XITACT 223

Address: 45, Rue de Lausanee
1110 Morges
Switzerland
Phone: 412181132-40 Fax: 412181132-50
Website: www.xitact.com

Profile: Xitact was founded in April 2000 with the objective of becoming the market leader in medical simulation. Xitact's first product, the XITACTLS 500 laparascopy simulator is a modular trainer platform that provides a sophisticated multi disciplinary training environment for the education of surgical residents.


IPEG