BAPES

British Association of Paediatric Endoscopic Surgeons

LEEDS 2019.

The 19th Annual Meeting of the British Association of Paediatric Endoscopic Surgeons

Introduction.

SIMON CLARKE, BAPES PRESIDENT

A great big Northern welcome awaits you at the **19th Annual Conference for the British Association of Paediatric Endoscopic Surgeons**. On behalf of the Executive I would like to thank you all for making your way to join us in Leeds on November 6th, 7th and 8th.

BAPES was founded in 1999. I was privileged to help with the first meeting at the Royal college of Surgeons in London. I remember it well as my slides melted in an overheated carousel. Nearly two decades later, technology has slightly moved on and we continue to grow. As you will see from this years accepted abstracts we not only attract delegates from all over the UK but also the world.

Our mission has always been to provide a network for surgeons who are not only at the forefront of innovation and technology, but who also love to share ideas and learn from each other. The BAPES 'family' continues to multiply and we have one of our largest memberships to date. The annual 3mm two-day Scholarship course, which is available to all BAPES members, is now in its 5th year and is always oversubscribed. I would personally like to thank **KARLSTORZ –UK** not only for their continued support with this, but also with the meeting here in Leeds.

We have recently announced a formal affiliation with the new **Journal of Paediatric Endoscopic Surgery.** A journal that for the first time allows BAPES members free access. Our 19th Meeting will for the first time, have a dedicated journal for selected publications as well as a supplement to publish all abstracts. I would like to thank **Amulya Saxena and Springer** for their hard work in making this happen.

We also have a new website for which Webmaster and Exec member **Alex Macdonald** gets all the credit. The member area has videos uploaded by members for teaching and a new section where a mentor can be established for new consultants.
I would like to thank our Treasurer **Anju Goyal** for all her efforts in keeping us in the black (!) as well as local organisers **Naved Alizai**, **Helen Carter** and **Rebecca Lisseter** for bringing us to their great city.

Finally, I would like to give a massive thank you to demitting Executive members **Ashish Desai, Niyi Ade-Ajayi** as well as Honorary Secretary, **Abraham Cherian**. You are all stars. A big welcome of course to new exec members **Paul Charlesworth**, **Adil Aslam** and **Pankaj Misra** (Hon Sec).

Last but not least, I would like to thank all BAPES members for your continued support and enthusiasm. See you in Leeds!

Simon Clarke
President of the British Association of Paediatric Endoscopic Surgeons

Speakers.

Bruce Jaffray

Bruce Jaffray is a paediatric surgeon in Newcastle upon Tyne. He has a special interest in surgery for inflammatory bowel disease in children, and ileal pouch surgery in particular. He has published on the subjects of laparoscopic pouch surgery, complications of pouch surgery, survival after anti-reflux surgery and other areas of paediatric surgery. He was twice on the national executive of the British Association of Paediatric Surgeons as representative for the North of England. As the invited lecturer to deliver the Azad Najmaldin lecture in Leeds in 2019, his subject will be on his experience of laparoscopic pouch surgery.

Rebecca Randell

Rebecca is an Associate Professor in Applied Health Research in the School of Healthcare, University of Leeds. She has a background in computing, having a first degree in Software Engineering and a PhD in Human-Computer Interaction. However, her research is very much focused on the social, understanding how healthcare professionals carry out their work in order to inform the design of healthcare technologies to support that work and understanding how healthcare technologies are used in practice. She has been awarded the Diana E. Forsythe Award by the American Medical Informatics Association for research at the intersection of informatics and the social sciences. She recently led an NIHR Health Services & Delivery Research (HS&DR) funded realist evaluation of the impact of robotic surgery on teamwork in the operating theatre and was co-investigator on an NIHR HS&DR funded study looking at the introduction of quality dashboards in the NHS. Currently she is leading an NIHR HS&DR funded project to develop and evaluate QualDash, a quality dashboard that supports clinical teams, quality and safety committees, and NHS Trust boards to better understand and make use of National Clinical Audit data, and she is also co-investigator on an NIHR HS&DR funded realist review of the impact of networked IT on patient safety.

Peter Gardner

Peter Gardner is an applied psychologist interested in human factors and human interaction with organisational systems and technology, particularly in health settings. He has a first degree in Psychology, a MSc in Computer Studies, and a PhD in Cognitive Science. He worked at the Department of Experimental Psychology, University of Oxford before taking up a post at the MRC Social and Applied Psychology Unit in Sheffield (now the Institute of Work Psychology). He has worked at the University of Leeds since 1995 and is currently the Head of the School of Psychology. Peter has worked in field settings with organizations such as the Royal Mail, British Nuclear Fuels, and the NHS. He is joint lead of the NIHR funded Programme Grant for Applied Research entitled "Improving the Safety and Continuity of Medicines Management at Transitions of Care (ISCOMAT)". He was also a co-investigator on the NIHR HS&DR funded realist evaluation of the impact of robotic surgery on teamwork in the operating theatre, which was led by Rebecca Randell.

Overview

Wednesday November 6th

BAPES TRAINING DAY

- Basic skills
- Thoracoscopic CDH
- Laparoscopic Pyeloplasty
- Laparoscopic Appendicetomy
- Da Vinci robot simulator

Thursday November 7th

ANNUAL MEETING DAY 1

- Hot topics in MIS
- Azad Najmaldin Lecture
- Education Session
- How I do it: CDH
- BAPES Annual General Meeting
- Congress Dinner & Entertainment (included in registration fee)

Friday November 8th

ANNUAL MEETING DAY 2

- Digital Poster Presentations
- Robotic surgery and human factors
- How I do it: Long gap Oesophageal Atresia, Thymectomy, Nuss
- Robotic vs. Open/Laparoscopic debate (Pyeloplasty & Choledochal cyst)
- University Hospital Challenge Quiz

Thursday November 7th

Annual Meeting Day 1.

CROWNE PLAZA LEEDS

09:00-09:30 REGISTRATION

09.30-09:45 WELCOME ADDRESS
President's Welcome: Simon Clarke
Introduction to Leeds 2019: Local organisers (Naved Alizai & Helen Carter)

09:45-11:30 SESSION 1: FREE PAPERS (5+2 mins)
Chairs: Mark Powis (Leeds) & Mike Singh (Birmingham)

1.1 LONG-TERM OUTCOMES OF LAPAROSCOPY ASSISTED ENDORECTAL PULL-THROUGH FOR HIRSCHSPRUNG'S IN A SINGLE HOSPITAL
Evelyn Ervine, Alistair Dick, Isaac Philip. Royal Belfast Hospital for Sick Children

1.2 LAPAROSCOPIC VERSUS OPEN ADHESIOLYSIS FOR ADHESIONAL BOWEL OBSTRUCTION IN CHILDREN: LARGEST UK SINGLE-CENTRE SERIES
Sonia Basson, Verity Haffenden, Simon Blackburn, Stefano Guiliani, Joseph Curry, Paolo de Coppi, Kate Cross. Great Ormond Street Hospital for Children, London

1.3 LONG-TERM OUTCOMES OF PNEUMATIC BALLOON DILATATION AND LAPAROSCOPIC HELLER'S MYOTOMY FOR OESOPHAGEAL ACHALASIA IN CHILDREN: A 20-YEAR SINGLE-CENTRE EXPERIENCE
Florian Friedmacher, Komilia Nikaki, David Rawat, frances Hughes, Devesh Misra, Paul Charlesworth. Department of Paediatric Surgery, The Royal London Hospital

1.4 A TECHNIQUE FOR MINIMAL ACCESS REMOVAL OF PEUTZ-JEGHERS POLYPS
Alexandra Scarlett, Andrew ross Jackie Hawkins, Warren Hyer, Muhammad Choudhry. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

1.5 LAPAROSCOPIC INGUINAL HERNIOTOMY IS SAFE AND OFFERS DIAGNOSTIC ACCURACY
Hazem Mosa, Oliver Jackson, Prabhu Sekeran, Eniola Folaranmi. Department of Paediatric Surgery, Cardiff and Vale University Health Board

1.6 PEGJ OR GJ? A QUALITY IMPROVEMENT PROJECT TO IMPROVE COMPLICATION RATE.
Yew-Wei Tan, Kyla Ng, Anne Chua, Kirsteen McDonald, Rachel Radley, Simon Phelps, Stewart Cleeve, Paul Charlesworth. Department of Paediatric Surgery, Royal London Hospital

1.7 LAPAROSCOPIC GASTRO-DUODENOSTOMY (JABOULAY PYLOROPLASTY) FOR THE TREATMENT OF DUODENAL STRICTURE IN PAEDIATRIC CROHN'S DISEASE.
Lynne McIntosh, Ewan Brownlee, Philip Hammond. Royal Hospital for Sick Children, Edinburgh

1.8 A ROADMAP FOR THE ESTABLISHMENT OF LAPAROSCOPIC PYLOROMYOTOMY
Rheanan Buckle, Atul Sabharwal, James Andrews. Royal Hospital for Children, Glasgow

1.9 ROBOTIC ASSISTED CHOLEDOCHAL CYST EXCISION IN 4.9KG INFANT
Rebecca Lisseter, Naved Alizai. Leeds Teaching Hospitals

1.10 ROBOTIC-ASSISTED LIVER CYST EXCISION - INITIAL EXPERIENCE
Preethi Bhishma, **Sarah Vecchione**, Michael Darwant, Naved Alizai. Leeds Teaching Hospitals

1.11 THORACOSCOPIC RESECTION OF BENIGN MEDIASTINAL MASSES: OUR EXPERIENCE
Maria Luisa Conighi, Cosimo Bleve, Elisa Zolpi, Lorenzo Costa, **Salvatore Fabio Chiarenza**.
Department of Pediatric Surgery and Pediatric Minimally Invasive Surgery and New Technologies, San Bortolo Hospital, Vicenza, Italy

1.12 STAGED LAPAROSCOPIC TRACTION ORCHIDOPEXY FOR IMPALPABLE TESTES: A PRELIMINARY STUDY
Charlotte Melling, David Wilkinson, David Keene. Royal Manchester Children's Hospital

1.13 LONE RANGER IN THE EAST. A JOURNEY TO REINTRODUCE LAPAROSCOPIC FUNDOPLICATION
Bethan Johnson, Komilia Nikaki, Paul Charlesworth. Department of Paediatric Surgery, The Royal London Hospital

11:30-12:30 SESSION 2: HOT TOPICS IN MIS
Moderators: Atul Sabharwal (Glasgow) & Alex Lee (Oxford)

1. ***What's new in instrument and port technology?*** *KarlStorz UK*
2. ***Does 3D laparoscopic surgery really make a difference****? Olympus/ Karl Storz-UK*
3. ***Does warmed and Humified CO2 improve patient outcome?*** *Humigard UK*
4. ***FlexDex: Can it replace the robot?*** *FlexDex Surgical EU*

12:30-13:30 LUNCH AND INDUSTRY VISITS

13:30-14:00 SESSION 3: THE AZAD NAJMALDIN LECTURE

Laparoscopic Pouch Surgery: My experience and literature review

Introduction by: Naved Alizai
Delivered by: Bruce Jaffray (RVI Hospital, Newcastle)

14:00-15:00 SESSION 4: EDUCATION SESSION
Chairs: Brian Davies (Nottingham) & Alex Cho (London)

1. MIS trainers: an evidence-based approach (Kate Bradshaw & Alex Scarlett)
2. Current state of MIS training: the end of training viewpoint (Liam McCarthy, Alex Macdonald & Kate Bradshaw)
3. Education Free Papers (5+1 mins)

4.1 VIRTUAL REALITY SOFTWARE DEVELOPMENT: LAPAROSCOPIC INGUINAL HERNIA REPAIR
Simon Clarke. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

4.2 MODEL DEVELOPMENT FOR THORACOSCOPIC CONGENITAL DIAPHRAGMATIC HERNIA REPAIR
Helen Carter. Leeds Teaching Hospitals

4.3 THE ROLE OF LOW FIDELITY SIMULATION IN PAEDIATRIC ENDOSCOPIC TRAINING
David Thompson, Abraham Cherian. Department of Paediatric Urology, Great Ormond Street Hospital, London

4.4 BUILD YOUR OWN – LAPAROSCOPIC URETERIC REIMPLANTATION MODEL. HERES ONE I MADE EARLIER
David Thompson, Abraham Cherian. Department of Paediatric Urology, Great Ormond Street Hospital, London

4.5 STEEP LEARNING CURVE FOR ROBOTIC SURGERY
Rebecca Lisseter, Michael Darwant, Naved Alizai. Leeds Teaching Hospitals

15:00-15:20 TEA BREAK AND INDUSTRY VISITS

15.20–16:00 SESSION 5: CONGENITAL DIAPHRAGMATIC HERNIA

1. How I do it: CDH (Mike Singh, Birmingham Children's Hospital)
2. CDH UK: CDH Passport Project
3. CDH Free Papers

5.1 MINIMALLY INVASIVE SURGERY FOR CONGENITAL DIAPHRAGMATIC HERNIA: A SINGLE INSTITUTION'S 10-YEAR EXPERIENCE (4+1 mins)
Hemanshoo Thakkar, Abigail Morbi, Martin Sidler, Dhanya Mullassery, Stefano Giuliani, Simon Blackburn, Kate Cross, Joe Curry, Paolo De Coppi. Great Ormond Street Hospital

P5.2 THOU SHALL NOT APPROACH THIS DIAPHRAGM THORACOSCOPICALLY (2+1 mins)
Elmarie van der Merwe, Michael Singh. Birmingham Children's Hospital

Thursday November 7th

16:00-17:15 SESSION 6: FREE PAPERS & VIDEOS UGI & MISC.) (5+2 mins)
Chairs: Nordeen Bouhadiba (London) & Anna-May Long (Cambridge)

6.1 A 17-YEAR SINGLE-CENTRE EXPERIENCE OF THE MANAGEMENT OF CHOLEDOCHOLITHIASIS IN CHILDREN PRIOR TO LAPAROSCOPIC CHOLECYSTECTOMY
Alex Macdonald, Niyi Ade-Ajayi, Erica Makin, Ashish Desai, Shailesh Patel, Mark Davenport. Department of Paediatric Surgery, Kings College Hospital, London

6.2 THORACOSCOPIC DEBRIDEMENT FOR EMPYEMA THORACIS: RE-AUDITED
Bhavini Pisavadia, Robert Peters, Dakshesh Parikh, Michael Singh. Department of Paediatric Surgery, Birmingham Children's Hospital

6.3 PROSPECTIVE COMPARISON OF OUTCOMES FOR PERCUTANEOUS ENDOSCOPIC GASTROSTOMY BUTTON VS. PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE.
Carmen Sofia Chacon, Andrew Ross, Nelly Adjei, Hayley Whatmore, Amulya Saxena, Simon Clarke. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

6.4 THORACOSCOPIC OA/TOF REPAIR: A SINGLE INSTITUTION'S 10-YEAR EXPERIENCE
Hemanshoo Thakkar, Abigail Morbi, Martin Sidler, Dhanya Mullassery, Stefano Giuliani, Simon Blackburn, Kate Cross, Joe Curry, Paolo De Coppi. Great Ormond Street Hospital

6.5 ONE SIZE FITS ALL? IMPACT OF HAND SIZE ON EASE OF USE OF MINIMALLY INVASIVE SURGICAL INSTRUMENTS.
Louise Morris, Hannah Rhodes, Kate Burns, Rebecca Roberts, Sophie Green, Alexandra Lang, David Morris. Department of Paediatric Surgery, Nottingham University Hospitals NHS Trust

6.6 THORACOSCOPIC INTERNAL TRACTION FOR LONG GAP OESOPHAGEAL ATRESIA IN SCOTLAND
Paul Cullis, Lynne McIntosh, James Andrews, Phil Hammond, Fraser Munro. Department of Paediatric Surgery, Royal Hospital for Children, Glasgow

6.7 SINGLE LUNG VENTILATION FOR CONGENITAL PULMONARY AIRWAY MALFORMATION
Vanessa Albert, Niyi Ade-Ajayai, Alexander Macdonald, Shailesh Patel. Department of Paediatric Surgery, King's College Hospital, London

6.8 EUROPEAN MULTICENTRE SURVEY ON APPROACHES IN PAEDIATRIC LAPAROSCOPIC APPENDECTOMY
Tariq Mehmood, Simon Clarke, Amulya Saxena. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

6.9 MINIMAL INVASIVE SURGERY IN DUODENAL ATRESIA IN CHILDREN
Ahmed Arafa. Cairo University, Egypt

6.10 COMPARATIVE ANALYSIS AND ISSUES IN LAPAROSCOPIC INGUINAL HERNIA REPAIR (LIHR) FOR INFANTS <1YEAR
Caoimhe Walsh, Jessica Ng, Amulya Saxena. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

17:15-18:45 THE BAPES ANNUAL GENERAL MEETING

19.30 CONGRESS DINNER (& ENTERAINMENT), CROWNE PLAZA HOTEL
(included in registration fee)

Annual Meeting Day 2.

CROWNE PLAZA LEEDS

08:30-09:30 SESSION 7 DIGITAL POSTER PODIUM PRESENTATIONS (2+1 mins)
Moderators: Helen Carter (Leeds) & James Andrews (Glasgow)

P1 LAPAROSCOPIC APPROACH TO INTESTINAL MALROTATION IN CHILDREN: SYSTEMATIC REVIEW.
Carmen Sofia Chacon, Amulya Saxena. Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, London

P2 CONGENITAL DIAPHRAGMATIC HERNIA WITH INTRATHORACIC RENAL ECTOPIA THORACOSCOPIC APPROACH FOR A COMPLETE ANATOMICAL REPAIR
Colin Mizzi, David Farrugia, Muhammed Choudhry. Mater Dei Hospital, Malta

P3 USE OF A FLEXIBLE GUIDEWIRE IN STENTING TORTUOUS URETERS IN CHILDREN
Riyad Peeraully, Manoj Shenoy. Department of Paediatric Urology, Nottingham Children's Hospital

P4 ROBOTIC ASSISTED SPLENECTOMY
Rebecca Lisseter, Naved Alizai. Leeds Teaching Hospitals

P5 OPTIMIZING PATIENT POSITIONING AND TABLE SIZE IN ROBOTIC SURGERY
Alison Wallace, Naved Alizai. Leeds Teaching Hospitals

P6 DIAGNOSTIC CYST-ENDOSCOPY IN MANAGEMENT OF COMPLEX PELVIS CYST
Bartlomiej Olczak, Caroline Pardy, Michal Ajzensztein, Tony Hulse, Anu Paul, Pankaj Mishra, Brianna Cloke. Department of Paediatric Urology. Evelina London Children's Hospital

P7 OMENTAL FLAP REPAIR FOR OESOPHAGEAL PERFORATION DURING LAPAROSCOPIC CARDIOMYOTOMY FOR PAEDIATRIC ACHALASIA CARDIA.
Avinash Jadhav, Kirtikumar Rathod, Biangchwadka Suchiang, Arvind Sinha. All India Institute of Medical Sciences, Jodhpur, India

P8 URETHRAL POLYP IN A NEONATE - AS SEVERE AS POSTERIOR URETHRAL VALVES?
Sara Lobo, May Bisharat, Imran Mushtaq. Department of Paediatric Urology, Great Ormond Street Hospital, London

P9 SHOULD PAEDIATRIC SURGEONS USE SHARP OR BLUNT TROCARS FOR SECONDARY PORT INSERTION?
Omar Nasher, Naved Alizai. Leeds Teaching Hospitals

P10 AN UNUSUAL PRESENTATION OF DYSPHAGIA AND HORNER'S SYNDROME SECONDARY TO BUTTON BATTERY INGESTION
Bhavini Pisavadia, Elizabeth Gavens, Michael Singh. Birmingham Children's Hospital

P11 OUTCOMES IN PEDIATRIC LAPAROSCOPIC HIATUS HERNIA MANAGEMENT: SYSTEMATIC REVIEW
Karina Miura da Costa, Amulya Saxena. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, London

P12 DIAGNOSTIC LAPAROSCOPY IN NON- PALPABLE UNDESCENDED TESTIS - OUR EXPERIENCE
Monika Bawa, Shubha Nayak, Ram Samujh. Postgraduate Institute of Medical Education and Research, Chandigarh, India

P13 TWO COMPLICATED THYMECTOMIES
Elmarie van der Merwe, Michael Singh. Birmingham Children's Hospital

P15 OUTCOMES OF LAPAROSCOPIC CONGENITAL INGUINAL HERNIA REPAIR IN CHILDREN: RESULTS FROM A NATIONAL TRAINING WORKSHOP
Mostafa Gad, Mahmoud Elfikky, Khaled Abdullateef, Mahmoud Marei, Sherief Kaddah, Mohamed Elbarbary. Department of Pediatric Surgery, Cairo University Specialized Pediatric Hospital. Faculty of Medicine, Cairo University, Egypt

P16 PRE-OPERATIVE PORT SITE MARKING
Alison Wallace, Naved Alizai. Leeds Teaching Hospitals

09:30-10.15 HUMAN FACTORS AND ROBOTIC SURGERY
Introduction: Simon Clarke

Professor Rebecca Randell & Dr Peter Gardner
University of Leeds

10:15-10:45 TEA BREAK AND INDUSTRY VISITS

10:45-11:45 SESSION 8: HOW I DO IT
Chairs: Alistair Dick (Belfast) & Niyi Ade-Ajayi (London)

- Thoracoscopic approach to long gap Oesophageal atresia (Darius Patkowski)
- Thoracoscopic Thymectomy (Emma Sidebotham)
- Thoracoscopic NUSS (Amulya saxena)

11:45-12:45 SESSION 9: VIDEO CASE REPORTS (5+1 min)
Chair: Adil Aslam (Cambridge)

V1 THORACOSCOPIC EXCISION OF AN OESOPHAGEAL DUPLICATION CYST
Jonathan Ducey, Michael Singh, Robert Peters. Royal Manchester Children's Hospital

V2 RENDEZ-VOUS CYSTOSCOPY/LAPAROSCOPY FOR PROSTATIC UTRICLE EXCISION
Hazem Mosa, Pankaj Mishra. Department of Paediatric Urology, Evelina London Children's Hospital

V3 LAPAROSCOPIC OESOPHAGO-GASTRIC DISSOCIATION
Mahmoud Motawea, Anjli Khakhar, Giampiero Soccorso. Birmingham Children's Hospital

V4 A DIFFICULT LAPAROSCOPIC PYLOROMYOTOMY.
Elizabeth Gavens, Michael Singh. Birmingham Children's Hospital

V5 PER-MITROFANOFF CYSTOLITHOTOMY WITH THE SUPER-MINI (SMP) SYSTEM
Alexander Cho, May Bisharat, Naima Smeulders. Department of Paediatric Urology, Grate Ormond Street Hospital, London

V6 IMPALPABLE UNDESCENDED TESTIS: CAN WE AVOID THE OPEN INGUINAL EXPLORATION ALTOGETHER?
Manish Pathak, Biangchwadaka Suchiang, Rahul Saxena, Arvind Sinha, Avinash Jadhav, Kirtikumar Rathod. All India Institute of Medical Scieces, Jodhpur, India

V7 HEPATIC HYDATID HOOVER
Rania Kronfli, Mark Davenport, Department of Paediatric Surgery, King's College Hospital, London

V8 LAPAROSCOPIC DUODENOJEJUNOSTOMY & GASTRIC FUNDUS PERFORATION REPAIR FOR SUPERIOR MESENTERIC ARTERY SYNDROME.
Avinash Jadhav, Kirtikumar Rathod, Biangchwadaka Suchiang, Jayakumar TK, Pawan Garg, Arvind Sinha. All India Institute of Medical Scieces, Jodhpur, India

V9 ROBOTIC DUODENAL POLYP EXCISION
Sophia Chacon, Simon Clarke. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

12:45-13:30 LUNCH AND INDUSTRY VISITS

13:30-14:45 SESSION 10: FREE PAPERS UROLOGY & MISC. (3+2 mins)
Chairs: Rainer Kubiak (Basel) & Anju Goyal (Manchester)

10.1 SAFETY AND EFFICACY OF PERCUTANEOUS NEPHROLITHOTOMY IN CHILDREN UNDER 3 YEARS OF AGE: A 10 YEAR SINGLE CENTRE OUTCOMES STUDY
May Bisharat, Alex Barnacle, Alex Cho, Naima Smeulders. Department of Paediatric Urology, Great Ormond Street Hospital, London

10.2 THE ROLE OF LAPAROSCOPY IN ISOLATED FALLOPIAN TUBE TORSION(IFTT) IN FEMALE ADOLESCENTS
Cosimo Bleve, Lorella Fasoli, Lorenzo Costa, Maria Luisa Conighi, Valeria Bucci, Salvatore Fabio Chiarenza. Department of Pediatric Surgery and Pediatric Minimally Invasive Surgery and New Technologies, San Bortolo Hospital, Vicenza, Italy

10.3 IS IT WORTH TO SWITCH FROM RETROPERITONEAL TO TRANSPERITONEAL APPROACH WITH LAPAROSCOPIC PYELOPLASTY?
Tamas Cserni, Anju Goiyal, Supul Hennayake. Royal Manchester Children's Hospital

10.4 MANAGEMENT OF PUJO IN CHILDREN: A PROSPECTIVE COMPARATIVE STUDY BETWEEN OPEN AND ROBOTIC ASSISTED APPROACH IN A TWO-YEAR PERIOD
Kaiwan Wang, Ahmad Abul, Syed Salahuddin, Junaid Ashraf, Alex Turner, Ramnath Subramaniam. Leeds Teaching Hospitals

10.5 ROBOTIC VS OPEN PYELOPLASTY IN CHILDHOOD: IS HOSPITAL STAY REALLY REDUCED AND LESS ANALGESIA REQUIRED?
Iulia Stratulat-Chiriac, Marie Klaire Farrugia, Diane De Caluwe, Nisha Rahman. Department of Paediatric Urology, Chelsea Children's Hospital, Chelsea and Westminster NHS Fdn Trust Imperial College London, UK

10.6 ENDOSCOPIC MANAGEMENT OF SYRINGOCOELE IN CHILDREN
Neetu Kumar, Abraham Cherian. Great Ormond Street Hospital, London

10.7 SYMPTOMATIC URETERIC STUMP - A SAFE ALTERNATE STRATEGY TO EXCISION
Neetu Kumar, Martin, Skott, Abraham Cherian. Great Ormond Street Hospital, London

10.8 DOES HYPERTENSION RESOLVE AFTER NEPHRECTOMY IN CHILDREN WITH DYSPLASTIC/ POOR FUNCTIONING KIDNEYS
Roma Subhash Varik, Pankaj Mishra, Arash Taghizadeh, Massimo Garriboli, Anu Paul. Department of Paediatric Urology, Evelina London Children's Hospital

10.9 DUAL ENDOSCOPIC APPROACH TO PAEDIATRIC BLADDER LESIONS
Rheanan Buckle, Caroline MacDonald, Martyn Flett, Boma Lee. Royal Hospital for Children, Glasgow

10.10 PRELIMINARY EXPERIENCE WITH JJ STENT SELF-REMOVAL AFTER LAPAROSCOPIC PYELOPLASTY
Tamas Cserni, Mahmoud Marei, Anju Goyal, Supul Hennayake. Royal Manchester Children's Hospital

10.11 HOW GOOD IS THE EVIDENCE FOR PAEDIATRIC ROBOTIC SURGERY?
Joshua Cave, Simon Clarke. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

10.12 BRONCHOSCOPIC RETRIEVAL OF PAEDIATRIC TRACHEOBRONCHIAL FOREIGN BODY: A CHALLENGE
Monika Bawa, Shubha Nayak, Ram Samujh. Postgraduate Institute of Medical Education and Research, Chandigarh, India

10.13 LAPAROCOPIC LAPAROSCOPIC -ASSISTED TRANSANAL RECTAL PULL-THROUGH FOR HIRSCHSPRUNG'S CHILDREN OLDER THAN 3 YEARS
Ahmed Arafa. Cairo university, Egypt

Friday November 8th

14:45-15:30 SESSION 11: DEBATES
Moderators: Paul Charlesworth (London) & Pankaj Mishra (London)

- **PYELOPLASTY**
  Laparoscopic (A. Cherian, Great Ormond Street Hospital)
  Robotic (A. Najmaldin, Leeds Teaching Hospitals & Diane De Caluwe, Chelsea Children's Hospital)
- **CHOLEDOCHAL**
  Open (K. Sharif, Birmingham Children's Hospital)
  Robotic (N. Alizai, Leeds Teaching Hospitals)

15:30-15:45 TEA BREAK AND INDUSTRY VISITS

15:45-16:15 SESSION 12: FREE PAPERS (3+2 mins)
Chairs: Joe Curry (London) & Alex Macdonald (London)

12.1 LAPAROSCOPIC APPROACH TO TRICHOBEZOARS IN THE PEDIATRIC AGE GROUP
Maja Raicevic, Simon Clarke, Amulya Saxena, Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trus, Imperial College London

12.2 LAPAROSCOPIC-ASSISTED MANAGEMENT OF PAEDIATRIC INTRA-ABDOMINAL LYMPHATIC MALFORMATIONS - A COMBINED MULTIDISCIPLINARY APPROACH
Hemanshoo Thakkar, Premal Patel, Joe Curry. Great Ormond Street Hospital, London

12.3 LAPAROSCOPIC RETRIEVAL OF INGESTED FOREIGN OBJECTS WITHIN THE PAEDIATRIC POPULATION: A CASE SERIES AND LITERATURE REVIEW
Aiysha Puri. Department of Paediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, Imperial College London

12.4 STEWARDSHIP OF THE USE OF ANTIBIOTICS IN LAPAROSCOPIC APPENDICECTOMY.
Debasish B.Banerjee, Sengamalai Manoharan, Alex Scarlett, Thomas Tsang. Jenny Lind Children's Hospital, Norfolk and Norwich University Hospitals NHS Foundation Trusts, Norwich

12.5 INITIAL EXPERIENCE OF FLEXDEX ARTICULATING NEEDLE HOLDER: THE FIRST UK PAEDIATRIC CASE
Omar Nasher, Naved Alizai. Leeds Teaching Hospitals

12.6 MINIMAL ACCESS ON THE CHEAP
Ahmed Barakat, Naved Alizai. Leeds Teaching Hospitals

16:15-17:15 SESSION 13: BAPES UNIVERSITY HOSPITAL CHALLENGE 2019
Chairs/quiz maestros: Sean Marven & Shabnam Parker

Submit a team to represent your hospital for the chance of winning the BAPES University Hospital Challenge Cup.

17:15-17:20 CLOSING REMARKS & BEST PRESENTATION AWARD

BAPES
British Association of Paediatric Endoscopic Surgeons

LEEDS 2019.

Abstract Book

The 19th Annual Meeting of the British Association of Paediatric Endoscopic Surgeons

1.1 LONG-TERM OUTCOMES OF LAPAROSCOPY ASSISTED ENDORECTAL PULL-THROUGH FOR HIRSCHSPRUNG'S IN A SINGLE HOSPITAL

Evelyn Ervine, Alistair Dick, Isaac Philip.
Royal Belfast Hospital for Sick Children

Aims: We reviewed our institutions' outcomes over the last 12 years with 2 primary operators. We looked at mortality, incontinence, constipation, enterocolitis and stoma formation following Laparoscopy assisted Endo rectal Pull-through (LAEPT).

Methods: From our hospital database, we identified all children that had undergone LAEPT for Hirschsprung's from 2007-2018. The records were reviewed & continence recorded using Krickenbach score recorded from last available review. Complications were noted from surgery and during follow-up.

Results: 22 patients were identified aged between 1 - 12 years, 15 male, 21 had short segment disease. The average follow-up was 84 months, (range 6-140). 1 LAEPT was converted to open and 1 child underwent emergency colostomy 3 days post pull-though. 1 child had prolapse of the pull-through segment requiring laparoscopic rectopexy. 1 child died at 2 years old due to unrelated causes. 5 children were excluded from this study (1 death, 2 <3years old, 1 conversion to open, 1 colostomy) Of the 17 children, 13 children are completely continent however 7 require either oral or rectal medication. The 4 remaining all have constipation and/or soiling despite oral and rectal therapy, 1 of these has Waardenberg syndrome and complex behavioural needs. Interestingly 2 children had undergone an open Ladd's procedure in the neonatal period that did not impede later LAEPT.

Conclusions: Two thirds of the children in our review have a good outcome and are continent although some require medication. We stress the importance of supervised bowel management to achieve continence. Our per-operative complication rate was low.

LAPAROSCOPIC VERSUS OPEN ADHESIOLYSIS FOR ADHESIONAL BOWEL OBSTRUCTION IN CHILDREN: LARGEST UK SINGLE-CENTRE SERIES

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Aims: Adhesional bowel obstruction (ABO) causes significant morbidity. Laparoscopic adhesiolysis is increasingly being utilised but outcome data is limited. We aim to report our experience of laparoscopic versus open management of ABO in the largest UK single-centre series.

Methods: A retrospective case note review was performed of all children ≤18years undergoing surgery for ABO between August 2013-2018 at our specialised neonatal and paediatric surgical centre. Institutional audit approval was gained. Data collected included patient demographics, operative details and outcomes. Data was analysed on an intention-to-treat basis and statistical methods included Chi-squared, Fisher's Exact and Mann-Whitney U test.

Results: 31 patients (male=20, median age=2months) underwent open adhesiolysis and 32 patients (male=21, median age=9months) underwent laparoscopic adhesiolysis with a median follow-up of 18months and 6months, respectively. Conversion rate from laparoscopic to open was 47%. Median operative time and length of post-operative stay was significantly longer in the open group compared to the laparoscopic group (120 minutes vs 100 minutes, $p<0.05$) and (14 days vs 7 days, $p<0.05$), respectively. The complication rate was significantly higher in the open group (42% vs 18%, $p<0.05$). Recurrence rate of ABO was approximately 10% in each group.

Conclusions: Laparoscopic adhesiolysis for ABO is associated with a significantly reduced complication rate, shorter operative time and a shorter length of post-operative stay, despite a 47% conversion rate. Laparoscopic adhesiolysis should be considered as the initial surgical management of ABO.

1.3 LONG-TERM OUTCOMES OF PNEUMATIC BALLOON DILATATION AND LAPAROSCOPIC HELLER'S MYOTOMY FOR OESOPHAGEAL ACHALASIA IN CHILDREN: A 20-YEAR SINGLE-CENTRE EXPERIENCE

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Aims: To assess effectiveness and long-term outcomes of oesophageal achalasia treatment in children over a 20-year period.
Methods: Longitudinal single-centre study of all children treated for oesophageal achalasia from 1999-2019. Data on patient demographics, presenting symptoms, treatment modalities, complications and outcomes were analysed.

Results: Forty children [male;n=25(62.5%)] were identified [median age at diagnosis: 12 years (range,1-14)]. Common presenting symptoms were emesis [n=30(75.0%)], dysphagia [n=28(70.0%)] and weight loss [n=20(50.0%)]. Median time from symptom onset to diagnosis was 8 months (range,2-24). Initial treatment was oesophageal balloon dilatation (OBD) in 29 (72.5%) cases and laparoscopic Heller's myotomy (LHM) in 11 (27.5%). After median follow-up of 4 years (range,0.3-10), 24 (60.0%) patients were symptom-free. The number of asymptomatic children was higher among those treated initially with LHM compared to OBD [9/11(81.8%) vs. 0/29(0%);P<0.0001]. All children who initially underwent OBD, required later repeat-OBDs [n=15(51.7%)] or LHM [n=14(48.3%)] due to persistent symptoms. Patients that had repeat-OBDs alone were less likely to achieve long-term relief compared to those treated subsequently with LHM [4/15(26.7%) vs. 11/14(78.6%);P=0.0092]. Of the total 25 LHM cases, one (4.0%) was converted, two (8.0%) with previous OBD suffered intraoperative mucosal perforations and five (20.0%) required postoperatively further interventions for recurrent dysphagia: 5 OBDs, 3 redo-Heller's and 1 oesophagectomy+gastric transposition. Overall, children who underwent LHM had fewer total procedures compared to OBD cases [median: 3(range,1-5) vs. 6(range,2-10);P=0.01].

Conclusions: The majority of children treated for oesophageal achalasia attained symptom resolution, with higher initial success rates in the LHM cohort. Long-term surveillance into adulthood is necessary due to potential symptom persistence/recurrence.

1.4 A TECHNIQUE FOR MINIMAL ACCESS REMOVAL OF PEUTZ-JEGHERS POLYPS

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Aim of the Study: Peutz-Jeghers (PJ) polyps present a risk of intussusception in the small bowel (SB) and gastrointestinal bleeding from the large. Untreated these polyps represent a 70% chance of requiring an emergency laparotomy before 16years of age. Often SB polyps can be excised using double balloon enteroscopy (DBE), but this is limited by patient size. Broad-based colonic polyps (base >2cm) cannot be removed endoscopically due to perforation risk.

We present minimally invasive techniques for polyp resection in paediatric patients not amenable to other methods from small and large bowel (LB).

Method: We use a laparoscopic-assisted method, with single-port (Mini-Gelport) access. The SB is walked until the characteristic dimple demonstrates the polyp base; resection and primary anastomosis are performed via the single umbilical incision. Colonic polyps are endoscopically tattooed allowing laparoscopic identification (after bowel preparation and standard laparoscopic port placement). LB is inspected for the tattoo/dimple, appropriate intracorporeal dissection performed and a colonic wedge resection, minimising mobilisation and adhesion formation. Patients are discharged once feeds have been established and pain controlled, with routine follow-up.

Results: All four patients referred in the last 12months for surgical management of PJ polyps have had successful laparoscopic procedures without significant complications. They remain asymptomatic in follow-up.

Conclusion: We present our technique for laparoscopic resection of this subgroup of PJ patients who are not amenable to other approaches. We recommend this safe and replicable technique to minimise adhesions; especially vital in these patients who will require lifelong surveillance and possibly multiple future procedures.

1.5 LAPAROSCOPIC INGUINAL HERNIOTOMY IS SAFE AND OFFERS DIAGNOSTIC ACCURACY

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Aims: To demonstrate the benefits of laparoscopic inguinal herniotomies in infants.

Methods: 12 months prospective data collection on neonates, infants and children undergoing laparoscopic inguinal herniotomy at a single centre.

Data collected included patient demographics, pre-operative and intra-operative findings, length of surgery, length of stay, rate of recurrence and other post-op complications.

Results: 50 patients underwent laparoscopic inguinal herniotomies, median age 7 months (1-74 months), intra-operative findings differed from the clinical diagnosis in 16 (32%) cases (3 patients had no hernia, 9 cases were bilateral inguinal hernias instead of unilateral, 4 cases had a unilateral hernia instead of bilateral hernias). There were no recurrences in our series, median follow-up 3.5 months (3-6 months). Overall only 3 patients developed complications (6%), 2 patients developed omental port site hernias, and one developed adhesional large bowel obstruction. The median operative time was 35 (10-60) minutes, 70% of patients were discharged on the same day of surgery while 30% were discharged after one night in hospital.

Conclusions: Laparoscopic inguinal herniotomy is safe and feasible, offers diagnostic accuracy, avoids unnecessary additional surgery and has minimal complications.

1.6 PEGJ OR GJ? A QUALITY IMPROVEMENT PROJECT TO IMPROVE COMPLICATION RATE.

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Aims: In response to the increased jejunal tube (JEJ) displacement with Percutaneous endoscopic transgastric jejunostomy (PEGJ, Freka®) following introduction of ENFit connector in Jan2017 [presented in BAPS2018], two interventions were adopted since Jan2018: suture application to PEGJ connector; and conversion, if possible, to a ballooned all-in-one device – Gastrojejunal tube (GJ, MIC-KEY®). We studied whether these interventions successfully reduced complications.

Methods: All children who underwent PEGJ and GJ insertions in Jan2016-Oct2018 were retrospectively reviewed. 3 distinct eras based on year-of-insertion were: 2016 (pre-ENFit), 2017 (ENFit), and 2018 (interventional). Comparisons of JEJ survival between eras and devices were performed using Kaplan-Meier survival curves with log-rank test. Statistical significance was $P<0.05$.

Results: 100 children underwent 323 JEJ insertions – PEGJ (n=237), GJ (n=86); a median of 2JEJ (1-15) per patient. In 2018, GJ utilisation increased to 44% from 16%, as compared to the preceding 2 years [55/125 vs. 31/198 (P=0.005)]. Complications occurred in 188 (42%) in 2.8 years.
Suture application to PEGJ connectors in 2018 resulted in improved JEJ survival against internal displacement, compared to 2017 (P=0.063).
Comparing 3-eras: Overall JEJ survival against all complications were better in the interventional group (2018) compared to 2016/17 (P=0.005), with reduction in JEJ displacement [56% to 17% (P=0.001)].
Comparing GJ vs. PEGJ: GJ is superior to PEGJ in overall JEJ survival against all complications within the first 400 days (P=0.005).

Conclusions: Gastrojejunal tube carries significant complications. GJ has better survival than PEGJ. Suture application to connector is recommended to reduce displacement if PEGJ is used.

1.7 LAPAROSCOPIC GASTRO-DUODENOSTOMY (JABOULAY PYLOROPLASTY) FOR THE TREATMENT OF DUODENAL STRICTURE IN PAEDIATRIC CROHN'S DISEASE.

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Aim: Duodenal stricture is a rare but surgically challenging complication of Crohn's disease. We aim to report the use of laparoscopic gastroduodenostomy (Jaboulay-type) to bypass proximal duodenal strictures secondary to Crohn's disease in two consecutive patients.

Methods: Retrospective casenote review of 2 patients with Crohn's duodenal strictures treated with laparoscopic gastroduodenostomy.

Results: Patient 1 was a 16 year old girl with D1 stricture measuring 3.5cm in length. Patient 2 was a 13 year old boy with D1/2 stricture. Both cases had symptoms of gastric outlet obstruction despite maximal medical therapy. The procedure was performed using umbilical, left and right flank ports. Colon and omentum mobilized to allow duodenal visualisation. Extra-corporal stay suture placed through stricture and traction aided visualisation. Posterior sutures were placed to appose antrum and duodenum; acting as second posterior layer of anastomosis. Two-layer gastro-duodenal anastomosis was performed with intra-corporal suturing. Both patients were discharged when tolerating normal diet and post-operative contrast showed prompt emptying of stomach.

Conclusions: Laparoscopic gastro-duodenostomy bypass of duodenal strictures (Jaboulay-type pyloroplasty) is feasible with short recovery and excellent resolution of symptoms. When significant scarring of the pylorus and duodenum precludes Finney or Heineke-Mikulicz pyloroplasty, this technique reduces the risks inherent with gastro-jejunostomy bypass (dumping, bile reflux, and anastomotic ulcer bleeding). Only one case report could be found relating to Laparoscopic Jaboulay gastroduodenostomy in the adult literature. To the authors knowledge, this is the first description of a laparoscopic gastro-duodenostomy bypass in the paediatric setting, and the first for Crohn's duodenal stricture.

1.8 A ROADMAP FOR THE ESTABLISHMENT OF LAPAROSCOPIC PYLOROMYOTOMY

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Aims: To describe our experience of the introduction of laparoscopic pyloromyotomy across the Royal Hospital for Children, Glasgow.

Methods: A retrospective case notes analysis of all patients undergoing pyloromyotomy from August 2012 to August 2019 was performed. Patients were identified using the operative database and notes reviewed according to a standard dataset.

Results: A total of 304 pyloromyotomies were performed between August 2012 and August 2019, 38% of which were laparoscopic. Of these patients, 92 were male and 22 were female with a median age of 37 days (IQR 21). During the introductory phase, laparoscopic pyloromyotomy was performed by a consultant with senior trainees as first assistant, with a trend towards trainees operating as the primary surgeon during the latter years of the analysis. By 2019, the primary surgeon was grade ≤ST5 in 83% of cases. Laparoscopic pyloromyotomies constitute a greater proportion of pyloromyotomies performed in 2019 when compared with 2012 (50% vs 10%). Since 2012, three cases required intra-operative conversion to open pyloromyotomy (one for duodenal perforation), whilst a further three cases required open intervention at a later date due to incomplete laparoscopic pyloromyotomy. One patient re-presented at a later date for incisional hernia repair. Within the same time period, two patients required a repeat open pyloromyotomy due to an incomplete primary procedure; one patient required incisional hernia repair.

Conclusion: Laparoscopic pyloromyotomy can be introduced in a graduated fashion without compromising clinical care, and allow pyloromyotomy to remain a suitable training opportunity across the curriculum.

1.9 ROBOTIC ASSISTED CHOLEDOCHAL CYST EXCISION IN 4.9KG INFANT

Rebecca Lisseter, Naved Alizai. Leeds Teaching Hospitals

Background:
Minimally invasive surgery to excise choledochal cysts has been described in children since 1995. We moved from laparoscopic to robotic assisted HPB surgery in 2008. This can be challenging in infants but is still feasible. We describe robotic assisted choledochal cyst excision and hepatico-jejunostomy in a 5 month-old 4.92kg baby.

Results:
A term baby girl, birth weight 2.01kg, was referred at 4.5 months with jaundice and pale stools. Further imaging confirmed biliary obstruction with intra and extra-hepatic duct dilatation and low insertion of the cystic duct.

We proceeded with robotic assisted surgery. The child was positioned on a small operating table, with a high mattress to improve access. A 12mm robotic infra-umbilical port and 8mm right and left robotic instrument ports were inserted, with the left one almost in the left iliac fossa. A Nathanson retractor was also placed in the right upper quadrant to retract the liver and improve the view. A 3mm assistant instrument port was placed in the left upper quadrant, as far posteriorly as possible. The choledochal cyst was excised. Roux loop was fashioned extra-corporeally through the umbilical incision and hepatico-jejunostomy performed after re-docking the robot. There was no difficulty during manipulation of the instruments and no instrument clash occurred. She made a good post-operative recovery and remains well 8 months later.

Conclusion:
Robotic assisted choledochal cyst excision is feasible in smaller infants. This is the smallest child in literature who has undergone robotic choledochal cyst excision and hepatico-jejunostomy.

1.10 ROBOTIC-ASSISTED LIVER CYST EXCISION - INITIAL EXPERIENCE

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Leeds Teaching Hospitals

Aim: To review our experience with robotic-assisted surgery for the excision of (non-choledochal) liver cysts.

Methods: A retrospective review was performed of all patients where the intention was to perform a robotic-assisted excision of a liver cyst between 2010 - 2015. There were seven patients with a mean age 4.2 years and mean weight of 16.5kg. All procedures were performed using the da Vinci Surgical System.

Results: Cyst diameter varied between 24-72mm. All of the cysts were located centrally or in the right lobe. Six of the seven had radiological features suspicious for mesenchymal hamartoma and pathology confirmed this diagnosis in three cysts. Of the other four, two were found to be ciliated hepatic foregut cysts and two were simple cysts. Five patients had a successful robotic-assisted excision (71.5%). Two patients required conversion to open surgery. Of these, one child had a cyst with a very thin wall that could not be enucleated using the robotic technique. In the other case, the cyst was completely intra-parenchymal and so the operation was converted to open. During open surgery, a small part of the cyst wall adherent to a main branch of the right portal vein was left behind in order to avoid damage to the vessel. This subsequently led to a recurrence that was later resected. There were no other complications. Median time to full feeds and discharge for cases completed robotically was two days.

Conclusion: Robotic-assisted resection of liver cysts by enucleation is safe and feasible in well-selected liver cysts.

1.11 THORACOSCOPIC RESECTION OF BENIGN MEDIASTINAL MASSES: OUR EXPERIENCE

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Background: Compared to open surgery, thoracoscopy offers proven advantages for resection of mediastinal lesions. Despite this, mediastinum still represent a difficult field for the surgeon because of the major anatomical structures that lies within. We present our recent experience.

Methods: From May 2016, we treated four patients affected by mediastinal masses. Three came to our attention during prenatal period; one referred to our institution at the age of 4 years after the incomplete resection of an esophageal duplication.

Results: The 3 patients with prenatal diagnosis underwent after birth an ultrasound follow up, MRI +/- TC study within the 6th month of life, surgery within 18th month. All presented a right posterior mediastinal localization of the mass, so we performed a right thoracoscopy. Considering the forth patient, MRI showed a residual lesion that extended in the left posterior mediastinum, so we chose a left approach. Complete excision was performed in all patients, even in two of them in which the mass extended to the contralateral side. We had no intra or postoperative complication. Instruments were: 5mm optic and 2/3 3-5mm operative trocars. All patients spent 24h in PICU. Postoperative hospital stay ranged from 3 to 7 days. Diagnosis were: bronchogenic cyst, lymphangioma, two esophageal duplications.

Conclusions: thoracoscopy is a safe and effective technique for complete resection of mediastinal masses in infants and small children, among the well known advantages of this technique we want to highlight the possibility to extend resection to the contralateral side to perform a radical surgery.

1.12 STAGED LAPAROSCOPIC TRACTION ORCHIDOPEXY FOR IMPALPABLE TESTES: A PRELIMINARY STUDY

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Introduction: Laparoscopy is the gold standard to assess for presence of an intra-abdominal testis. However, techniques for the subsequent orchidopexy vary, and include the recently described staged laparoscopic traction orchidopexy (SLTO) (Shehata 2015). SLTO enables elongation of the testicular vessels without division, with initial success rates reportedly superior to Fowler-Stevens at 84%. We present the first UK data following a preliminary study using SLTO.

Methods: 16 boys prospectively presenting with 19 impalpable testes underwent STLO in a single centre, with median (IQR) age 2.7 (2.2-7.9 years) at 1st stage. 3/16 (18%) were bilateral, and eight (50%) left-sided. Pneumoperitoneum was established using 5mm umbilical and 3mm accessory ports in bilateral iliac fossae. The gubernaculum and lateral peritoneal attachments were divided prior to securing the intra-abdominal testis to the contralateral anterior abdominal wall with 2/0 Ti-cronTM. 2nd stage procedures were performed laparoscopically 4.2 months later; the securing stitch was cut, an 11mm STEP port was placed trans-scrotally to retrieve the testis and secure in a sub-dartos pouch. Outcome measures included palpable testes in the scrotum and complications.

Results: 10/16 have undergone follow-up. 90% of patients had palpable testes in the scrotum following the second stage procedure. There was one diathermy-related bladder injury necessitating laparoscopic repair, and 3/19 slipped sutures, requiring repeat procedures.

Conclusions: Staged laparoscopic traction orchidopexy is a feasible technique, which can be performed as an alternative to Fowler-Stevens procedure, with potentially better outcomes for the testis. The complications described should be preventable as the technique evolves.

1.13 LONE RANGER IN THE EAST. A JOURNEY TO REINTRODUCE LAPAROSCOPIC FUNDOPLICATION

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Aim: Management of gastroesophageal reflux disease (GORD) remains controversial. Surgical fundoplication has reduced in children nationally. Fundoplication was infrequent in our institution prior to 2016.

A complex upper-GI MDT (cGMDT) was established in 2016. One surgeon has reintroduced laparoscopic fundoplication. No senior laparoscopic support exists in this institution. We aimed to audit this change in practice.

Methods: A retrospective case-note review of a prospective cGMDT database (2016-2019). Data collected included patient demographics, diagnoses, symptoms, investigations, procedure type and complications. Criteria for fundoplication were: pathological reflux on pH/impedance study in maximally medically managed patients with capacity for oral feeding.

Results: cGMCT discussed 81 patient episodes. Twelve patients underwent laparoscopic fundoplication. Practice evolved from Nissen(2) to Watson(10) fundoplication. Underlying diagnoses were: Chronic lung disease/CF(9), congenital diaphragmatic hernia(1), Barrett's Oesophagus secondary to OA(1) and laryngeal malacia/unsafe swallow(1).

All patients reported symptom resolution post-operatively. Lower respiratory tract infection episodes reduced and the Barrett's oesophagus had resolved on repeat biopsy. The patient with OA has reduced dilatations from 4/year to 1 in 2 years. Two patients (17%) undergoing Nissen's experienced complications necessitating: Wrap dilatation(1) and adhesionalysis for small bowel obstruction(1).

Conclusions: Challenging dogma and practicing complex laparoscopy in the absence of senior trained colleagues is possible with careful patient selection. Decision making is improved with cGMDT.

Laparoscopic fundoplication provided symptomatic relief in patients with GORD refractory to medical treatment with a low rate of complications and a reduction in lower respiratory tract infections in patients with underlying lung disease.

4.1 VIRTUAL REALITY TRAINER FOR PAEDIATRIC LAPAROSCOPIC INGUINAL HERNIA REPAIR - FACE AND CONTENT VALIDATION

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Purpose: Due to the small operative field, the learning curve of Paediatric laparoscopic procedures is steep and requires advanced operative skills. Self directed validated training tools with objective feedback are rare in paediatric surgery. Computer based Virtual Reality (VR) simulators can offer a safe, cost-effective and configurable training environment free from ethical and patient safety issues.
Our aim was to test face and content validation for the computer based task of laparoscopic hernia repair

Methods: We developed a prototype VR simulator for core manual skills training for paediatric laparoscopic hernia repair. The simulator currently consists of a hernia suturing task on a virtual, non-anatomical trainer at a real paediatric scale.

Results: A simulation realism validation study was carried out by obtaining subjective feedback (face and content validity) through a questionnaire from 36 paediatric surgeons. The overall simulation realism was on average marked 3.08 on a 5-point Likert scale (1 - 'very unrealistic', 5 - 'very realistic'). The participants were most satisfied with the visual realism (3.33 on average) and most critical about the behaviour of virtual tissue (2.42 on average). The simulator showed good content validity: its usefulness as a training tool for hernia repair, suturing in general and in in learning fundamental laparoscopic skills was marked, on average, 3.61, 3.64 and 3.89, respectively.

Conclusions: VR simulation of Paediatric laparoscopic procedures can contribute to surgical training and improve the educational experience without putting our youngest patients at risk. This simulator is a first prototype and the initial results indicate that it provides promising foundations for further development. More formal and larger studies, such as construct validity and transfer of skills will be conducted towards the end of the project after further refinement and development.

4.2 THORACOSCOPIC DIAPHRAGMATIC HERNIA - AN INNOVATIVE COST EFFECTIVE MODEL TO PROVIDE A TRAINING OPPORTUNITY FOR PAEDIATRIC SURGERY TRAINEES.

H Carter, R Lisseter, S Marven, N Alizai

Aim: To produce an inexpensive, reusable Congenital Diaphragmatic Hernia (CDH) model which would be repairable via a thoracoscopic approach for training purposes.

Method: The thoracoscopic model, based on a previous open CDH model constructed by the author, utilised easily available household products. Hydrocellular foam dressing material was used to form the diaphragm. Wire was used to construct palpable ribs to simulate realistic instrument placement. Neonatal bowel was simulated by jelly filled collagen sausage skins. The full model was created inside a silicone loaf tin which held its form even when wet.

The model was used for a UK Consortium Training Day. Standard 3mm laparoscopic instrumentation was used to effect the repair and a trainee also assisted with 30^0 camera manipulation.

Results: The model successfully replicated operating in the confined space of the neonatal thorax. Trainees were able to successfully return the bowel, stomach and spleen to the abdominal cavity and close the diaphragmatic defect. Use of the model invoked discussion re positioning, handling of the bowel, stomach and spleen and laparoscopic camera skills. The repair sutures could then be removed and the replica bowel and organs returned to the chest cavity for reuse.

Conclusion: It is possible to produce a viable realistic reusable CDH model for less than £30 GBP. With instructions for manufacture, this model would be easily reproducible in other centres.

4.3 THE ROLE OF LOW FIDELITY SIMULATION IN PAEDIATRIC ENDOSCOPIC TRAINING

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Aims: Although high fidelity animal model simulation brings many advantages, it is not without its drawbacks; requiring a licenced premises, storing facilities, staff to prep and manage the specimens to name but a few. Finding an acceptable low fidelity model for laparoscopic training can erase many of these barriers, and even allow trainees to practice outside a formal simulation laboratory. Here we present our experience with a non-animal model we designed for laparoscopic pyeloplasty procedure.

Methods: For 2 years we have developed 2 plastic and silicone based model for simulating laparoscopic pyeloplasty, and used it for training at the BAPES Advanced Minimal Access Surgery Urology Course. After each session we received both quantitative and qualitative feedback from both trainers and trainees. Here we present our findings.

Results: Across the 2 years, a total of 21 candidates have been through the course. When rating the course 1-5 (1 not useful, 5 useful) candidates gave median scores of 4 for the simulation usefulness, transferability of skills and realism. Qualitative data was received and was positive over realism and Its use for teaching the surgical steps. It was felt improvements were needed for the thickness of some of the materials.

Conclusions: Here we present trainee and teacher experiences of our non-animal model for laparoscopic pyeloplasty. It has received excellent feedback and shows how non-animal models can be utilised for simulation learning.

4.4 BUILD YOUR OWN – LAPAROSCOPIC URETERIC REIMPLANTATION MODEL. HERES ONE I MADE EARLIER

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Aims:
Non-animal simulation models can allow trainees to practice the key steps and skills required for laparoscopic procedures outside of the tightly controlled setting of specific simulation labs and courses. Here we set out to describe and disseminate how you too can build a laparoscopic ureteric implantation model at home for training using simple materials.

Methods:
To build this model you will need: 2x sheets A4 felt, 1x sheet A4 sticky-back plastic, 1x foam sponge, 8mm latex tubing, 1x rubber glove, 1x cable tie, 1x IV giving set and 1x 50ml syringe.

Additional items required: glue, scissors and some time.

Results:
We used our ureteric reimplantation model for ten trainees attending an advanced paediatric urology skills course. Following the course attendees gave feedback on the model; rating (1-5) their skills in laparoscopy reimplantation. Mean scores rose in all 3 domains as self-reported by trainees before and after the simulation with regards to familiarity with the surgical steps (3.2 – 4.0), confidence in the procedure (1.9 – 3.3) and competence (1.8-3.8).

Conclusion:
Here we describe and present our non-animal model for laparoscopic reimplantation. We have demonstrated how it can be built for use in your own light box outside a formal simulation lab and shown how users of the model have found it useful in advancing their laparoscopic skills.

4.5 STEEP LEARNING CURVE FOR ROBOTIC SURGERY

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Background/Aim: Robotic Surgery is said to have a steep learning curve as compared to Laparoscopic Surgery (LS). Due to the intuitive nature of the device even a non-surgical person will have no hesitation while manipulating and suturing, which is very different to LS. But does this translate into actual outcomes and is the tangible learning curve actually as steep as proposed?

Method: We used a single cohort (Choledochal Cyst excision and Hepatico-Jejunostomy) of patients, for a single surgeon over an eleven year period (n-76). We divided the time period into three periods and looked at the conversion to open rate. We did not look at any other aspect.

Results: The rate of conversion was 18% in the first period, which dropped to Zero percent in the third period. Over the eleven year period there were changes in the mode of dissection and certain other technical aspects.
It was noted that the reason for conversions, in the first period were genuine and acceptable, however similar reasons were encountered in the other periods, but the cases were not converted and no complications were experienced.

Conclusion: Robotic surgery may have a very steep learning curve, but the actual patient outcome (learning) curve may not be that different from Laparoscopic surgery or any other/open/conventional operations. In authors experience and opinion, for any complicated reconstructive operations, the steepness of the outcome curve is only reached after at least 50 cases.

5.1 MINIMALLY INVASIVE SURGERY FOR CONGENITAL DIAPHRAGMATIC HERNIA: A SINGLE INSTITUTION'S 10-YEAR EXPERIENCE

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Aims: Minimally Invasive Surgery (MIS) for the repair of Congenital Diaphragmatic Hernia (CDH) is well described yet only 20-30% of surgeons report this as their preferred operative approach. We report our institutional experience with this technique.

Methods: A 10 year (2009-2019) retrospective review of all patients undergoing primary MIS repair of CDH was conducted. Outcome measures included conversion, length of surgery, complications and recurrence rates. Results are shown as median and range.

Results: 44 patients underwent MIS surgery of which 66% were neonatal (Group A) and 34% presented outside this period (Group B). The median gestational age for patients in Group A was 38 weeks (32-42) and median birth weight 2940g (1770-4300g). Group B patients underwent surgery at a median age of 24 months (1-149) and a median weight of 9.6kg (3.4-39.7). The results are shown in the table below.

Group	**A (neonatal) n=29**	**B (non-neonatal) n=15**
Time to surgery (days)	6 (2-25) days	730 (30-4533)
Left Sided (%)	86	80
Duration of surgery (minutes)	168 (90-300)	190 (60-260)
Converted (%)	24	27
Use of Patch (%)	55	47
Complication rate (%)	14	7
Recurrence rate (%)	7	7
Follow-up (months)	40 (1-110)	23 (2-74)

No patients in either group had been on ECMO pre-operatively. In Group A, complications included intra-operative supraventricular tachycardia (1), pneumothorax requiring a chest drain (1), chylothorax (1) and bowel perforation (1). In Group B, there was only one complication in a patient who had a post-operative chest infection.

Conclusions: In our experience, MIS repair of CDH is safe with few complications. Patient selection is extremely important when employing this technique. Our low recurrence rate may be attributable to having a low threshold in using a patch to achieve a tension-free repair.

P5.2 THOU SHALL NOT APPROACH THIS DIAPHRAGM THORACOSCOPICALLY

Elmarie van der Merwe, Michael Singh.
Birmingham Children's Hospital

Aim: To describe a challenging diagnostic case where the standard surgical route was precluded due to patient factors.

Methods: Retrospective, single centre case review.

Results: A 3 year old boy with complex cardiac disease was referred for a laparoscopic gastrostomy. His past medical history included surgery for a cyanotic cardiac lesion, complicated by a prolonged cardiac arrest. He was mainly fed via a nasogastric tube with significant gastro-oesophageal reflux, and exertional dyspnoea. On routine pre-operative investigation of his reflux, his contrast study revealed the incidental finding of an abnormally orientated stomach and a raised left diaphragm. This presented a diagnostic dilemma as the differential included: gastric rotational abnormality, hiatus hernia or diaphragmatic eventration, all with different surgical approaches. To complicate surgical planning further his previous cardiac surgery precluded a thoracoscopic approach, and we had to take into consideration that he might be unable to tolerate a prolonged period of pneunoperitoneum.
At laparoscopy we found a normal gastric orientation and no hiatus hernia but a left diaphragmatic eventration was confirmed. The plication of the diaphragm was undertaken laparoscopically, and this proved to be challenging due to continuous intrusion of the spleen into the operative field. The gastrostomy insertion was uncomplicated.
He had an uneventful post-operative course and on follow up 3 months postoperatively he was taking all his meals orally and his exertional dyspnoea had resolved.

Conclusion: This case illustrates the challenges of using an alternative surgical approach in complex cases.

6.1 A 17-YEAR SINGLE-CENTRE EXPERIENCE OF THE MANAGEMENT OF CHOLEDOCHOLITHIASIS IN CHILDREN PRIOR TO LAPAROSCOPIC CHOLECYSTECTOMY

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Aims: Management of choledocholithiasis prior to laparoscopic cholecystectomy (LC) is often dictated by institutional availability of endoscopic retrograde cholangiopancreatography (ERCP) and experience with intra-operative cholangiography (IOC) and the optimal pathway remains unclear. We report our experience of selective use of pre-operative ERCP and interval LC.

Methods: 17-year (2002-2019) single-centre retrospective review of children with choledocholithiasis undergoing LC. Data expressed as median (range).

Results: 27 patients (16 female) aged 13.4 (3.3-16.8) years presented with choledocholithiasis. 37% had an underlying haemolytic disorder. All had dilated ducts on US and obstructing calculi were visualised in 22%. 15 underwent MRCP and calculi were visualised in 80%.
85% (n=23) underwent ERCP at 7 (2-57) days post-presentation. ERCP demonstrated calculi in 56% and sphincterotomy and balloon trawl was undertaken. Stent placement for inflammatory stricture following stone extraction was undertaken in 4. Aberrant biliary anatomy (low cystic duct insertion) was identified in 2. There were no complications of ERCP. Following ERCP LC was undertaken at 3.2 (0.6-9) months and nil re-presented in this interval.
5 underwent LC with IOC (n=3 without obstructing calculi on pre-operative imaging; n=1 post-ERCP and n=1 with calculi on MRCP but resolution of clinical symptoms). 1 required post-operative ERCP for suspected persisting distal obstruction. Children undergoing IOC alone were older than those who underwent ERCP (14.9 vs 12.7 years; p=0.034)

Conclusions: Pre-operative ERCP in children with choledocholithiasis permits safe and effective management by interval LC with only select requirement for IOC and avoidance of intra-operative bile duct intervention which may result in stricture

6.2 THORACOSCOPIC DEBRIDEMENT FOR EMPYEMA THORACIS: RE-AUDITED

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Aims: To review the success rate of early thoracoscopic debridement (TD) of childhood empyema, in light of the increasing incidence of empyema associated with pulmonary necrosis (PN) in children.

Methods: Retrospective data collection: (October 2010 – December 2016) operative intervention, complications and time to discharge, of empyema patients that underwent thoracoscopic debridement. Twenty patients were excluded: underwent primary thoracotomy and insertion of Serratus anterior digitation flap for PN or Bronchopleural Fistula (BPF.

Results: 106 patients (Male=Female), median age 4 years (IQR 2-6 years) with a mean duration of symptoms of 11 days. All patients underwent TD as primary intervention: 3 were converted to thoracotomy (2: poor vision, 1: with PN). TD was successful in 93/106, however, 12 patients required second intervention: 10 mini-thoracotomy for PN/BPF (had Serratus anterior digitation flap), 1 pericardial drain & 1 re-positioning drains. Counting conversions as failure; the overall success rate of TD was 88%. There was no statistical difference in success rate compared to our previous series (106/114 93% vs 93/106 88%) (P=0.251 Fisher's Exact). There was a significant increase in median time to discharge in the thoracotomy group (17 days) compared to TD (7 days).

Conclusion: Primary TD for paediatric empyema gives an excellent outcome, with adequate drainage and full lung expansion. Most failures in our series were due to PN and BPF, requiring thoracotomy and Serratus anterior digitation flap. This is likely a consequence of the increasing incidence of necrotising pneumonia that has been well reported.

6.3 PROSPECTIVE COMPARISON OF OUTCOMES FOR PERCUTANEOUS ENDOSCOPIC GASTROSTOMY BUTTON VS. PERCUTANEOUS ENDOSCOPIC GASTROSTOMY TUBE.

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Aims: To compare outcomes of primary percutaneous endoscopic gastrostomy button (PEGB) insertion using T-fastener technique with primary endoscopic gastrostomy tube insertion (PEGT).

Methods: Data was prospectively gathered on ninety-two cases of primary gastrostomy over a two-year period (2016-2018). Outcomes included operative complications, granulation formation and need for further general anaesthetic (GA) for tube change.

Results: Fifty-six (61%) primary PEGB were inserted using a T-fastener technique (video). Thirty-six (39%) PEGT (Corflo) were inserted using a push-pull technique.
Two PEGB had peri-operative misfiring of the T fastener (both into the serosa of the posterior stomach wall). With PEGT gastrostomy insertion, there were three bowel injuries (two colonic and one small bowel). One PEGB was displaced one week after insertion. The new device was replaced under fluoroscopy. Fourteen (23.7%) PEGB & 18 (49%) PEGT had granulation tissue which required specialist nurse treatment ($p = 0.01$). Eighteen (48.6%) of the PEGT underwent tube change under GA to either a button or a new tube in the study period compared to zero with the PEGB. ($p= 0.00008$)

Conclusions: The T-fastener technique of placing a primary button gastrostomy avoids the need for a replacement device under GA . Twice as many PEG had granulation issues as PEGB. Two minor operative complications were encountered with PEGB insertion compared to 3 Major with PEG insertion.

6.4 THORACOSCOPIC OA/TOF REPAIR: A SINGLE INSTITUTION'S 10-YEAR EXPERIENCE

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Aims: Thoracoscopic OA/TOF repair was first described in 1999. Currently, less than 10% of surgeons routinely employ minimally access surgery for the management of OA/TOF. Our primary aim was to review our immediate, early and long-term outcomes with this technique.

Methods: A 10 year (2009-2019) retrospective review of all patients undergoing primary thoracoscopic OA/TOF repair was conducted. Outcome measures included conversion to open, length of surgery and immediate/early complications. Long-term complications included anastomotic strictures needing dilatations.

Results: 32 patients were identified with a median gestational age of 38 weeks (32-42) and BW of 3100g (1400-4220g). All patients had Type C anatomy except one. 60% had an associated cardiac anomaly. The median operative time was 240 minutes (145-415). 28% of cases were converted. Post-operative paralysis was employed in 78% with a median time to extubation of 5.5 days (1-15). Two patients suffered from intra-operative bleeding, four patients developed a pneumothorax, one patient developed an anastomotic leak and another developed a recurrent fistula. The median time to full feeds was 6 days (3-13) and length of stay was 15.5 days (5-86). 69% developed a stricture requiring ≥1 dilatation. 85% were commenced on antacids at discharge with 6% undergoing a fundoplication. The median follow-up was 60 months (2-120). There was one death in a neonate with a cardiac anomaly and NEC.

Conclusions: In our experience, thoracoscopic OA/TOF repair has few immediate complications but is associated with a high stricture rate. The use of post-operative paralysis may be protective towards an anastomotic leak.

6.5 ONE SIZE FITS ALL? IMPACT OF HAND SIZE ON EASE OF USE OF MINIMALLY INVASIVE SURGICAL INSTRUMENTS.

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Aims: Proper consideration of ergonomic factors is vital to practice safe and efficient minimally invasive surgery (MIS). Surgeons with smaller glove sizes have previously been reported to experience difficulties with MIS instruments. We aim to investigate hand anthropometrics and their relationship to surgeon comfort when performing MIS.

Methods: Surgeons were surveyed on their experience of handling MIS instruments and images obtained of the dorsal and palmar aspects of dominant hands. Photographs were transformed to calibrated coordinates to enable anthropometric measurements to be made photogrammetrically. Surgeon-perceived discomfort, fatigue, pressure points and techniques to mitigate difficulty handling instruments were compared to hand measurements. Data were analysed using Spearman's rank correlation.

Results: Questionnaires were completed by 58 surgeons: 17(29%) women; 20(34%) consultants, with glove sizes 6-8(median 7.5). All reported a degree of hand fatigue when performing MIS. 40(69%) reported difficulty handling instruments, 49(84%) experienced pressure points, 25(43%) used palming or two-handed techniques to ameliorate difficulty, 19(33%) perceived MIS instruments as inadequate for their hand size. Shorter index finger length moderately correlated with increased fatigue ($\rho=0.27, p=0.04$), difficulty handling instruments ($\rho=0.45, p<0.001$), pressure points ($\rho=0.45, p<0.001$) and perceived instrument inadequacy for hand size ($\rho=0.49, p<0.001$). Width of ring finger moderately correlated with difficulty handling instruments ($\rho=0.43, p<0.005$) and perceived instrument inadequacy for hand size ($\rho=0.53, p<0.001$).

Conclusions: Surgeons with smaller hands reported increased problems handling MIS instruments. Those with short index fingers and narrow ring fingers experienced the greatest difficulties. Hand size varies greatly between surgeons and anthropometric variability should be considered in design of MIS instruments.

6.6 THORACOSCOPIC INTERNAL TRACTION FOR LONG GAP OESOPHAGEAL ATRESIA IN SCOTLAND

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Aims: Management of long gap oesophageal atresia remains challenging. Our aim was to report the Scottish experience of thoracoscopic internal traction for treatment of long gap oesophageal atresia.

Methods: We conducted a retrospective case review of patients planned for thoracoscopic internal traction for long gap oesophageal atresia in all Scottish paediatric surgery centres.

Results: Since 2014, 4 patients have been managed in this manner (2 Glasgow; 2 Edinburgh). Antenatal polyhdramnios was identified in all cases. Gestation at birth ranged from 33+4 to 37+1 weeks, and birth weight from 2-2.7kg. A single patient had associated VACTERL and chromosomal anomalies. Contrast gap assessments were attempted between 3 and 20 weeks demonstrating separation of 3.5-7 vertebrae in all but a single patient, in whom gap assessment was conducted thoracoscopically as no reflux was identified on fluoroscopy. Initial thoracoscopy for placement of internal traction sutures was performed between 7 and 20 weeks. In 1 patient, oesophageal anastomosis was found to be feasible and the remaining 3 patients had internal traction with subsequent anastomosis at second thoracoscopy 4-5 weeks later. All patients had satisfactory post-operative contrast swallow examinations and have tolerated oral feeds (two patients required subsequent anastomotic dilatations and one experienced an episode of food bolus obstruction). Follow-up ranged from 3 months to 5 years.

Conclusion: Thoracoscopy provides a flexible approach in this challenging patient group allowing progression to anastomosis, if feasible, or internal traction and delayed anastomosis if not. The optimal timing of initial thoracoscopy and the period of traction remains to be defined.

6.7 SINGLE LUNG VENTILATION FOR CONGENITAL PULMONARY AIRWAY MALFORMATION

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Aims: Lung resection for antenatally diagnosed congenital pulmonary airway malformation (CPAM) is controversial. Many patients are asymptomatic and low morbidity is therefore essential. In 2018 service improvements for thoracoscopic lung resections were introduced at our centre; these included as default single lung ventilation led by two anaesthetists and two surgical consultants operating jointly. We review this early experience in a single centre practice.
Method: All patients who underwent thoracoscopic lung resection for CPAM between January 2018 and July 2019 were identified. A retrospective review was conducted looking at patient, anaesthetic and surgical factors with their associated outcomes. Data are presented as median (range).
Results: Eleven patients were identified (7 male), aged 13 (7-57) months with a weight of 9.35 (6.34-20.36) Kg. All underwent successful single lung ventilation with good collapse of the ipsilateral lung. When required (n=10), CO_2 insufflation pressure was 6 (0-8) mmHg with a flow rate of 1 (0.2-2) L/min. There were no conversions to open surgery.
The anaesthetic time was 60 (34-127) minutes and surgical time 4 (2.25-9.5) hours. The complication rate was 18% (2/11) with one port-site infection (Grade 1) and one pneumothorax, managed by adjusting the chest drains (Grade 2).
All patients commenced feeds on day one and drains were removed after 2 (2-6) days. The length of stay was 4 (3-8) days.

Conclusion:
1. Routine single lung ventilation for CPAM resection has been successfully and safely introduced in our unit
2. Anaesthetic and surgical outcomes have been good, with a low complication rate

6.8 EUROPEAN MULTICENTRE SURVEY ON APPROACHES IN PAEDIATRIC LAPAROSCOPIC APPENDECTOMY

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Aim: This survey reviewed the practice of laparoscopic appendectomy in paediatric surgical centres across Europe.

Methods: An online survey in paediatric surgical centres was performed.

Results: There were 58 (52 Consultants and 6 Surgical trainees). Among them (n=23;41%) performed >100 laparoscopic procedures yearly, (n=4;8.6%) <5. Trainee under scrubbed consultant supervision performed (n=40;70.1%), trainee with unscrubbed consultant (n=17;31.5%) and independent trainees (n=12;21%) and consultants (n=22;38.6%). Optic port preferences: 10mm (n=29;50.8%), 5mm (n=24;43.8%) and 12mm (n=3;5.2%). Working port preferences: chopstick (n=32;56.8%), triangulation (n=16;29.4%) and (n=11;19.6%) decided placement at initial laparoscopy. Dissection of mesoappendix: monopolar hook (n=26;46.4%), bipolar forceps (n=20;35.7%), harmonic devices (n=8;14.2%) and bipolar scissors (n=2;3.5%). Appendix ligation: PDS endoloop (n=7;13%) and endostapler (n=2;4.3%). Appendix removal: through optic 10-12mm port (n=27;46.3%), exchanging 5mm for 10-12mm port (n=9;16.6%), endobag (n=8;14.8%), sterile glove digit (n=7;12.9%), through 5mm ports (n=5;9.2%). Complicated appendicitis: (n=48; 83%) proceed with laparoscopy on prior known perforation, (n=53;92.5%) proceed with laparoscopy on confirmed. In abdominal pus: (n=52;90.5%) abdominal washout and (n=4;9.4%) only pus aspiration. Removal of complicated appendix: (n=16;28.3%) endobag, (n=14;24.5%) same technique as inflamed appendix, (n=10;18.8%) sterile glove digit, (n=10;16.9%) via 10-12mm port, (n=5;9.4%) exchange 5mm for 10-12mm and (n=1;1.8%) along with work port.

Conclusion: Opinions were divided with regards to approach in performing paediatric laparoscopic appendectomy in institutions throughout Europe.

6.9 MINIMAL INVASIVE SURGERY IN DUODENAL ATRESIA IN CHILDREN

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Aim: To compare between the laparoscopic and open repair of duodenal atresia.

Methods: 20 cases diagnosed as duodenal atresia, in the neonatal & pediatric surgical unit of Cairo University Specialized Pediatric Hospital were studied. Cases associated with malrotation, multiple atresia were excluded. we did duodenoduodenostomy in 15 cases in type II & III and in type I when the web in second part of the duodenum & excision of the web in 1st part of duodenum was done in 5 cases .laparoscopic repair was done in 11 cases (diamond duodenoduodenostomy in 9 cases and web excision in 2 cases) while open technique was done in 9cases (diamond duodenduodenostomy in 6 cases, excision of the web in 3 cases)

Results: 20 cases of duodenal atresia were included in this study over 1 year, from January 2017 to January 2018. The average operative time for cases of laparoscopic duodenoduodenostomy was 120 minutes while in the cases of open technique it was 50 minutes. The average time needed until full feeds to be achieved was 6 -7 days in cases done laparoscopically, while other group was 10 to 20 days orally. In this cohort, no stricture no leakage were found in both groups. Laparoscopic group afforded a better cosmesis.

Conclusion: use of laparoscope in duodenal atresia either in neonates or children is a safe & easy technique, and despite being a lengthier operation, feeds could be established earlier.

6.10 COMPARATIVE ANALYSIS AND ISSUES IN LAPAROSCOPIC INGUINAL HERNIA REPAIR (LIHR) FOR INFANTS <1YEAR

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Aim: This study analysed our cohort of infants <1year who underwent laparoscopic inguinal hernia repair (LIHR), comparing those <3months to ≥3months corrected gestational age (CGA). Furthermore, perioperative issues affecting <3months infants were identified and analysed.

Methods: Retrospective analysis of a single surgeon and associated trainees' experience of LIHR in infants <1year over a 5-year period (2013-2018) was performed. The operative technique involved a 5mm scope and 3mm instruments for herniorrhaphy with 4/0 Prolene® purse-string suture. Data collected included patient demographics, prematurity (<37weeks), CGA and weight at surgery, pre-operative haemoglobin level, co-morbidities, anaesthetic time, major perioperative complications and inguinal hernia recurrence. Comparison was made between those operated at <3months and ≥3months CGA. Data is stated as median and range unless otherwise specified. Statistical analysis includes T-test and Fisher's exact test (p-value<0.05 significance).

Results: 80 infants underwent LIHR (age <1year), of which 67 (84%) were male with a median CGA of 76 (-18-308) days, median weight of 5.5 kilograms (range 2.1-10.8). 47 (59%) infants had unilateral inguinal hernia repair and 33 (41%) had bilateral repair. There were no perioperative complications or mortality. The table below summarises our results, comparing outcomes in each age group. Low haemoglobin levels, co-morbidities and extreme prematurity required more attention during pre-operative assessment and post-operative management.

Conclusions: Comparable cohorts demonstrated no significance in recurrences despite significant differences in weight, pre-operative haemoglobin and median anaesthetic time. Pre-operative haemoglobin is an important factor that needs to be addressed in infants <3months for scheduling the procedure date (transfusion versus iron supplementation).

P1 LAPAROSCOPIC APPROACH TO INTESTINAL MALROTATION IN CHILDREN: SYSTEMATIC REVIEW

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Aim: Intestinal malrotation (IM) is a congenital disorder in which an arrest takes place in the rotation of the embryonic gut. The incidence of symptomatic malrotation is reported to be 1 in 6000 live births. This study reviewed laparoscopic options regarding IM in children.

Methods: Medline/PubMed databases were reviewed. Studies in patients under 18 years of age published in English/Spanish were included, and selected by 2 independent reviewers. Demographics (age, weight and type of malrotation, type of surgery, conversions, comorbidity and complications) were collected. Descriptive statistics were used to analyze the quantities portion of the study, with results presented as percentages, means and medians.

Results: 26 papers with n= 1828 patients met the inclusion criteria with median age 7 years, mean age 6.5 years, with mean/median weight 5kg. N= 457 (25%) patients were treated laparoscopic, n=1055 (57.7%) open and no data on n= 316 (17.3%). The rate of laparoscopic conversion was 16.8% (n=77). 14/26 articles described appendectomy as a part of Ladd's procedure. 1/26 article described cecopexy as a part of the procedure. Redo procedures were reported in n=82 (4.5%). The most common complication was bowel obstruction reported in 14/26 articles, followed by recurrent midgut volvulus and wound infection reported in 6/26 articles. Associated comorbidities were reported in 10/26 articles, and only 3/10 were specific: monoventricular cardiac anomaly, partial situs inversus, paraesophageal hernia with gastroesophageal reflux, spina bifida, hydrocephalus, coarctation of the aorta, and a solitary right kidney. There were n=4 lethal outcomes (0.21%)

Conclusions: Laparoscopic approach to malrotation in the pediatric age group is associated with a conversion rate of >15%. Poor reporting about the type of malrotation, co-mobidities and exact procedures performed needs to be improved to better evaluate outcomes.

P2 CONGENITAL DIAPHRAGMATIC HERNIA WITH INTRATHORACIC RENAL ECTOPIA THORACOSCOPIC APPROACH FOR A COMPLETE ANATOMICAL REPAIR

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Introduction: Congenital diaphragmatic herniae (CDH) with associated intrathoracic ectopic kidneys are rare congenital anomalies, with a reported incidence of only 0.25%.

Results: The authors report a case of a 24 day old baby girl who was diagnosed with a left sided CDH on a chest x-ray taken for pneumonia. CT scan showed CDH hernia, containing small and large bowel and whole left kidney with adrenal gland. Thoracoscopic reduction of the bowel, kidney and adrenal into the abdomen and primary closure of the defect was achieved with no complications. During investigation of the child it was discovered that her maternal aunt had also had a left sided congenital diaphragmatic hernia containing the kidney, which was treated via open surgery after birth; she subsequently developed renal cell carcinoma and required radical nephrectomy of that kidney during her third decade.

P3 USE OF A FLEXIBLE GUIDEWIRE IN STENTING TORTUOUS URETERS IN CHILDREN

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Aims: Cannulation of a tortuous ureter for therapeutic stenting carries a significant risk of perforation when using stiff guidewires. Angiographic guidewire use for ureteric cannulation has been described in adult urology. However, there is a paucity of literature regarding use of the technique in the paediatric setting.
We report our experience in the use of an angled hydrophilic flexible guidewire in the stenting of highly tortuous ureters in children with primary obstructive megaureter (POM), secondary obstructive megaureter and pelviureteric junction obstruction (PUJO).

Methods: All procedures were performed under general anaesthetic using a rigid cystoscope and fluoroscopic guidance. A 0.018 inch diameter Terumo Radifocus® Guidewire M (Standard type) with an angled tip was used in all patients to enable placement of a JJ stent.

Results: We report 6 children in whom ureters were navigated using the Terumo guidewire and subsequently stented. Indications for cannulation were:
1. POM (idiopathic vesicoureteric junction obstruction) in a solitary kidney with a dilated tortuous ureter (37-day old and 11-month old babies)
2. Secondary obstructive megaureter due to fixed extrinsic compression from intra-abdominal tumour (5-year old) or presence of post-radiotherapy ureteric stricture (2-year old with solitary kidney)
3. Bilateral PUJO (antenatally detected) in infancy to avoid nephrostomies (2-month old and 4-day old babies)

Conclusions: Use of a 0.018 inch diameter guidewire enables successful cannulation of highly tortuous ureters in babies and children. Based on our experience in this select group of challenging patients, use of this wire is a safe and effective way of facilitating ureteric stenting.

P4 ROBOTIC ASSISTED SPLENECTOMY

Rebecca Lisseter, Naved Alizai. Leeds Teaching Hospitals

Background: Minimally invasive surgery for elective splenectomy has been shown to reduce pain and post-operative hospital stay, with excellent cosmesis. Robotic surgery has the advantage of wrist-like movements and improved views allowing clear and easy vessel dissection and a secure technique for ligation. This is particularly beneficial in cases with challenging anatomy or significant splenomegaly.

Results: We perform robotic assisted splenectomy with a 12mm infra-umbilical camera port, and two 8mm instrument ports. An assistant instrument port is inserted in the left inguinal skin crease. Only two robotic instruments are required - a Plasma Kinetic or bipolar and a Cadiere forceps. A snake retractor (via assistant port) is used to retract the spleen and access the vessels. The splenic vessels are carefully identified, dissected, tied and endo-clipped then cut. Spleen is mobilised, the left inguinal port incision is extended to 2-3cm in length. The muscle is spread rather than divided. Using a port inserted through this incision, the spleen is placed in an endoscopic retrieval bag and brought up to the incision. Sponge-holding forceps or DeBakeys are used to carefully remove the spleen piecemeal, being careful not to spill or damage the bag. A 2.5cm wound infusion catheter may be inserted for analgesia of the inguinal wound.

Conclusion: The technique has the benefit of clear views of the splenic vessels, and greater range of movement for dissection and ligation. The scars are cosmetically excellent, with the largest incision being 2-3cm in the inguinal skin crease.

P5 OPTIMIZING PATIENT POSITIONING AND TABLE SIZE IN ROBOTIC SURGERY

Alison Wallace, Naved Alizai. Leeds Teaching Hospitals

Aim: Obstacles to performing robotic surgery in the paediatric population include insufficient operating space for the robotic arms due to the small size of many of the patients. Intuitive Surgical Inc suggests a minimal working distance between port sites, which can potentially limit the size of the patients who can benefit from robotic surgery. We aimed to benefit by altering patient position and table size to operate on small children.

Methods: Trial of different patient positioning, table sizes and theatre equipment was undertaken to optimise robotic arm positions avoiding clashes and perform technically challenging procedures. We use a neonatal table for all children under 6kg undergoing robotic surgery. For children between 7-10kg we use thick Jell pads to raise the patient on the table. For procedures requiring table tilting, patients are strapped to the table.

Results: By using a smaller "neonatal-sized" operating table and carefully arranged padding to position the patient we found that enough space can be created to allow for the robot to operate successfully even on very small children. The minimal working distance between the port sites can be reduced below the minimal suggested by Intuitive Surgical Inc and the elbow of robotic arms can be lowered below the level of the table avoiding injury to the patient and damage to the equipment.

Conclusion: Over the years we have gradually reduced the size of the patients undergoing robotic surgery. We can demonstrate that patient size can be overcome by the appropriate use of smaller operating tables and careful patient positioning pre-operatively to enable adequate manoeuvrability during surgery. By employing these strategies, patients previously considered ineligible due to their small size may now be suitable candidates and thus reap the benefits of undergoing their operations robotically.

P6 DIAGNOSTIC CYST-ENDOSCOPY IN MANAGEMENT OF COMPLEX PELVIS CYST

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Aims:
We share our approach to management of a complex pelvic cyst.

Methods and Results:
Antenatal diagnosis of absent right kidney and pelvic cyst, thought to be ovarian in nature. Postnatal imaging (US, MRU) suggestive of right-left crossed fused renal ectopia, normal ovaries and hemi hydrometrocolpos. At age 9, she was clinically and biochemically pre-pubertal, but reported episodes of vaginal bleeding. A multidisciplinary team (paediatric urology, endocrinology and gynaecology) decided to proceed with EUA and cystovaginoscopy.

Cystoscopy revealed a normal urethra and only one ureteric orifice (left) in an otherwise normal bladder. EUA revealed a cystic structure bulging into the right wall of the vagina. Needle puncture aspirated clear fluid, pH 8 on dipstick. Due to the possibility of this representing an ectopic ureter, Seldinger technique was used, introducing a guidewire via the needle, over which a 7Fr cystoscope was passed. Examination of the cystic cavity confirmed presence of a cervix at the cranial extremity, suggesting that this was an obstructed hemi-vagina. There was no evidence of an ectopic ureter. The puncture site into the hemivagina was widened to define the septum between the two vaginas, and this was divided using a Harmonic scalpel.

At 2 month follow-up, the patient was asymptomatic. Post-operative US revealed significant decrease in the size of the previously visualised cystic structure.

Conclusions:
Cyst endoscopy helped to confirm the obstructed hemivagina (and rule out an ectopic ureter). We present our cautious approach to draining a pelvic cyst in the context of identifying a single ureter, despite radiological suggestion of two ureters.

P7 OMENTAL FLAP REPAIR FOR OESOPHAGEAL PERFORATION DURING LAPAROSCOPIC CARDIOMYOTOMY FOR PAEDIATRIC ACHALASIA CARDIA

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Aim: To describe the use of omental flap in management of iatrogenic oesophageal perforation while performing laparoscopic Heller's cardiomyotomy for achalasia cardia.

Methods: We studied the patients who underwent laparoscopic cardiomyotomy at our institution. In one of our patients, lower end of oesophagus got perforated while doing the surgery. Herewith we describe our novel method of laparoscopic raising of the omental flap from the greater curvature of stomach and suturing it over repaired oesophagus before doing fundoplication. This patient, a teenage boy had an iatrogenic oesophageal mucosal perforation approximately 1.5 cm in length. We used 4-0 interrupted polyglactin sutures for repairing the perforation. An omental flap of adequate size was raised along the greater curvature of stomach using ultrasonic dissector and was sutured on myotomy edges of oesophagus over the repaired mucosa. This procedure took approximately 30 minutes. Anterior 180 degree fundoplication was done using 3-0 Ethibond sutures. Patient recovered after the operation. Post-operative upper gastrointestinal contrast study showed no leak and free passage of contrast in the stomach.

Results: A total of 4 patients with achalasia cardia had laparoscopic cardiomyotomy done at our centre during the study period. One patient had iatrogenic oesophageal perforation which was successfully treated by omental flap repair. None of the patients had any immediate post-operative complications. All patients are doing well and required no further interventions at more than a year of average follow up.

Conclusion: Omental patch repair is feasible, technically easy and reliable option to cover repaired oesophageal perforations especially in diseased oesophagus like that in achalasia cardia. It provides an additional well vascularised tissue reinforcement over the repaired unhealthy oesophageal mucosa.

P8 URETHRAL POLYP IN A NEONATE - AS SEVERE AS POSTERIOR URETHRAL VALVES?

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Introduction: Urothelial polyps (UP) arising from the lower urinary tract are a rare condition with only 5 neonatal cases reported in the literature. Complete urethral obstruction masquerading posterior urethral valves (PUV) has not been described.

Clinical case: A twin male was born at 36 weeks gestation (birth weight 2770g), by Cesarean section for IUGR of the other twin. Antenatal diagnosis of fetal megacystis and right ureterohydronephrosis at 22 weeks of gestation with normal amniotic fluid volume was made. Neonatal examination revealed a palpable bladder without other malformations.

The first postnatal US scan revealed a thick-walled bladder, a right pelvicalyceal dilatation with bilateral small kidneys (below 5th centile). An MCUG showed a trabeculated bladder, unilateral right grade V reflux and a pedunculated filling defect arising in the bladder neck causing bladder outflow obstruction. Creatinine at birth was 100 umol/L, with a Nadir Creatinine of 56 umol/L.

Cystoscopy at 3 weeks of life showed a trabeculated bladder, no PUV and a polyp located in the bladder neck obstructing the bladder outlet. Excision of the polyp with biopsy forceps was performed. Histopathology of the specimen revealed a polyp lined by urothelium with myxoid stroma core.

Conclusion: It is believed the gold standard treatment of UP is a transurethral resection, being curative in all cases reported in the literature. The authors believe this represents the most severe case requiring long term follow-up in order to monitor urological associated anomalies, similarly to a PUV condition.

P9 SHOULD PAEDIATRIC SURGEONS USE SHARP OR BLUNT TROCARS FOR SECONDARY PORT INSERTION?

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Aim: The current published literature argues in favour of using blunt tipped trocars for secondary port insertion as they are thought to avoid visceral injuries1.
Moreover, port-site bleeding has been reported with cutting trocars when compared with blunt ones2. Serious intra-operative complications including mortality can occur if the principles of Minimal Access Surgery (MAS) are not followed. The aim of this article is to review a single surgeon's experience to support the safe use of sharp trocars.

Methods: Retrospective review of 1,500 MAS procedures performed by a single surgeon over the last 15 years at a tertiary centre. All secondary ports were inserted using sharp trocars.
Principles of MAS were followed for secondary port insertion. These include:
1. Appropriate size of skin and dermal incision
2. Appropriate intra-abdominal pressure; this point is particularly crucial in neonates
3. Good view of the trocar and the tissues/organs in the line of insertion
4. Good visualisation of abdominal wall blood vessels by trans-illumination

Results: There have been no episodes of intra-abdominal visceral or vascular injury. Any port site related bleeding stopped spontaneously due to port tamponade, without requiring haemostatic measures.
Sharp trocars were easier to insert in smaller children and in abdominal cavities with limited working space.

Conclusion: Sharp trocars require less force for insertion as compared to the blunt tipped trocars. Those can provide a false sense of security and can be potentially more dangerous than sharp trocars. Complications can occur if principles of MAS are not adhered to.

P10 AN UNUSUAL PRESENTATION OF DYSPHAGIA AND HORNER'S SYNDROME SECONDARY TO BUTTON BATTERY INGESTION

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Aims: To increase the awareness of and recognise the causes of acquired Horner's syndrome in the paediatric patient: trauma, malignancy, infection, vascular malformations, idiopathic or iatrogenic.

Case history: 1-year old boy presented with a sore throat and left upper eye lid swelling, treated with co-amoxiclav for tonsillitis and chloramphenicol for conjunctivitis. He re-presented multiple times over the next 5 weeks with pyrexia, ptosis of the left upper eyelid, ongoing eyelid swelling and dysphagia of solids.On his last presentation his left pupil was noted to be smaller than the right. A chest X-ray was performed in light of the persistent pyrexia showing a lodged button battery at the thoracic inlet.

The button battery was removed by rigid oesophagoscopy and an NG tube inserted. Circumferential white scarring of the oesophagus was noted but no obvious perforation seen. A CT scan however showed soft tissue swelling at the site where the button battery had been lodged with left sided oesophageal perforation, which was managed conservatively.

No leak was seen on follow up contrast swallow at 10 days and he was discharged home on a soft diet to increase to normal feed as tolerated. Surveillance for oesophageal stricture is on-going.

Conclusion: Consider unwitnessed foreign body ingestion in a patient with new onset dysphagia. Initial investigation for Horner's syndrome usually involves an MRI, but in this age range, we suggest a CXR should be performed before an MRI in case of unwitnessed button battery ingestion

P11 OUTCOMES IN PEDIATRIC LAPAROSCOPIC HIATUS HERNIA MANAGEMENT: SYSTEMATIC REVIEW

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Aim: This study reviewed outcomes on laparoscopic management of hiatus hernia (HH) in the pediatric age group.

Methods: MEDLINE/PubMed were reviewed. Studies in patients ≤17 years and published in English/Portuguese/Spanish were included, and selected by 2 independent reviewers. Data was collected for previous surgery, neurological impairment (NI), type of HH, associated fundoplication, conversions, recurrence, mortality and follow-up. Results are presented as percentages and means. Fisher's Exact Test was used to evaluate categorical variables, and statistical difference was considered when $p \leq 0.05$.

Results: Ten articles with n=171 met the inclusion criteria. Mean age were 66.1 months (range newborn - 17 years) with male predominance (n=110, 64.3%). NI was reported in 10/35 children, but the information was not available for the majority of cases (n=136; 79.5%). Type-I HH was reported in 15 children, type-II in seven, type-III in eight, and it was not specified in n=141 (82.5%). Overall, surgical correction was associated with fundoplication in n=170 (99.4%; n=99 Nissen, n=68 Thal, n=3 not specified). Patch was not used in the majority of cases (n=167, 97.7%). There were seven conversions (4.1%), five recurrences (2.9%) and no mortality. Complications were reported in n=27 (15.8%), esophageal stenosis being the most common (n=24; five required balloon dilation). Mean follow-up was 19.7 months (range 1-138 months).

Conclusions: Pediatric reporting on laparoscopic HH management is scarce, and important information is frequently omitted (e.g. NI, type of HH). The preferred approach is associated with Nissen/Thal fundoplication without patch repair. Recurrence occurred in less than 3% of the cases, and complications are minor, without mortality.

P12 DIAGNOSTIC LAPAROSCOPY IN NON- PALPABLE UNDESCENDED TESTIS - OUR EXPERIENCE

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Introduction: Non palpable undescended testis (NPUDT) constitutes about 20% of all cases. Laparoscopy has emerged as the diagnostic and therapeutic modality of choice in such cases.

Material and Methods: A retrospective analysis of 18 cases of NPUDT who underwent diagnostic laparoscopy and subsequent management based on laparoscopic in findings over a period of 2 years. Demography, clinical examination, Ultrasonography, MRI if done, operative finding and procedures were reviewed in all cases.

Results: A total of 18 patients ranging from 8 months to 12 years were analysed. Unilateral involvement was seen in 13 cases and 5 cases had bilateral NP UDT (23units). On diagnostic laparoscopy, 14 units had normal size while Vanishing testis found in 3units. Atrophic testis and nubbin testis were found in 1 and 2 units respectively in inguinal canal, while absent vas and atretic vas were seen in 2 units and 1 unit respectively. Orchidectomy was done in three units and orchiopexy was done in 14 units.1 patient developed recurrent undescended testis and underwent open orchiopexy and wound infection (inguinal incision) developed in one patient which was managed with daily dressings. Surprisingly, none of our patients needed Fowler-Stephen's staged procedure.

Conclusion: Diagnostic laparoscopy is superior to all investigations in diagnosing NPUDT. On diagnostic laparoscopy testis can be intra-abdominal, Atrophic, Vanishing, Blind ending vas or absent. Most of these can be managed with laparoscopy and if needed, can be staged accordingly.

P13 TWO COMPLICATED THYMECTOMIES

Elmarie van der Merwe, Michael Singh. Birmingham Children's Hospital

Aims: We describe the complicating factors in two patients who underwent thymectomies.

Methods: Retrospective, single centre review. The relevant radiologic images and intraoperative videos will be presented.

Results: A 14 year old female with Myasthenia Gravis was referred for a thymectomy. She was on maximal medical treatment, complicated by Cushingnoid features and diabetes. She developed a bulbar crisis, necessitating Intensive Care Unit admission and Intravenous Immunoglobulins. An MRI showed 'A small volume thymic tissue in the anterior mediastinum.' She required 4 months of intensive medical management to stabilise her preoperatively. On the day of surgery there was a delay in starting time and an unfamiliar theatre with inexperienced staff. This resulted in anaesthetic anxiety, equipment issues and surgeon stress. At thoracoscopy the right lobe of thyroid appeared to be absent making location difficult.

A 13 year old female was referred for repeat thymic biopsy following treatment for non Hodgkin lymphoma. She previously had a needle and open biopsy of the mass. Treatment completion CT scan showed a residual mass. This presented the conundrum of deciding whether this was thymic tissue or residual malignancy. A PET scan was performed that showed inhomogeneous uptake, more avid on the right side. A thoracoscopic excision biopsy was performed to guide further management. This was a difficult operation as there were significant pleural and mediastinial adhesions. Histology confirmed there was no evidence of malignancy.

Conclusions: These cases illustrate how patient and human factors can complicate surgery.

P15 OUTCOMES OF LAPAROSCOPIC CONGENITAL INGUINAL HERNIA REPAIR IN CHILDREN: RESULTS FROM A NATIONAL TRAINING WORKSHOP

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Aims: Paediatric laparoscopic repair of inguinal hernias was first reported in 1997, yet there is no consensus on the standard technique. Current techniques are grouped into two categories, those performed intraperitoneally or with extra-peritoneal suturing. We herein report our outcomes of intraperitoneal (intracorporeal) techniques. We nationally adopted the strategy of organising regular laparoscopic workshops to overcome challenges in laparoscopic training.

Methods: 19 patients (14 boys and 5 girls) were enrolled. Twelve senior surgeons participated in this event (2017), where thirteen trainees with intermediate laparoscopic skills performed the operations under supervision of scrubbed-in experts. The median age was 3.5 years (range: 2 months - 7 years). The patients were reviewed in clinic after 1, 6 and 12-months postoperatively.

Results: Twenty-three hernia repairs were performed. Peritoneal disconnection with a purse string suture was done in 20, combined with narrowing of the iliopubic tract for a wide deep inguinal ring in 2. Peritoneal disconnection alone was done in 2. A purse string suture alone was done in 1. Four asymptomatic contralateral hernias were detected intra-operatively and repaired, making the overall bilateral cases six. Interestingly, 2 presumably recurrent hernias were found negative laparoscopically. The median operative time was 45 minutes (IQR:30-60min). All patients were discharged on the day of surgery with non-opioid pain-relief medications. No complications were encountered in the first 12 month of follow up, apart from a single port site hernia.

Conclusion: Paediatric laparoscopic inguinal hernia repair in the training environment remains efficient and safe with favourable postoperative outcome and minimal complications.

P16 PRE-OPERATIVE PORT SITE MARKING

Alison Wallace, Naved Alizai. Leeds Teaching Hospitals

Aim: It is a common practice for surgeons to mark the potential sites for the ports. Do pre-insufflation port site marks correspond to the actual port insertion sites? A single surgeon experience.

Methods: All patients requiring Fundoplication, choledochal cyst excision, splenectomy and cholecystectomy are routinely marked for port sites. Port site marks and actual insertion sites were compared for the last 11 patients by the operating surgeon, as a prospective observation. As a routine and habit the surgeon always inserts the retraction instrument before inserting the working ports.

Results: In all 11 (4 Choledochal cysts, 3 Splenectomies, 2 fundoplications and 2 cholecystectomies) patients the site of the working ports corresponded exactly to the final position of the respective ports. The site of the retraction port also corresponded exactly to the final port position in splenectomy cases. The site of the right subcostal incision, for the Nathanson retractor, did not correspond to the pre-insufflation mark. In all patients, who required a subcostal retraction incision, the incision was found to be well above the costal margin after deflating the abdomen, at the end of the procedure.

Conclusion: We “borrow” part of the chest wall to increase the size of the abdominal cavity during MAS. The pre-operative port site marks should not be used as inflexible sites. It may be useful to insert he retractor before planning the working port sites.

10.1 SAFETY AND EFFICACY OF PERCUTANEOUS NEPHROLITHOTOMY IN CHILDREN UNDER 3 YEARS OF AGE: A 10 YEAR SINGLE CENTRE OUTCOMES STUDY

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Aims: The incidence of paediatric urolithiasis has seen a steady incline. Percutaneous nephrolithotomy (PCNL) is the gold standard procedure for extraction of larger calculi. This study aims to assess the safety and efficacy of this procedure in children under 3 years of age.

Methods: The data of all children under 3 years of age undergoing PCNL at our institution between November 2009 and October 2018 were obtained from a prospective procedural database and chart review.

Results: 37 patients aged <3 years (28 male) underwent 47 PCNL procedures (45 standard calibre,2 super mini PCNL). Median age at procedure was 1.5 years (range 0.2-2.9). 7 patients underwent bilateral PCNLs , and 2 had two procedures on the same side. Median stone burden was 20mm (range 4-49mm). Median stone density was 941 HU (300-2400 HU). 2/47 PCNLs required multiple tracts. Initial stone free rate was 78.7%. 7/35 (19%) required adjunctive lithotripsy. Stone composition was calcium phosphate (74%), calcium oxalate (31%), struvite (17%), triple phosphate (11%), Cystine (3%) and urate (3%). Underlying aetiology was infective (57%), metabolic (22%), other (16%) and unknown (5%). Two complications were recorded: need for transfusion (n=1) and insertion of JJ stent following dislodgment of the nephrostomy tube (n=1).

Conclusions: Despite the complexity of stone disease in this age group, the stone clearance rates and low number of complications in this series suggest that PCNL is both safe and effective in small children in experienced hands and should be advocated as a first line intervention.

10.2 THE ROLE OF LAPAROSCOPY IN ISOLATED FALLOPIAN TUBE TORSION(IFTT) IN FEMALE ADOLESCENTS

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Aims: Isolated-fallopian-tube-torsion(IFTT) is a rare cause of acute abdomen mostly seen in women of reproductive age (annual-prevalence: 1-1.5million). It is often diagnosed during surgery. We review our cases to characterize diagnosis and management.

Methods: We retrospectively reviewed data of 8-patients aged 10-14 years(mean age 12years) with surgically diagnosed IFTT in our Centre, analyzing common presenting signs, symptoms, and radiographic findings, as well as surgical interventions.

Results: All patients presented abdominal pain localized to the side of torsion. Ultrasonography reports described in 5-patients(62,5%) an associated ovarian/paraovarian cyst, confirmed intraoperatively, without signs of ovarian torsions or direct tube visualization. Suspicion of FTT was considered in 2-patients with acute abdomen, normal blood examination, multiple ovarian follicles with increased ovary size at ultrasonography. Laparoscopy was performed in all cases.
Two-patients(25%) underwent salpingectomy(one open, one laparoscopic); 4(50%) underwent detorsion with drainage of associated cyst/cystectomy. Two underwent detorsion. No recurrences were recorded.
All two resected specimens revealed salpinx hemorrhage/gangrene with an associated cyst in one. Open-salpingectomy was necessary for pelvic adhesions. At follow-up all were asymptomatic with normal ovaries.

Conclusions: IFTT is a rare condition that seems to occur in younger adolescents. Preoperative diagnosis is difficult because of a lack of specific signs. Clinical presentation is vague. Preoperative suspicion may be increased based on radiographic findings of an enlarged tubular structure/adjacent normal ovary. In differential diagnosis of acute abdominal pain in children/female adolescents, IFTT should be kept in mind and early surgical management is essential in order to preserve fallopian tube for fertility. Laparoscopy allows for definitive diagnosis and treatment.

10.3 IS IT WORTH TO SWITCH FROM RETROPERITONEAL TO TRANSPERITONEAL APPROACH WITH LAPAROSCOPIC PYELOPLASTY?

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Introduction: The transperitoneal approach (TP) offers larger working space, anastomosis in front of the lower pole vessels compared to retroperitoneal procedure (RP). The peritoneum can be easily reconstructed and there is no difference in recovery and cosmesis.

Material and methods: Data of 156 pyeloplasties were reviewed. TP: 40 consecutive cases (27 over 5, 13 under 5 and 3 under 1 year, youngest 5 months old) including 3 redo cases. RP: 56 consecutive primary cases over 5 years of age. OP: 60 primary cases (41 over 5,19 under 5 and 9 under 1 year, the youngest 3 months old). Operation time, conversion rate, postoperative complications were assessed. Unpaired t test was used to compare means and SD and Chi-squared test to compare proportions (%), $p<0.005$.

Results: TP was shorter than RP (230.4 +/-29 vs. 249.8 +/- 46, $p =0.0036$). Conversion rate was lower in TP than RP (1/40 (2.5%) vs. 3/56 (5%) $p=0.380$). There was no difference in early postoperative complications TP: 3/40 (7.5 %) vs. RP: 7/56 (12.5%) $p= 0.4316$ and vs. OP: 5/60 (8.3%) $p=0.4596$. There was no difference in hospital stay (3 days) and long term complications requiring second intervention like JJ stenting, balloon dilatation and redo (TP: 4/40 (10%) vs. RP: 4/ 56 (7%) $p= 0.6003$ and vs. OP 5/60 (8%) $p= 0.7308$)

Conclusion: TP is safe, effective, slightly shorter than RP and suitable for much younger patient and for redo cases as well. It may worth to switch from RP to TP.

10.4 MANAGEMENT OF PUJO IN CHILDREN: A PROSPECTIVE COMPARATIVE STUDY BETWEEN OPEN AND ROBOTIC ASSISTED APPROACH IN A TWO-YEAR PERIOD

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Aim: To compare open (O) and robotic assisted procedures (RA) for pelvi-ureteric junction obstruction (PUJO) in children: A prospective study over a two-year period.

Methods: A prospective database for all procedures to treat PUJO in children informed the outcomes comparing O and RA approach between 2017-18. All children were followed up in clinic after JJ stent removal with regular US scans.

Results: Thirty-one children (M22:F9) included; divided into two groups (O-11 and RA-20). RA was only done if the child was over 10 Kg in weight as dept policy. Mean follow up in months was similar in both groups (O 17.9[5-28]; RA 14.5[6-24]). Procedures - Pyeloplasty (25: O[9] RA[16]); Vascular Hitch (2 RA); Redo procedures (4) - pyeloplasty (4: O[2] RA[1]); Ureterocalycostomy (1 RA). Primary procedures for redo cases were done before this study period. Age, weight, procedure duration (DOP), Length of stay in hospital (LOS) as shown in table were compared with T-test to 95% CI. All procedures were successful with no further intervention or complications in the postoperative period.

	All Procedures		P	Pyeloplasty		P
	O	RA		O	RA	
Total No	11	20		9	16	
Mean Age (Yrs)	3.69	6.83	**0.0375***	2.42	6.76	**0.0044***
Mean Weight (Kgs)	18.5	26.6	0.1087	13.8	26.7	**0.0637***
Mean DOP (H:M)	02:50	01:48	**0.0002***	02.35	01.49	**0.0011***
Mean LOS (Days)	1.72	1.05	**0.0180***	1.55	1.06	0.1177

Conclusion: RA and O approaches for management for PUJO in children are equally safe and effective. RA has significantly reduced DOP compared to open cases in this series.

10.5 ROBOTIC VS OPEN PYELOPLASTY IN CHILDHOOD: IS HOSPITAL STAY REALLY REDUCED AND LESS ANALGESIA REQUIRED?

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Aim: To compare postoperative hospital stay and pain requirements for paediatric patients who underwent robotic vs open pyeloplasty in a tertiary paediatric surgical centre.
Methods: The charts of all patients (3 - 15 years) with unilateral pelvic-ureteric junction obstruction who underwent pyeloplasty between January 2013 - December 2018 were reviewed retrospectively. Data obtained included demographics, surgical procedure, postoperative analgesia requirements, pain scores and postoperative hospital stay. Fisher-exact and Mann-Whitney-U tests were used for analysis.

Results: 38 patients were included. Twenty children underwent robotic and 18 open pyeloplasty. Post-operatively, intravenous morphine was given in 18/20 patients in the robotic and 17/18 in the open group. Median number of boluses required was 8.5 in each group. Median time of intravenous morphine used was 26.5 hours (0-44) in the robotic vs 37.5 hours (0-97) in the open group. Oral opioids were given only in 5/20 in the robotic and 6/18 patients in the open group. Validated post-operative pain score observations at 6,12 and 24 hours postoperatively showed no statistical difference (table).
Median hospital stay was 2 days (2-10) for robotic vs 3.5 days for open (2-6) pyeloplasty (p=0.04).

Post-operative hours	Median pain score		P-value
	Open	Robotic	
6	3(0-10)	2(0-8)	0.44
12	0.5(0-5)	0(0-8)	0.49
24	2(0-5)	2.5(0-8)	0.3

Conclusions: Hospital stay is shorter after robotic pyeloplasty. Postoperative opioid requirements is reduced in children undergoing robotic pyeloplasty.

10.6 ENDOSCOPIC MANAGEMENT OF SYRINGOCOELE IN CHILDREN

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Aims: Congenital syringocoele is a cystic dilatation of the distal portion of the Cowper's gland ducts. We report our experience with this rare anomaly in 23 children managed over the last 25 years in our centre.

Methods: A retrospective review of children diagnosed with syringocoele between 1994 and 2019 was carried out at our institution. Ultrasonography (US), Cystoscopy +/- micturating cystourethrogram (MCUG) were performed in all cases. Plasma creatinine was noted at presentation. Continence was reviewed in older children, while in the younger children bladder function was assessed non-invasively. Invasive urodynamics was performed only in selected cases.

Results: Twenty three children were identified with congenital syringocoele, with age at presentation ranging from 0-13 years. The diagnosis was made based on cystoscopic findings with or without a micturating cystourethrogram (MCUG). Eleven patients had antenatal findings of relevance, while the remaining twelve presented with urinary tract infections.

All children requiring intervention were treated cystoscopically. Clinical follow-up ranged from 6 to 179 months.

At presentation, five patients had impaired renal function. Two progressed to chronic renal failure, while the other three continued to have impaired renal function. One patient had high bladder baseline pressures and poor emptying.

Conclusion: Syringocoele should be considered as a differential diagnosis in the evaluation of bladder outlet obstruction in males. Early diagnosis and prompt treatment can prevent chronic renal disease and bladder dysfunction.

10.7 SYMPTOMATIC URETERIC STUMP - A SAFE ALTERNATE STRATEGY TO EXCISION

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Aims: Ureteric Stump Syndrome is a recognised but uncommon complication following routine Hemi-Nephrectomy. Laparoscopic excision of the distal ureteric stump (DUS) is a popular treatment option when feasible however carries risks to injury to the residual moiety ureter in a duplex system. We present our strategy adopted in a girl with symptomatic distal ureteric stump with an adherent common sheath to the normal lower moiety ureter.

Method: An 8-year old girl underwent a laparoscopic right hemi-nephrectomy for a dilated upper moiety of a duplex kidney with an ectopic ureter. On further follow up, she developed recurrent and troublesome vaginal discharge which continued for many years . An ultrasound showed a dilated distal ureteric stump. The decision was made to excise it using a minimally invasive technique.

Results: The distal ureteric stump was found to be completely adherent to the normal lower moiety ureter. Dissection was difficult without causing iatrogenic injury to the adjacent ureter. An alternate surgical technique was adopted in this scenario. The proximal end was identified and opened. The stump was then split as far down to the urethra as possible. A JJ stent was subsequently left in the lower moiety ureter.

Conclusions: Laparoscopic excision of the DUS can be challenging in a duplex kidney with a common sheath for the ureters of both moieties. Laying open of the stump on the opposite side of the lower moiety ureter is an alternate technique which is safe and effective.

10.8 DOES HYPERTENSION RESOLVE AFTER NEPHRECTOMY IN CHILDREN WITH DYSPLASTIC/ POOR FUNCTIONING KIDNEYS

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Aim: Uncontrolled hypertension is seen in children with dysplastic kidneys requiring multiple antihypertensives, some also present with hypertensive encephalopathy. These children are referred for nephrectomy for hypertension control. This study looks at pre and post-nephrectomy blood pressure and reviews the effect of this intervention on hypertension. Both pre and post-transplant patients are included.

Materials and methods: Retrospectively data was collected for patients who had undergone nephrectomy for hypertension from 2010 to 2017 October. At least one year of post-transplant follow-up was performed. Data was collected on blood pressure, use of anti-hypertensives and time to resolution of hypertension.

Results: 19 patients included in the study, 29 nephrectomies were performed. 12 patients had resolution of their hypertension within median time of 0.83 months (0 days – 8 months). The remaining patients had a reduction in the number of antihypertensive medications required from 3-4 agents down to a single agent. Hypertension resolved in all patients with simple renal artery stenosis. Those with dysplastic kidneys become normotensive after a longer period post nephrectomy. Those with nephrotic syndrome /steroid induced hypertension or with hypertensive end organ changes, the requirement of medication decreased.

Conclusion: There is a lack of data regarding the efficacy of nephrectomy in hypertension in children. Our study demonstrates resolution of hypertension in more than half of our cohort and decrease in number of antihypertensive medications in remaining. Nephrectomy is a valid treatment option for uncontrolled hypertension secondary to kidney disease.

10.9 DUAL ENDOSCOPIC APPROACH TO PAEDIATRIC BLADDER LESIONS

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Aims: To describe our experience of pneumovesical approach in the treatment of paediatric patients with bladder lesions.

Methods: A retrospective case note analysis of paediatric patients with bladder lesions, in whom a pneumovesical approach was employed intra-operatively between 2016 and 2019.

Results: Three patients required pneumovesical approach to the bladder between 2016 and 2019, with ages ranging 2years 10months – 8years 7months. The approach was used to biopsy one bladder lesion with concerns regarding malignancy, one pedunculated posterior urethral lesion and one removal of bladder stone.
Technique was individualised, but a primary 5mm camera port was placed under direct vision cystoscopically and 3-4mmHg CO_2 allowed good access to the intravesical space. Additional 5mm ports were placed for working instruments or biopince to prevent seeding. The pneumovesical approach gave excellent visualisation throughout the procedures and allowed irrigation and lavage that is generally not possible through a paediatric cystoscope. Sample and lesion removal was also facilitated avoiding the urethral route.
Median operating time was 58 minutes (39-90 range) with median discharge of 23 hours (3 -23 hours and 45 minutes) and no immediate post-operative complications.

Conclusions: The pneumovesical approach is a valuable adjunct to cystoscopy, improving visualisation, allowing effective washout and removal of larger samples than would be possible through paediatric cystoscopes. The technique is a safe and effective alternative to open cystotomy.

10.10 PRELIMINARY EXPERIENCE WITH JJ STENT SELF-REMOVAL AFTER LAPAROSCOPIC PYELOPLASTY

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Introduction: Home removal of bladder catheter by the parents cutting the valve of the balloon is well tolerated, comfortable and reduces health care costs. The use of a string with a stent for self-removal following ureteroscopy is a safe, however during laparoscopic pyeloplasty JJ stents are usually inserted anterograde fashion therefore strings are cut off and children brought back for cystoscopy and stent removal in a few weeks time.

Material and methods: Strings were left attached to JJ stents and were introduced anterograde fashion during laparoscopic pyeloplasty. Balloon catheter was left in the bladder. Patients were asked to cut the valve of the balloon catheter 7 days postoperatively and to pull stent out once string appears in the genitalia if they feel comfortable, otherwise visit the department.

Results: Up to the deadline of abstract submission in 3 out of 4 patients the string presented in the urethral orifice in 3-5 weeks time after bladder catheter self-removal and was pulled out by parents. In one case string did no present and stent was removed via cystoscopy without any complications 10 weeks after surgery.

Conclusion: Strings of JJ stents may be left attached during anterograde stenting at laparoscopic pyeloplasty. This may reduce the need of second hospital visit for cystoscopy and stent removal.

10.11 HOW GOOD IS THE EVIDENCE FOR PAEDIATRIC ROBOTIC SURGERY?

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Aims: Paediatric Foregut surgery is increasingly carried out via a minimally invasive approach, robotic technology has been suggested at improving outcomes further by improving tremor filtration, motion-scaling, dexterity as well as surgeon comfort. Uptake in most paediatric surgical centres around the world is slow resulting in limited consensus on its efficacy. This presentation aims to review the current evidence for the use of robotics within the field of paediatric foregut surgery and consider areas for future research.

Methods: A comprehensive review of the literature between 2000 and 2018 was undertaken through 'PubMed' and 'Web of Science' with searches of terms: 'Robot* AND (Pedia* OR Paedia*)' combined by the 'AND' modifier with words related to foregut surgical operations, in the following search fields: topic, MESH topic and title. Abstracts were screened and literature reviewed with a focus on prospective, comparative and larger studies.

Results: Small scale case series and comparative studies continue to establish the feasibility of Robotic assisted Fundoplication (RF), as well as the feasibility of Heller's cardiomyotomy, duodenojejunostomy and duodenoduodenostomy. There is also evidence of the feasibility of robotic surgery in neonatal oesophageal atresia in animal studies and case reports of its use clinically. However, the only comparative research is in fundoplication, where meta-analysis finds equivalent rates of conversion and complications between the laparoscopic (LF) and robotic approaches. Yet this comparative research in fundoplication is limited by an absence of long term follow up.

Conclusions: There is evidence that a robotic approach is feasible in paediatric foregut surgery. However, there is little evidence to date to demonstrate this has a significant advantage over the standard laparoscopic approach. Future research could focus on long term advantages not only to the patient but also to the surgeon.

10.12 BRONCHOSCOPIC RETRIEVAL OF PAEDIATRIC TRACHEOBRONCHIAL FOREIGN BODY: A CHALLENGE

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Introduction: Foreign body aspiration (FBA) is a common accident in children and represents an important cause of morbidity and mortality. Timely diagnosis and prompt action can help in prevention of fatal consequences. Endoscopic retrieval of tracheobronchial foreign bodies (FB) has revolutionized management of FBA.

Aim: To assess outcomes and challenges in bronchoscopic retrieval of tracheobronchial foreign bodies

Methodology: Patients with suspicion of FBA from January 2017 to May 2019 were evaluated through history, clinical examination, chest radiographs and blood gas analysis. All patients underwent rigid bronchoscopy.

Results: We had a total of 40 patients between 11 months to 9 years of age with 29 boys and 11 girls.
Most common presentation was cough followed by respiratory distress. Choking was present in 23 (57.5%) patients. Clinical examination was suggestive in 29 patients (72.5%) and Radiological features of FBA was present in 31(77.5%) patients.
On Rigid bronchoscopy, FB was found in 36 patients and were retrieved using optical forceps. Organic FB was found 31 patients and non-organic FB in 5 patients. Right main bronchus (47.2%) was most common site of FB lodgment. All patients had an uneventful recovery.

Conclusions: Medical history is the key for diagnosis of FBA. The yield of history, physical examination and radiological studies in diagnosis of FBA is variable but is increased when presentation is delayed and history is doubtful. Thus, if FBA is suspected, bronchoscopy should be performed.

10.13 LAPAROCOPIC LAPAROSCOPIC -ASSISTED TRANSANAL RECTAL PULL-THROUGH FOR HIRSCHSPRUNG'S CHILDREN OLDER THAN 3 YEARS

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Aims: To evaluate outcome of the laparoscopic aided transanal rectal pull-through for the management of Hirschsprung's disease more than 3 years .

Methods: The study on 15 patients more than 3 years coming to pediatric surgical unit of Cairo University Hospital, diagnosed by clinical picture, barium enema and rectal biopsy. We have 4 groups, Group I: 7 cases with rectosigmoid aganglionic segment and well defined funnel. Group II: 3 cases with long aganglionic segment and well defined funnel. Group III: 3 cases with ill defined funnel and positive rectal biopsy, diagnosed as short segment by intraoperative laparoscopic colonic biopsies using fresh frozen histopathologic sections group IV: 2 cases with ill defined funnel and positive rectal biopsy , diagnosed as long segment by the same as group III, in all cases laparoscopic-assisted transanal endorectal pull-through was done, the laparoscopic part for seromuscular biopsy for fresh frozen histopathology, sigmoid and rectal mobilization as much as possible down the peritoneal reflection.
The transanal part included mobilization of the rectal lower by 2 -3 cm, resection till the ganglionic segment, and anastomosis.

Results: We have 5 cases had attacks of enterocolitis, perianal excoriation occurred in 4 cases and no cases of anastomotic leak, 4 cases developed anastomotic strictures.

Conclusion: Laparoscopic-aided transanal pull-through procedure for the management of Hirschsprung's disease more than 3 years is safe procedure, useful.

12.1 LAPAROSCOPIC APPROACH TO TRICHOBEZOARS IN THE PEDIATRIC AGE GROUP

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Aim: This analysis performed a comparison with regards to technical approached and outcomes in the reported laparoscopic techniques for trichobezoar removal in the pediatric age group.

Material and methods: Literature was searched on Pubmed® and KoBSON® database for following terms: 'trichobezoar', 'laparoscopy' and 'children'. PRISMA criteria was followed in selection of articles for the review. Primary end points were laparoscopic technique, type of used instruments, intraoperative complications, comorbidity, age and gander of patients. The data were collected in Excel® sheets and analyzed.

Results: The search revealed 27 articles of which 12 articles met the inclusion criteria. Total number of patients were 14 with the mean age at surgery 9.26 years, vast majority of patients were females n=13 and n=1 male; in n=7 there was Rapunzel syndrome. Complete laparoscopic removal of trichobezoars was performed in n=7 patients, laparoscopic-assisted removal in n=6 and in n=1 simultaneous combined laparoscopic-endoscopic complete removal through enlarged umbilical incision was done. Retrieval bags were used in n=9 patients. Weight of removed trichobezoars varied from 185g to 420g, and the maximal size was 15x15x7cm. Average length of surgery was 224 minutes. There were no complications reported.

Conclusion: Despite the diversity of laparoscopic approaches in children, instrument sizes and types and the learning curve there were no intraoperative complications and follow up periods were uneventful in reported series.

12.2 LAPAROSCOPIC-ASSISTED MANAGEMENT OF PAEDIATRIC INTRA-ABDOMINAL LYMPHATIC MALFORMATIONS - A COMBINED MULTIDISCIPLINARY APPROACH

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Aims: Lymphatic malformations (LMs) are low-flow vascular anomalies with treatment modalities that include conservative, sclerotherapy, oral therapeutic agents and surgical excision. The use of laparoscopy combined with interventional radiology has not previously been described. We report our multidisciplinary (MDT) approach to the management of these lesions.

Methods: All complex paediatric LM referrals are discussed at our vascular MDT that spans across general paediatric surgery, interventional radiology (IR), plastics, orthopaedics, ENT and dermatology. Intra-abdominal LM's undergo an initial USS followed by contrast-enhanced MRI to confirm diagnosis and delineate the nature of the lesion. Our first-line treatment has previously been US-guided sclerotherapy. More recently, we have changed our approach to perform an intra-operative assessment of these lesions combined with IR to confirm the diagnosis and assess their resectability. After laparoscopy is established, an IR guided drain decompresses the lesion which facilitates assessment for excision. If deemed unresectable, the drain is used for sclerotherapy.

Results: Four patients have undergone combined assessment with our IR team in the last 24 months. The age at presentation ranged from 1-7 years. Only one patient had previous sclerotheraphy. Three patients had lymphatic malformations and one patient had an omental cyst. All lesions were completely excised. There have been no complications encountered in these four patients and none have had a recurrence till date.

Conclusions: Primary laparoscopic assessment of an intra-abdominal LM is feasible and enables the confirmation of the diagnosis and assessment of resectability. Morbidity from the use of sclerosant agents and the repeated use of general anaesthesia can also potentially be avoided using this technique.

12.3 LAPAROSCOPIC RETRIEVAL OF INGESTED FOREIGN OBJECTS WITHIN THE PAEDIATRIC POPULATION: A CASE SERIES AND LITERATURE REVIEW

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Aims: Foreign body (FB) ingestion is a common paediatric presentation. As most FB pass harmlessly, conservative management is advocated, and surgical intervention is rarely necessary. However, some caution should be applied as complications are associated with significant morbidity. We present three cases of metallic object ingestion. They initially had serial abdominal radiographs demonstrating FB persistently in the right iliac fossa (RIF).

Case 1: 22month old presented with RIF pain and vomiting, 34days after swallowing an earring (initially managed conservatively). Imaging suggested appendicitis and an uncomplicated laparoscopic appendicectomy was performed, after intraoperative fluoroscopy demonstrated the earring within the appendix. He was discharged on post-operative day (POD) two.

Case 2: A 7year old consumed two magnets but remained asymptomatic. Diagnostic laparoscopy, performed after the FB failed to pass with laxatives, located the magnets within the ascending colon. Intracorporal manipulation into the appendix allowed FB retrieval with an appendicectomy. She was discharged home on POD3

Case 3: This 11year old was asymptomatic after multiple magnet ingestion. He underwent laparoscopy, locating the magnets within the caecum. As FB mobilisation failed, a laparoscopically-assisted technique was utilised retrieving them via the appendix. He was discharged on POD2.

Conclusion: Although rarely reported in literature, consider an intra-appendiceal location if FB is repeatedly imaged with the RIF, as this may cause luminal occlusion and associated symptoms. We suggest laparoscopic retrieval of ingested FB using the appendix, either as a conduit or to remove objects manipulated into the appendiceal lumen, is a safe and replicable technique.

12.4 STEWARDSHIP OF THE USE OF ANTIBIOTICS IN LAPAROSCOPIC APPENDICECTOMY

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Aims: Laparoscopy is reliable in assessing the severity of appendicitis based on its macroscopic appearance.However,the evidence for deciding the duration of administration of the intravenous antibiotics (IVA) is limited.We present our experience focusing on the duration of IVA and the strategy for managing the complications.

Methods: Retrospective review of patients undergoing an emergency appendectomy supervised by senior surgeon (TT) over 11-year period (2007-17) was done.Patient records were reviewed for operative findings, duration of antibiotics and post-operative complications. All patients diagnosed with advanced appendicitis were included. Post-operatively for the initial 3 days all received IVA viz. amoxicillin, metronidazole and gentamycin; further continuation was based on the clinical course. Outcome and complications were analysed with respect to the duration of the IVA required.

Results: 79 patients with advanced appendicitis were included,all underwent laparoscopic appendicectomy; 52 males/27 females; mean age - 9.2 years (2.5-16). Median postoperative hospital stay was 4 days(3-24).38(48%) and 4(5%) patients were able to stop IVA after 3 and 4 days respectively,the rest 37 (47%) required a longer course of IVA.15 were discharged home with oral antibiotics completing a total of 10 days of antibiotics.Complications were 11.4%,wound infection (4)and abscess(5).On statistical analysis,higher incidence of complications in the 5 or more days IVA group was not significant comparing to those who received for shorter duration.

Conclusion: In our experience children operated for advanced appendicitis early review and consideration of short course (minimum of 3 days)IVA based on clinical status is a safe and efficient method to treat with minimal complication rates.

12.5 INITIAL EXPERIENCE OF FLEXDEX ARTICULATING NEEDLE HOLDER: THE FIRST UK PAEDIATRIC CASE

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Aims: Report and evaluation of FlexDex laparoscopic technology in a paediatric case.

Methods: The operating surgeon received training and certification to use FlexDex. Parental informed consent was obtained. After establishing pneumoperitoneum, 5 and 8mm working ports were inserted under direct vision. The duodenal duplication cyst was completely excised leaving the common wall intact. The serosal layer was repaired using the FlexDex needle holder.

Results: A 2-year old boy antenatally diagnosed with an intra-abdominal cyst. He was born at term and remained asymptomatic. Postnatal imaging suggested a possible duodenal duplication cyst. The excision procedure was performed by a surgeon with laparoscopic and robotic experience. The procedure was uneventful and there were no post-operative complications. The patient made a good recovery and was discharged home on day 5 post surgery. The histopathology confirmed the diagnosis. At 3 month follow up, he was growing well, tolerating oral diet and passing stools without problems. The surgical sites healed well.

Conclusions: This was the first paediatric surgical case performed using the FlexDex needle holder in our department and in the UK. Few learning points are follows:
1. FlexDex laparoscopic technology allows a superior range of movements when compared to conventional laparoscopic needle holders.

2. FlexDex needle holder appears to be less intuitive compared to the robotic surgical system. However, its learning curve could be steeper with comprehensive pre-use dry-lab practice.

3. FlexDex technology will allow access to an articulated needle holder without the cost of robotic surgery and offers the benefit of tactile feedback during suturing.

12.6 MINIMAL ACCESS ON THE CHEAP

Ahmed Barakat, Naved Alizai. Leeds Teaching Hospitals

Aim: Fowler-Stephens staged orchidopexy is a commonly performed procedure for intra-abdominal testis. It usually involves 3 ports and the vessels are ligated or clipped. We present (with video) a simple, quick, cheap, ergonomic and effective technique which does not even require an assistant.

Method: After an EUA and confirmation of impalpable testis a 5mm reusable camera port with blunt trocar is introduced through the umbilicus. If diagnostic laparoscopy does not suggest vas and vessels entering a closed ring a 3mm reusable port with sharp trocar is introduced just below the level of the umbilicus, at the lateral clavicular line, on the opposite side to the UDT. Table positioning and Maryland forceps are used to move the bowel loops away from the operating site. Using the scissors windows are created on each side of the testicular vessels, making sure these are well away from the testis. The peritoneal layer in front of the vessels is lifted and cut. Maryland forceps are used to lift the vessels from the abdominal wall before coagulation. Care is taken to keep the coagulation away from testicular tissue. Scissors are used to divide the vessels and separate the cut ends by teasing. The surgeon holds the camera in one hand while operating with the other.

Results: This is a single surgeon experience over the last 15yrs. All patients performed by him underwent the above technique. Out of the over 50 cases one testis is one fourth the size of the contralateral side; and all others have a good outcome.

Conclusion: This is a simple, easy, cheap and safe technique, which does not require an assistant or the use of clips or sutures. The pain experienced by the patient is from two sites rather than conventional three port sites.