

**CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS
ASSOCIATION CANADIENNE de
CHIRURGIE PÉDIATRIQUE**

41st- 41iere

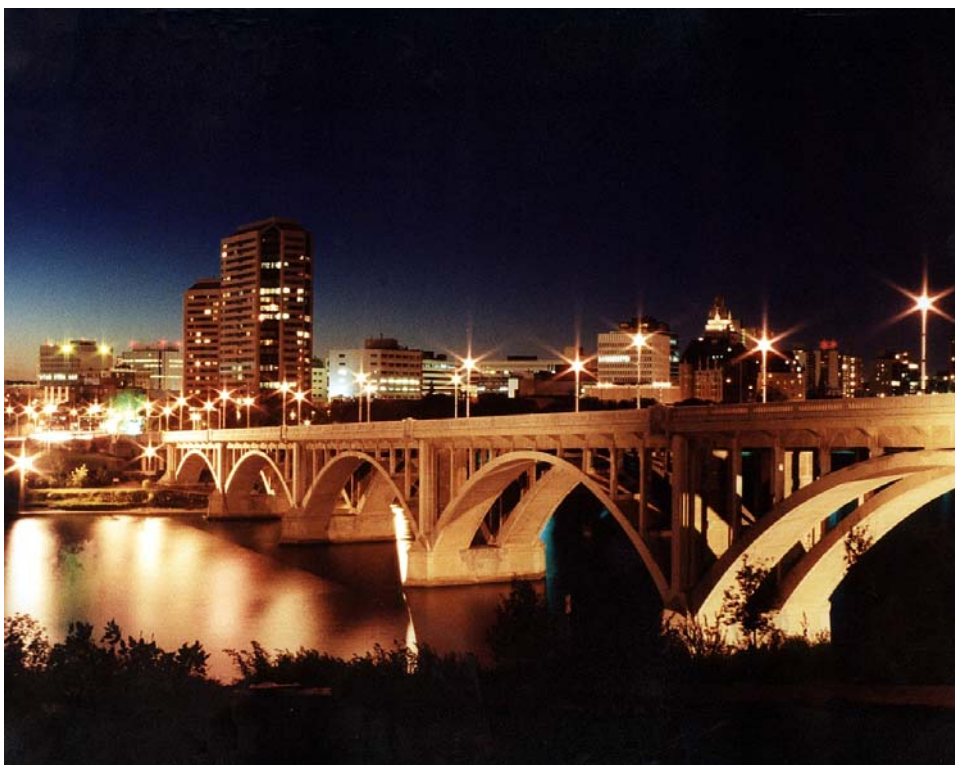


**Annual Meeting -Réunion Annuelle
October 1 – 4 Octobre
2009**

**Halifax, Nova Scotia, Nouvelle-Écosse
CANADA**

CAPS 2010 Annual meeting
ACCP 2010 Réunion Annuelle

Saskatoon, Saskatchewan
September 23-25 Septembre



PLAN TO JOIN US!
Joignez-vous à nous!

**CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS
ASSOCIATION CANADIENNE de
CHIRURGIE PÉDIATRIQUE**

**41st Annual Meeting
41 iere Réunion Annuelle**

**October 1 – 4 Octobre
2009**

**Halifax Marriott Harbourfront Hotel
Halifax, Nova Scotia, Nouvelle-Écosse
CANADA**





The IWK Health Centre provides quality care to women, children, youth and families in the Maritime provinces and beyond.

This year the IWK is marking its Centennial: on December 20, 1909, the Halifax Children's Hospital first opened its doors to children and families of the Maritimes. The Children's was replaced by the Izaak Walton Killam Hospital in 1970, while the Salvation Army Grace Maternity Hospital opened in 1922 and was rebuilt and linked with the IWK in 1992. The Grace, IWK and Children's were the historical forerunners of today's IWK Health Centre.

Additions, renovations and new buildings; thousands of patients, volunteers, health professionals, staff, donors and students; revolutions in medicine, care, research and education—a lot has certainly changed over one hundred years at the IWK Health Centre and its predecessors. *What has remained constant is our commitment to excellence at all levels of teaching and care.*

Throughout 2009, the IWK is celebrating its vibrant history and tradition of excellence, while looking forward to how it will grow and excel in the next one hundred years.

The IWK community is very pleased to welcome the Canadian Association of Paediatric Surgeons and its members to Halifax and the IWK Health Centre. Thank you for helping to make this milestone year one to remember!



The Royal College of Physicians and Surgeons of Canada
Le Collège royal des médecins et chirurgiens du Canada
774 promenade Echo Drive, Ottawa, Canada K1S 5N8

**Dalhousie University Continuing Medical Education
designates this continuing medical education activity for up
to 17.25 credit hours as an accredited group learning Section
1 activity as defined by the Maintenance of Certification
program of The Royal College of Physicians and Surgeons of
Canada**

**Cette réunion est accréditée aux fins du maintien de la compétence tel que
défini par le Collège Royal des Médecins et Chirurgiens du Canada**

In keeping with CMA Guidelines, program content and selection of speakers are the responsibility of the planning committee. Support is directed toward the costs of the course and not to individual speakers. All speakers have indicated no involvement with industry that may be perceived as potentially influencing the presentation of the educational material.

Educational Objectives

The Annual meeting of the Canadian Association of Paediatric Surgeons is intended to provide 3 days of comprehensive continuing education in the field of pediatric general and thoracic surgery. Specifically, the objectives are to:

- Present current updates on advances in clinical pediatric surgery
- Present current updates on advances in the pathophysiology of pediatric surgical disorders
- Provide for group discussion on controversial issues in pediatric general and thoracic surgery through:
 - Discussion of presented scientific papers
 - Interactive panel discussion on the management of clinical pediatric problems

Over the three days of the meeting, the breadth of pediatric general and thoracic surgery topics will be covered through presentation of original works by trainees, professional colleagues and allied health care workers involved in the field. The works will acquaint participants with the latest clinical and basic science research findings and trends influencing the clinical practice of pediatric surgery, as well as acquaint participants with interesting pediatric surgical entities. Controversial topics will invite participatory discussion by the delegates.

A panel of 6 members of the CAPS Program Committee has chosen the abstracts presented, based on quality of abstracts submitted and reflecting what is commonly relevant to the practice of pediatric surgery. Input for subsequent meetings and how to improve this one will be solicited from the delegates at the conclusion of the meeting.

SCIENTIFIC AND SOCIAL PROGRAM PROGRAMME SCIENTIFIQUE ET SOCIAL

**Wednesday, September 30, 2009
Mercredi, Septembre 30, 2009**

Start Time	End Time	Function	Room	Floor
09:00	17:00	Council meeting with breakfast, lunch, breaks	Tupper Room	Ground Floor
17:00	18:00	CAPSNeT meeting	Tupper Room	Ground Floor

**Thursday, October 1, 2009
Jeudi, Octobre 1, 2009**

Start Time	End Time	Function	Room	Floor
07:00	09:00	RCPSC committee meeting with Continental Breakfast	Tupper Room	Ground Floor
08:00	17:00	Speaker Ready Room	Atlantic Suite	Second Floor
09:00	17:00	Registration	Acadia Foyer	Ground Floor
09:00	10:30	Publication committee meeting with Continental Breakfast	Tupper Room	Ground Floor
10:30	12:00	Ethics committee meeting (coffee, tea)	Tupper Room	Ground Floor
13:00	16:45	Pediatric General Surgery Training Education Session with afternoon break	Acadia ABC	Ground Floor
18:30	23:00	Welcome Reception	Maritime Museum of the Atlantic	

Friday, October 2, 2009 Vendredi, Octobre 2, 2009

Start Time	End Time	Function	Room	Floor
06:30	17:00	Registration	Nova Scotia CD Foyer	Second Floor
06:00		Setup for poster session	Nova Scotia B	Second Floor
06:45	07:45	Continental Breakfast	Nova Scotia CD Foyer	Second Floor
07:45	07:55	President's Welcome	Nova Scotia CD	Second Floor
07:00	17:00	Exhibits	Nova Scotia CD Foyer	Second Floor
07:00	17:00	Speaker Ready Room	Maritime Suite	Second Floor
08:00	09:38	Scientific Session I	Nova Scotia CD	Second Floor
09:38	10:00	Coffee Break	Nova Scotia CD Foyer	Second Floor
10:00	11:12	Scientific Session II	Nova Scotia CD	Second Floor
11:15	11:25	Stretching Break	Nova Scotia CD	Second Floor
11:25	12:20	JPS/Fred MacLeod Lecture : "On Conduits of Life" - Dr. Michael Gauderer	Nova Scotia CD	Second Floor
12:20	12:50	Box Lunch	Nova Scotia Foyer	Second Floor
12:30	13:30	2 minutes-2 slides / videos	Nova Scotia CD	Second Floor
13:45	14:00	CAPS President Talk: Pediatric Surgical Society Presidency: Where is the Instruction Manual. - Dr. Geoffrey Blair	Nova Scotia CD	Second Floor
14:00	14:15	CAPSNet update	Nova Scotia CD	Second Floor
14:15	14:30	Consensus guidelines on management of cryptorchidism - Sarah Jones	Nova Scotia CD	Second Floor
14:30	15:30	Scientific Session III	Nova Scotia CD	Second Floor
15:30	15:50	Afternoon Break	Nova Scotia CD Foyer	Second Floor
15:50	17:15	Scientific Session IV: Posters Display with walk-about presentations	Nova Scotia B	Second Floor

Saturday, October 3, 2009 Samedi, Octobre 3, 2009

Start Time	End Time	Function	Room	Floor
06:30	07:00	Breakfast buffet for annual business meeting	44 North Private Dining Room	Ground Floor
07:00	08:15	Annual Business Meeting By-Laws Meeting	44 North Private Dining Room	Ground Floor
07:00	08:15	Continental Breakfast for Non-Members	Nova Scotia CD Foyer	Ground Floor
07:00	15:00	Exhibits	Nova Scotia CD Foyer	Ground Floor
07:00	15:00	Speaker Ready Room	Maritime Suite	Second Floor
08:00	14:00	Registration	Nova Scotia CD Foyer	Ground Floor
08:30	10:06	Scientific Session V	Nova Scotia CD	Ground Floor
10:06	10:26	Coffee Break	Nova Scotia CD Foyer	Ground Floor
10:26	10:40	CAPS Travelling resident talk Mohammed Albaqami	Nova Scotia CD	Ground Floor
10:40	12:11	Scientific Session VI	Nova Scotia CD	Ground Floor
12:11	12:40	Buffet Sandwich Lunch	Nova Scotia CD	Ground Floor
12:30	13:00	Presentation :The Halifax Explosion Drs Alex Gillis and Danny Little	Nova Scotia CD	Ground Floor
13:00	15:00	Panel Debate & Discussion: Bariatric Surgery for Youth Drs. Mary Brandt, Guy Brisseau, Elizabeth Cummings, Christopher Jamieson	Nova Scotia CD	Ground Floor
15:00	15:05	President's Closing Remarks – Geoff Blair	Nova Scotia CD	Ground Floor
18:00	23:00	Presidential Reception and Dinner	Pier 21 - Canada's Immigration Museum	
END OF MEETING SEE YOU NEXT YEAR IN SASKATOON				

PRESIDENT'S WELCOME

CAPS is thrilled to have our Annual Meeting this year in Halifax, Nova Scotia and I extend to all of you a hearty East Coast Canadian welcome.

Natalie Yanchar has been doing double-duty this year both planning the meeting program and, along with Mike Giacomantonio and Guy Brisseau, planning the social events in special Maritime venues which are sure to be fun and a chance for all of us to catch up with old and new CAPS friends. Soak up the historic and cheerful Maritime soul of Halifax!

The program is sure to be excellent- and this year we have something new on the first day- A Paediatric Surgery Training Forum- "from Junior Resident to Faculty". Pramod Puligandla and Ted Gerstle have a vibrant afternoon planned with opportunities to exchange ideas on the trajectory from dreaming about becoming a paediatric surgeon to those first years as staff.

Our special guest this year is our friend, Michael Gauderer, from Greenville, South Carolina, who will be sharing his thoughts "On Conduits of Life" as our 2009 JPS/Fred MacLeod lecturer. Michael will no doubt bring to our meeting his unique creative spirit, challenging ideas and his wonderful wit.

Our meeting and our association simply would not exist if it weren't for the tireless enthusiasm and toil of many people and I thank you all; but two people especially deserve mention here. Juan Bass holds us all together as our faithful Secretary-Treasurer and Arlene Ein, our patient and ever-so-skilled meeting planner, is the veritable 'engine' that drives CAPS meetings to year after year success. Thanks, Arlene and Juan, for all you do!

The Canadian Association of Paediatric Surgeons is dedicated to improving the health of children. You will hear me say this at the meeting, but I shall say it now in print as well. It truly has been a great honour to serve CAPS for the past two years as your President. I am proud to be a Paediatric Surgeon. I am proud to be a Canadian. I am proud of what CAPS is now and what it will be in the future. *L'avenir est prometteur pour les enfants du Canada.*



Geoffrey K. Blair,
President
Canadian Association of Paediatric Surgeons

MOT DE BIENVENUE DU PRÉSIDENT

CAPS est heureuse de tenir son congrès annuel à Halifax cette année et je vous souhaite une chaleureuse bienvenue sur la côte Est du Canada.

Nathalie Yanchar a cumulé les tâches cette année d'abord en planifiant le programme du congrès et, avec l'aide de ses collègues, Mark Giacomantonio et Guy Brisseau, a préparé des activités sociales dans l'atmosphère spéciale des Maritimes pour notre plaisir et pour rencontrer les anciens et les nouveaux amis de CAPS. Laissez-vous envahir par l'esprit historique et enjoué des Maritimes et de Halifax!

Le programme sera excellent et cette année nous avons une nouvelle activité durant notre première journée – Un forum sur la Formation en Chirurgie Pédiatrique – du résident junior au patron. Pramod Puliglanda et Ted Gerstle ont planifié un après-midi dynamique avec l'opportunité d'échanger sur le chemin qui mène du rêve de devenir un chirurgien pédiatrique aux premières années de pratique de notre spécialité.

Notre ami, Michael Gauderer, de Greenville, Caroline du Sud est notre invité spécial cette année. Il nous fera part de ses idées sur «Les canalisations de vie» en tant que conférencier JPS/Fred MacLeod pour 2009. Michael saura sans doute nous apporter son imagination créative particulière, ses idées stimulantes et son merveilleux esprit.

Notre association et notre congrès n'existeraient pas si ce n'était de l'enthousiasme et du travail inlassable de plusieurs personnes et je remercie chacune d'elles; mais deux personnes méritent une mention spéciale : Juan Bass garantit la cohésion de l'association et Arlene Ein, notre planificatrice de congrès, patiente et talentueuse, est la véritable « locomotive » qui nous assure du succès du congrès année après année. Merci, Arlene et Juan, pour tout ce que vous faites pour nous.

L'Association Canadienne de Chirurgie Pédiatrique se consacre à l'amélioration de la santé des enfants. Vous allez me l'entendre dire souvent au cours de ce congrès mais je vais aussi le dire en le publiant. J'ai été très honoré de servir comme président de CAPS pour les derniers deux ans. Je suis fier d'être un Chirurgien Pédiatrique. Je suis fier d'être Canadien. Je suis fier de CAPS aujourd'hui et de ce qu'elle deviendra dans l'avenir. The future is promising for the children of Canada.


Geoffrey Blair
Président,

Association Canadienne de Chirurgie Pédiatrique

ABOUT THE CANADIAN ASSOCIATION

OF PAEDIATRIC SURGEONS



The Canadian Association of Paediatric Surgeons was granted its charter in 1967. Its goal is to improve the surgical care of infants and children in Canada. Its areas of interest include all aspects of general and thoracic pediatric surgery with recognition of its unique responsibility to infants born with congenital anomalies and children with malignancies. While its responsibility to pediatric trauma is not unique, it assumes a pivotal role in issues related to pediatric trauma.

The Canadian Association of Paediatric Surgeons presents an opportunity, particularly through its annual meetings, to share information concerning diagnosis, treatment, and research with regards to its areas of interest. In addition, it assumes responsibility to participate in the education of not only its members, but other members of the community interested in and involved in related aspects of pediatric care.

EDUCATION FUND: To help achieve its responsibility to education for issues related to pediatric surgery, the Association has an education fund. This fund was established and continues to exist through the generosity of donations from individuals and groups, both medical and non-medical, interested in the surgical care of children. The Association solicits annual donations to the fund to maintain an adequate working capital to support the annual education programming endorsed by the CAPS membership. This fund is registered with the federal government and all contributions are fully tax-deductible. It is audited annually.

Contributions to educational fund can be made online at www.caps.ca or send cheque to:

Juan Bass
CAPS Secretary-Treasurer
Children's Hospital of Eastern Ontario
401 Smyth Rd
Ottawa, Ontario. K1H 8L1
Email: bass.caps@gmail.com
Telephone: (613) 737-7600 ext 2799
Fax: (613) 738-4849

AU SUJET DE L'ASSOCIATION CANADIENNE DE CHIRURGIE PÉDIATRIQUE



L'Association canadienne de chirurgie pédiatrique a reçu sa charte en 1967. Son objectif est d'améliorer les soins chirurgicaux aux nouveau-nés et aux enfants du Canada. Elle s'intéresse à tous les aspects de la chirurgie pédiatrique générale et thoracique tout en reconnaissant sa responsabilité unique à l'égard des bébés nés avec des anomalies congénitales et des enfants atteints de tumeurs malignes. Bien que sa responsabilité en matière de traumatismes pédiatriques ne soit pas unique, elle exerce un rôle crucial dans les questions relatives à ces traumatismes.

L'Association canadienne de chirurgie pédiatrique offre la possibilité, particulièrement dans le cadre de son assemblée générale annuelle, d'échanger des informations concernant le diagnostic, le traitement et la recherche liés à ses domaines de travail. De plus, elle assume la responsabilité de participer à l'éducation non seulement de ses propres membres, mais aussi des autres membres de la communauté qui s'intéressent à des aspects apparentés des soins pédiatriques et qui travaillent dans ces domaines.

LE FONDS D'ÉDUCATION : Pour l'aider à remplir ses engagements en matière d'éducation sur les sujets relatifs à la chirurgie pédiatrique, l'association a créé un fonds pour l'éducation. Ce fonds a été établi et continue d'exister grâce à la générosité des individus et des associations, de nature médicale ou autre, intéressées par les soins chirurgicaux aux enfants. L'association sollicite annuellement des dons en faveur de son fonds afin de maintenir un fonds de roulement suffisant pour soutenir les programmes d'éducation approuvés par les membres de l'ACCP. Ce fonds est enregistré auprès du gouvernement fédéral et toutes les contributions sont pleinement déductibles d'impôts. Le fonds fait l'objet d'une vérification comptable annuelle.

Les dons pour le fonds d'éducation peuvent être envoyés par courriel à www.caps.ca ou adressés par chèque à :

Juan Bass
Secrétaire-trésorier de l'ACCP
Children's Hospital of Eastern Ontario
401 Smyth Rd
Ottawa, Ontario. K1H 8L1
Email: bass.caps@gmail.com
Telephone: (613) 737-7600 ext 2799
Fax: (613) 738-4849

PRESIDENTS - PRÉSIDENTS

1967-1973	Harvey Beardmore*	Montreal
1973-1975	Colin Ferguson*	Winnipeg
1975-1977	Jim Simpson*	Toronto
1977-1979	Sam Kling*	Edmonton
1979-1981	Pierre-Paul Collin	Montreal
1981-1983	Barry Shandling	Toronto
1983-1985	Gordon Cameron	Hamilton
1985-1987	Stanley Mercer	Ottawa
1987-1989	Alex Gillis	Halifax
1989-1991	Jacques C. Ducharme	Montreal
1991-1993	Sigmund H. Ein	Toronto
1993-1995	Angus Juckes	Regina
1995-1997	Jean G. Desjardins	Montreal
1997-1999	David P. Girvan	London
1999-2001	Ray Postuma	Winnipeg
2001-2003	Mike Giacomantonio	Halifax
2003-2005	Salam Yazbeck	Montreal
2005-2007	Nathan Wiseman	Winnipeg
2007-2009	Geoffrey Blair	Vancouver

* deceased/ décédé

SECRETARY-TREASURERS SECRÉTAIRES -TRÉSORIER

1967-1974	Barry Shandling	Toronto
1974-1978	Gordon Cameron	Hamilton
1978-1983	Frank M. Guttman	Montreal
1983-1989	David Girvan	London
1989-1995	Ray Postuma	Winnipeg
1995-2002	Salam Yazbeck	Montreal
2002-2006	Peter G. Fitzgerald	Hamilton
2006-	Juan Bass	Ottawa

FOUNDING MEMBERS

MEMBRES FONDATEURS

ALLEN	Michael
ASHMORE	Phillip
BEARDMORE*	Harvey
CAMERON	Gordon
COLLIN	Pierre-Paul
DESJARDINS	Jean G.
DUCHARME	Jacques C.
DUVAL*	Frederick
FALLIS	James
FERGUSON*	Colin
GILLIS	Alex
GUTTMAN	Frank M.
JUCKES	Angus
KARN*	Gordon
KENNEDY	Richard
KLIMAN	Murray
KLING*	Samuel
MARSHALL	Donald
MARSHALL*	Russell
MERCER	Stanley
MURPHY	David
OWEN*	Herbert
SHANDLING	Barry
SHRAGOVITCH*	Israël
SIMPSON*	James
STEPHENS*	Clinton
THOMSON*	Stuart
TURCOT*	Jacques

* deceased / décédé

1st ANNUAL MEETING was held January 22, 1969 in VANCOUVER

Le premier CONGRÈS ANNUEL eut lieu le 22 janvier, 1969 à VANCOUVER

**THE COAT OF ARMS OF
THE CANADIAN ASSOCIATION OF
PAEDIATRIC SURGEONS**

**LES ARMOIRIES DE
L'ASSOCIATION CANADIENNE DE
CHIRURGIE PÉDIATRIQUE**



Heraldic Blazon

Per pale gules and purpure, dexter a scalpel erect entwined by a serpent, sinister a child standing, all argent.

Crest: On the three maple leaves slipped gules and blacked purpure, the date 1967.

Motto: "Je le pensay, Dieu le guérit".

Description

The red and purple of the arms are also the colours of the Royal College of Physicians and Surgeons of Canada and represent the blood met in surgery - arterial and venous. The scalpel with the healing serpent of Aesculapius, and the figure of a well child combine to symbolize the practice of Paediatric Surgery.

The crest is the Canadian maple leaf and the founding date of the Association (1967).

The Motto is a quotation from Ambroise Pare, a father of modern surgery. The sixteenth-century French translates, "I treated him, God cured him".

Le Blason

Au gauche, un bistouri droit entouré d'un serpent alors qu'à droite se tient un enfant, tout argent.

Au sommet se trouvent trois feuilles d'érable ainsi que la date 1967.

Devise: "Je le pensay, Dieu le guérit".

Description

Le rouge et le violet des armoiries sont les couleurs du Collège Royal des Médecins et Chirurgiens du Canada et représentent le sang artériel et veineux vu au cours de la chirurgie. L'association du bistouri avec le serpent guérisseur d'Esculape ainsi qu'avec l'image d'un enfant en bonne santé symbolise la pratique de la chirurgie pédiatrique.

La couronne du blason est la feuille d'érable du Canada et la date de fondation de notre association (1967).

La devise est une citation d'Ambroise Paré, père de la chirurgie moderne.

GUEST LECTURER CONFERENCIER INVITE



**The Canadian Association of Paediatric Surgeons
L'Association Canadienne de Chirurgie Pédiatrique**

is pleased to invite est fière d'inviter

Dr. MICHAEL GAUDERER

To give the JPS / Fred MacLeod Annual Lecture.
À donner la conférence annuelle JPS/ Fred MacLeod
" On Conduits of Life "

The visit by Dr. Gauderer La visite du Dr. Gauderer

is made possible with the financial support of
est rendue possible grâce à la générosité de

Elsevier

Dr. Michael Gauderer

Dr. Gauderer is Professor of Surgery and Pediatrics, University of South Carolina School of Medicine, and Adjunct Professor of Bioengineering at Clemson University. He practices pediatric surgery at the Children's Hospital of the Greenville Hospital System University Medical Center in Greenville, South Carolina.

A native of Germany, he received his MD from the Federal University of Rio de Janeiro in 1968. He completed his general surgical residency at the Graduate Hospital of the University of Pennsylvania and his pediatric surgical training in Bremen, Germany under the direction of Professor Fritz Rehbein and at the Children's Hospital of Philadelphia with Dr. C. Everett Koop.

In 1978 he joined Rainbow Babies and Children's Hospital, Case Western Reserve University in Cleveland, Ohio, achieving the rank of professor with tenure and becoming Chief of the Division of Pediatric Surgery in 1986. He joined the Children's Hospital in Greenville in 1995 to head the division of pediatric surgery.

Dr. Gauderer's principal interests are in clinical pediatric surgery, notably neonatal pathology, enteral and parenteral access, stomas, and chest wall defects. He has authored 129 peer reviewed articles, 30 book chapters, and multiple other scientific contributions. He has developed 31 original techniques, most notably the Percutaneous Endoscopic Gastrostomy (PEG) and several medical devices, including the Gastrostomy Button.

In his teachings, he encourages the search for simple and practical solutions for everyday clinical challenges.

RESIDENTS' PAPERS

A panel of members from the Publication Committee adjudicates the papers presented by Surgical Residents. There are two award categories: the best Clinical paper and the best Experimental paper (Dr. Maria DiLorenzo's prize). Prizes are selected from both categories if warranted.

PRÉSENTATIONS DES RÉSIDENTS

Les présentations faites par les résidents en chirurgie sont jugées par un jury constitué des membres du Comité de Publication. Il y a deux catégories: celui du meilleur travail clinique et celui du meilleur travail expérimental (Prix Maria DiLorenzo).

WINNERS OF THE 2008 RESIDENT BEST PAPER AND POSTER AWARDS PRIX POUR LES MEILLEURES COMMUNICATIONS DES RÉSIDENTS 2008

BEST CLINICAL RESEARCH PAPER MEILLEUR TRAVAIL CLINIQUE

1st prize - Dr. Ivan Diamond - one year subscription to JPS for the paper "Pediatric blunt and penetrating trauma death in Ontario: a population based study"

2nd prize - Dr. Shimaie Fitzgibbons - one year subscription to Seminars in Pediatric Surgery for the paper "Relationship between serum citrulline levels and progression to TPN"

3rd prize - Dr. Jeremy Gruska - one year subscription to Seminars in Pediatric Surgery for the paper "Spindle epithelial tumor with thymus-like elements: a national case series and a review of the literature"

Honorable mention - Dr. V. Kandice Mah - Grosfeld's Pediatric Surgery
Textbook for the paper "Whatever happened to the hidden mortality in congenital
diaphragmatic hernia

BEST POSTER- MEILLEURE AFFICHE

Dr. Johanna Askegard-Giesmann - Grosfeld's Pediatric Surgery Textbook for the
poster "Minimally invasive Heller Myotomy in children: safe and effective"

**THE CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS WOULD LIKE
TO ACKNOWLEDGE THE FINANCIAL SUPPORT
OF THE FOLLOWING SPONSORS**

**L'ASSOCIATION CANADIENNE DE CHIRURGIE PÉDIATRIQUE REMERCIE
LES COMMANDITAIRES POUR
LEUR CONTRIBUTION**

Sponsor of the JPS/Fred Macleod Lecture and Resident prizes
Elsevier

Exhibitors:

Ballard Medical Products, Kimberly Clark, Canada
Stryker Endoscopy

PROGRAM SCHEDULE

PROGRAMME DÉTAILLÉ



ABBREVIATIONS

- O original paper- présentation originale
R resident paper- présentation par résident
C/T case/technique report- présentation de cas
ou de technique
P poster presentation- présentation d'affiche
- O,R, P Adjudicated- permis
C/T Not adjudicated- non permis

THURSDAY, OCTOBER 1

Pediatric General Surgery Training: From Junior Resident to Faculty

Co-chairs : P. Puligandla & T. Gerstle

Objectives of Session:

- To inform surgical trainees of ways to improve their chances of securing a training position in pediatric surgery through the North American Pediatric Surgery Match.
- To expose surgical trainees to the role(s) of the 1st and 2nd year pediatric surgery trainees.
- To explore the options for securing a position in pediatric surgery as a faculty member

13:00-13:15	Introduction and overview	P. Puligandla & T. Gerstle
13:15-13:45	Optimizing your Adult General Surgery Training to get a Pediatric Surgery Training Position in the future	T. Gerstle, P. Puligandla, G. Brisseau
13:45-14:15	North American Pediatric Surgery Match: "The how to guide"	T. Gerstle, P. Puligandla, G. Brisseau
14:15-14:45	Perspectives on the 1st Year of Pediatric Surgery Training	R. Baird
14:45-15:00	Coffee Break	
15:00-15:30	Perspective on the 2nd Year of Pediatric Surgery Training (and getting a job!)	C. Kelleher
15:30-16:00	Life as a New Faculty Member	M. Brindle
16:00-16:30	Round Table Discussion	All faculty & participants
16:30-16:45	Summary & Course Evaluations	P. Puligandla & T. Gerstle

18:30-23:00	Welcome Reception – Maritime Museum of the Atlantic	
-------------	---	--

FRIDAY, OCTOBER 2

07:45-07:55	Presidents' Welcome	G. Blair
-------------	---------------------	----------

08:00-09:38	Scientific Session # 1: Oral Presentations Moderators : Michael Giacomantonio & Guy Brisseau
-------------	---

1	O R	08:00-08:07	<p>The Effect Of In Vitro Tracheal Occlusion On Branching Morphogenesis In Fetal Lung Explants From The Rat Nitrofen CDH Model <u>Jeremy Grushka</u>¹, Saleh Al-Abbad¹, Robert Baird¹, Pramod Puligandla¹, Feige Kaplan², Jean-Martin Laberge¹ ¹ Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University, Montreal, Quebec, Canada ² Department of Human Genetics, Montreal Children's Hospital Research Institute, McGill University, Montreal, Quebec, Canada</p>
2	O	08:12-08:19	<p>Parafollicular C-cells of the thyroid are decreased in Congenital Diaphragmatic Hernia. Experimental and human studies <u>Ana L Luis</u>¹, Federica Pederiva¹, Elena Ruiz², Jose I Rodriguez², Leopoldo Martinez¹, Juan A Tovar¹ Departments of Pediatric Surgery¹ and Pathology², Hospital Universitario La Paz, Madrid, Spain</p>
3	O R	08:24-08:31	<p>Bedside Lung Mechanics Identifies the Ability to Survive in Hypoplastic Lung Disease <u>Abdul Haleem</u>, M.D.*, Muhammad T Zia, MD, Ravi Mishra, M.D., Lance A. Parton, Edmund F. La Gamma, and Gustavo Stringel. Maria Fareri Children's Hospital. New York Medical College</p>
4	O R	08:36-08:43	<p>Thoracoscopy Repair In Congenital Diaphragmatic Hernia: Reconstruction Of The</p>

Dome!

Richard Keijzer, Cees P. van de Ven, John Vlot, Pim Sloots, Gerard C. Madern
 Dick Tibboel, Klaas M.A. Bax
 Department of Pediatric Surgery, ErasmusMC-Sophia, Rotterdam,
 The Netherlands

- 5 O R 08:48-08:55 **Abnormal Neuroimaging and Neurodevelopmental Findings in a Cohort of Antenatally Diagnosed Congenital Diaphragmatic Hernia Survivors**
Sarah Tracy, BA ¹ Judy Estroff, MD ² Clarissa Valim, MD, ScD ^{1,3}
Sandra Friedman, MD, MPH ⁴ Catherine Chen, MD, MPH ¹
¹ Department of Surgery, Children's Hospital Boston
² Department of Radiology, Advanced Fetal Care Center, Children's Hospital Boston
³ Division of Biostatistics, Children's Hospital Boston
⁴ Developmental Medicine Center, Children's Hospital Boston
- 6 T 09:00-09:04 **Transhiatal laparoscopic esophagectomy for esophageal replacement in children**
Olivier Reinberg, Sabine Vasseur Maurer, Anthony de Buys-Roessing
 Department of Pediatric Surgery, University Hospital Center and University of Lausanne, Switzerland
- 7 O R 09:07-09:14 **Evaluation of an anti-reflux procedure for colonic interposition in pediatric esophageal replacements**
Sabine Vasseur Maurer, Vanina Estremadoyro, Olivier Reinberg
 Department of Pediatric Surgery, University Hospital Center and University of Lausanne, Switzerland
- 8 T 09:19-09:23 **Thoracoscopic Esophageal Elongation Post Cervical Esophogostomy: A Better Alternative For Esophageal Replacement**
Aayed R. Alqahtani, FRCSC, FACS
 King Saud University, Riyadh, Saudi Arabia
- 9 O 09:26-09:33 **Esophagus tissue engineering: In-situ generation of vascularized esophageal conduits using the ovine model**
Amulya K. Saxena, Piotr Soltysiak, Herwig Ainoedhofer and Michael E. Höllwarth
 Department of Pediatric and Adolescent Surgery, Medical University of Graz, Austria

09:38-10:00	Coffee Break
-------------	--------------

10:00-11:12	Scientific Session # 2: Oral Presentations Moderators : Baird Mallory & Charles E. Bagwell
-------------	---

- 10 O R 10:00-10:07 **Does pre-biopsy contrast enema delay the diagnosis of Long Segment Hirschsprung's Disease?**
Chen J ¹, Jamieson DH ², Skarsgard ED ¹
¹ Departments of Surgery and
² Radiology, British Columbia Children's Hospital, Vancouver, British Columbia, Canada
- 11 O 10:12-10:19 **A Prospective Study of Effectiveness of Short versus Long Roux-Y Limb in Roux-Y Hepatojejunostomy for Children with Congenital Biliary Dilatation**

- 12 OR 10:24-10:31 Mei Diao, Long Li, Shu-li Liu, Hui Ye
Department of Paediatric Surgery, Capital Institute of Paediatrics, Beijing, China
Long-term outcome following partial external biliary diversion for progressive familial intrahepatic cholestasis
Ihab Halaweish¹, Walter J. Chwals²
¹Case Western Reserve School of Medicine,
²Department of Surgery, Case Western Reserve School of Medicine, Rainbow Babies and Children's Hospital
- 13 OR 10:36-10:43 Is The Use Of Parenteral Omega-3 Lipid Emulsions In Surgical Neonates With Mild Parenteral Nutrition Associated Cholestasis (PNAC) Justified?
Ahmed Nasr, Ivan R. Diamond, Nicole T. de Silva, Paul W. Wales
Division of General Surgery-Group for Improvement of Intestinal Function and Treatment (GIFT)
The Hospital for Sick Children, Toronto
- 14 OR 10:48-10:55 Does the Colon Play a Role in Intestinal Adaptation in Infants with Short Bowel Syndrome? A Multiple Variable Analysis
Ivan R Diamond, Marie-Chantal Struijs, Nicole T de Silva, Paul W Wales
Group for Improvement of Intestinal Function and Treatment,
The Hospital for Sick Children, Toronto, Ontario, Canada.
- 15 OR 11:00-11:07 The influence of nutrients, biliary-pancreatic secretions and systemic trophic hormones on intestinal adaptation
Taqi, Esmaeel¹; Wong, Victor¹, Wallace, Laurie E, ¹ de Heuvel, Elaine¹, Zheng, H², Berthoud, H², Holst, Jens J³, Sigalet, David L¹
1. Room 1746- HSC, University of Calgary, Calgary, AB, Canada.
2. Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge, LA, USA.
3. University of Copenhagen, Copenhagen North, Denmark

11:15-11:25		Stretching Break
11:25-12:20		JPS/Fred MacLeod Lecture - "On Conduits of Life" Michael Gauderer
12:20-12:50		Box Lunch
12:30-13:30		2m2s/videos
13:45-14:00		Pediatric Surgical Society Presidency. Where's the Instruction Manual? Geoff Blair
14:00-14:15		CAPSNet update - Erik Skarsgard
14:15-14:30		Consensus guidelines on Management of Cryptorchidism - Sarah Jones

		Scientific Session # 3: Oral Presentations Moderators : Frank Guttman & Olivier Reinberg	
14:30-15:30			
16	O R	14 :30-14 :37	Timing and surgical management of Neonatal Testicular Torsions <u>Orchidee Djahangirian</u> , Alain Ouimet ¹ Dickens St-Vil Hôpital Sainte-Justine, Montréal, Quebec, Canada
17	O R	14 :42-14 :49	Incarceration rates in pediatric inguinal hernia : Don't trust the coding <u>Suad Gholoum</u> , George Melich, Robert Baird, Jean-Martin Laberge, Pramod Puligandla Division of Pediatric Surgery. The Montreal Children's Hospital. McGill University. Montreal, Quebec, Canada
18	O R	14 :54-15 :01	Nonoperative management of symptomatic urachal anomalies <u>Aaron M Lipskar</u> MD ¹ , John Layliev MD ² , Richard D Glick MD ¹ , Nelson G Rosen MD ¹ , Andrew R Hong MD ¹ , Stephen E Dolgin MD ¹ , and Samuel Z Soffer MD ¹ ¹ Division of Pediatric Surgery, Schneider Children's Hospital, North Shore-Long Island Jewish Health System, New Hyde Park, NY ² Department of General Surgery, North Shore-Long Island Jewish Health System, New Hyde Park, NY
19	O	15 :06-15 :13	Novel treatment for Desmoplastic Small Round Cell Tumor (DSRCT) : Hyperthermic Interperitoneal Perfusion (HIPEC) <u>Hayes-Jordan, Andrea</u> , Xiao, Lian Chun, Holly Green, Peter Anderson University of Texas, MD Anderson Cancer Center
20	O	15 :18 :15 :25	CD34-positive cells from Hep-T1 hepatoblastoma cell line express liver specific markers <u>Henning Fiegel</u> ¹ , Christine Hoepfer ¹ , Stefan Gfroerer ¹ , Dietrich Kluth ² , Udo Rolle ¹ ¹ Department of Pediatric Surgery, Goethe-University, Frankfurt/M., Germany ² Department of Pediatric Surgery, University of Leipzig, Leipzig, Germany
15 :30-15 :50			Coffee Break

		Scientific Session # 4 : Poster display with Walkabout Presentations Moderator : Helene Flageole	
15 :50-17 :15			
21	O R	15 :50-15 :52	Comparison of Pediatric Appendicitis Outcomes Between Teaching and Nonteaching Hospitals <u>Shant Shekherdimian</u> , MD, Steven L. Lee, MD, Vicki Y Chiu, MS Kaiser Permanente, Los Angeles Medical Center
22	O R	15 :55-15 :57	Nonparasitic splenic cysts in children : current status <u>CK Sinha</u> ¹ , M Agrawal University Hospital of Lewisham, London, UK
23	O R	16 :00-16 :02	Increasing prevalence of Complicated Gallbladder disease in children – Is there a correlation between obesity and complicated disease? <u>Kristin Baltazar</u> ¹ , William McNamara ¹ , Yi-Horng Lee ² ¹ Department of Surgery, School of Medicine, State University of New York at Buffalo ² Divison of Pediatric Surgery, Department of Surgery, University of Rochester Medical Center
24	O	16 :05-16 :07	Nissen fundoplication for children with severe gastroesophageal reflux disease and congenital cardiac disease : one center's experience <u>Noura Al-Musa</u> MD, Rana Al-Hossaini MD, Saud Al-Shanafey MD King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
25	O	16 :10-16 :12	Correlation of complex ascites with intestinal gangrene and perforation in neonates with Necrotizing Enterocolitis Whitney McBride, <u>Sudeep Roy</u> , Adele Brudnicki and Gustavo Stringel Maria Fareri Children's Hospital New York medical College.
26	O R	16 :15-16 :17	Bishop-Koop anastomosis : Is it still useful? <u>Catherine Paris</u> , Ann Aspirot, Mona Beaunoyer

			CHU Sainte-Justine, Montréal, Quebec
27	O R	16 :20-16 :22	Is routine preoperative 2D echocardiography necessary for infants with esophageal atresia, omphalocele, or anorectal malformation? <u>Ahmed Nasr</u> ¹ , Patrick McNamara ² , David Levin ¹ , James Andrew ² , Helen Holtby ³ , Jacob C. Langer ¹ ¹ Department of Paediatric Surgery, ² Department of Neonatology, ³ Department of Anesthesia. The Hospital For Sick Children – Toronto. Canada.
28	O	16 :25-16 :27	Fetal surgery in the sheep model of myelomeningocele allows normal bladder development <u>Encinas JL</u> , Luis Avila LF, Tovar JA La Paz Hospital. Madrid. Spain.
29	O R	16 :30-16 :32	The endoscopic retrograde cholangiopancreatography, useful and safe in children <u>Catherine Paris</u> , Jimmy Bejjani, Mona Beaunoyer, Alain Ouimet CHU Sainte-Justine, Montréal, Quebec
30	O R	16:35-16:37	Single port laparoscopic appendectomy: The evolution of minimally invasive surgery in the pediatric population <u>Keith A. Thatch, M.D.</u> , Timothy J. Fairbanks, M.D. Kim G. Mendelson, M.D., Ph.D., Marshall Z. Schwartz, M.D, Shaheen J. Timmapuri, M.D., Rajeev Prasad, M.D., Matthew L. Moront, M.D., L. Grier Arthur, M.D. St. Christopher's Hospital for Children/Drexel University College of Medicine, Philadelphia, PA, U.S.A
31	O	16:40-16:42	Laparoscopic-assisted Roux-en-Y hepatoenterostomy in 218 children with congenital biliary dilatation <u>Long Li</u> , Mei Daoi , Hui Ye Department of Paediatric Surgery, Capital Institute of Paediatrics, Beijing, China
32	O	16:45-16:47	Early Experience with Single-site Laparoscopic Cholecystectomy: First Fifteen Cases <u>Scott C. Boulanger</u> , Walter J. Chwals, Todd A. Ponsky Rainbow Babies and Children's Hospital, Case Western Reserve School of Medicine
33	O R	16:50-16:52	Efficacy of thoracoscopy for lung nodule resection <u>Belinda Dickie</u> , Roshni Dasgupta Department of Pediatric General and Thoracic Surgery, Cincinnati Children's Medical Center. Cincinnati, OH
34	O R	16:55-16:57	The Extended Surgical Time-Out: Does It Improve Quality and Prevent Wrong-Site Surgery? Steven L. Lee, MD, <u>Shant Shekherdimian, MD</u> , Roman M. Sydorak, MD, Stanley T. Lau, MD. Kaiser Permanente, Los Angeles Medical Center
35	O R	17:00 -17:02	Port-a-cath placement: Sometimes Change is Not a Good Thing <u>Rod MacNeil</u> ,Steven Lopushinsky , Guy Brisseau Dalhousie University / IWK Health Centre

36	C R	17:05-17:07	Nonoperative management of tracheal tear in a pediatric trauma patient <u>Oluwakemi Tomobi</u> , Mary Santos, MD University of Rochester Medical Center
37	O R	17:10-17:12	Changing practice in the management of venous and lymphatic malformations – Outcomes of sclerotherapy <u>Alan E Mortell MD</u> ¹ , Roshni Dasgupta MD ¹ , Ravindhra G Elluru MD, PhD ² , Denise M Adams MD ³ , Manish Patel DO ⁴ , Richard G Azizkhan MD ¹ ¹ Hemangioma and Vascular Malformations Center, Division of Pediatric and Thoracic Surgery, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA ² Division of Pediatric Otolaryngology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA ³ Hemangioma and Vascular Malformations Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA ⁴ Department of Interventional Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA

**POSTERS ON DISPLAY
NO PRESENTATION**

38	O R	Type-A Esophageal Atresia: A critical review of management strategies at a single center Burjonrappa Sathyaprasad, Éva Thiboutot, Julie Castilloux, Dickens Saint.Vil University of Montreal
39	O R	Repair of long gap esophageal atresia without anastomosis Gustavo Stringel, Camelia Lawrence and Whitney McBride Maria Fareri Children's Hospital, New York Medical College
40	O R	Routine use of pH study in young children to evaluate gastro-esophageal reflux following esophageal atresia and tracheo-esophageal fistula repair ¹ Catherine Paris , ¹ Ann Aspirot , ² Christophe Faure , ¹ Arié L Bensoussan , ¹ Sarah Bouchard ¹ CHU Sainte-Justine ² Université de Montréal
41	O	Quality of Life in Neurologically Impaired Children with Gastroesophageal Reflux Disease Sanjay Mahant MD ^{1,2} , Aimee C. Pastor RN MN ¹ , David Nicholas SW ³ , Laurie DeOliveira SW ¹ , Jacob C. Langer MD ^{1,2} ¹ Hospital for Sick Children, Toronto, ² University of Toronto , ³ University of Calgary
42	O R	Laparotomy versus peritoneal drain placement for perforated necrotizing enterocolitis: a meta-analysis of randomized trials Ahmed Nasr , Ted Gerstle Department of Paediatric Surgery. The Hospital For Sick Children-Toronto. Canada
43	O R	Insulin–Receptor Is Downregulated In The Nitrofen–Induced Hypoplastic Lung Elke Rutenstock MD, Takashi Doi MD , Jens Dingemann MD , Prem Puri FRCS The Children's Research Centre, Our Lady's Children's Hospital, Dublin, Ireland
44	O R	Appendicitis in Children Transferred from Northern Quebec Alana Beres, Saleh Al-Abbad, Pramod Puligandla Montreal Children's Hospital, McGill University Health Centre
45	O R	Malrotation and Volvulus in Children: A Retrospective Review of 142 Patients David Lazar D, Monica E Lopez, David E. Wesson, Mary L Brandt Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas

46	O	<p>What is the Influence of Ectopic Location of the Papilla of Vater on the Radiological Features of Choledochal Cyst?</p> <p>Mei Diao ¹, Long Li ¹, Hui Ye ¹, Hai-Lin Sun ², Xin-Yu Yuan ²</p> <p>¹ Department of Paediatric Surgery, ² Department of Radiology, Capital Institute of Paediatrics, Beijing, China</p>
47	C R	<p>Biliary Atresia in a 27 week premature twin boy: genetic or acquired?</p> <p>Sara Chang , Akemi Kawaguchi , Megan E Fitch, Mary L Brandt</p> <p>Michael E. DeBakey Department of Surgery, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas</p>
48	O R	<p>Do Infants with Pyloric Stenosis Benefit from the Presence of a Pre-operative Nasogastric Tube?</p> <p>Ahmad Elnahas MD¹, Julia Pemberton MSc^{1,2}, Yasmin Yousef MD¹, and Helene Flageole MD,MSc ^{1,2}</p> <p>¹ McMaster Children's Hospital, McMaster University, Hamilton, Ontario, ² McMaster Pediatric Surgery Research Collaborative</p>
49	O	<p>Long-term T-Tube Stenting as Treatment for Severe Acquired Subglottic stenosis</p> <p>A. Zaima¹, Y. Bitoh², K. Morita³, J. Tsugawa³, T. Ishii³, S. Satoh³, E. Nishijima¹</p> <p>¹Division of Pediatric Surgery, Kobe Univ. Graduate School of Medicine, ²Department of Pediatric Surgery, Kobe Children's Hospital, ³Department of Pediatric Surgery, Takatsuki General Hospital</p>
50	O R	<p>A comparison of traditional incision and drainage versus catheter drainage of soft tissue abscesses in children</p> <p>Adam C. Alder, MD, Jill Thornton, RN, MSN, CPNP, Kim McHard, RN, MSN, CPNP, Linda Buckins, RN, MSN, CFNP, Robert Barber, RN, Michael A. Skinner, MD</p> <p>Children's Medical Center Dallas, Department of Surgery, UT Southwestern</p>
51	O	<p>Is the need for fascial defect extension a predictor of adverse outcome in gastroschisis?</p> <p>Butterworth, Sonia A¹, Brant, Rollin², Skarsgard, Erik D¹ and the Canadian Pediatric Surgery Network</p> <p>¹Department of Surgery, BC Children's Hospital and the University of British Columbia</p> <p>²Department of Statistics, University of British Columbia</p>
52	O	<p>Mediastinal Neurogenic Tumors in Children</p> <p>José Carlos Fraga¹, Bahattin Aydogdu², Roberto Aufieri ², Edward Kiely², Agostino Pierro²</p> <p>¹Pediatric Thoracic Surgery Unit, Pediatric Surgery Service, Hospital de Clinicas of Porto Alegre, Brazil;</p> <p>² Surgery Unit, Institute of Child Health and Great Ormond Street Hospital for Children, London, United Kingdom.</p>
53	C R	<p>Left Sided Pediatric Pericardial Cyst: Excision Using Video-Assisted Thoracoscopic Surgery</p> <p>Shane D. Lewis, MD, Monford D. Custer, III, M.D., Danny C. Little, MD</p> <p>Division of Pediatric Surgery, Texas A&M Health Science Center College of Medicine at The Children's Hospital at Scott & White, Temple, TX, USA.</p>
54	O R	<p>Vertebral Fracture Associated with Abdominal Wall Bruising: A Predictive Factor of Bowel Injury</p> <p>Catherine Paris, Eva Thiboutot, Mahli Brindamour, Marianne Beaudin, Alain Ouimet, Dickens Saint-Vil</p> <p>Pediatric Surgery, Hôpital Sainte-Justine, Montreal QC</p>
55	O R	<p>Incidence and Demographics of CNS Injuries in Children</p> <p>Sultan Al-Habdan, Hala Mandora, Khalid Al-bedah, Saleem Al-enazi, Amro Al-habib, Mohammed Zamakhshary</p> <p>Division of Pediatric Surgery, King Saud bin Abdulaziz University for Health Sciences</p> <p>King Abdullah International Medical Research Center</p> <p>Riyadh, Saudi Arabia</p>

SATURDAY, OCTOBER 3			
8:30-10:06		Scientific Session # 5: Oral Presentations Moderators : Sigmund Ein & David Price	
56	O	08:30-08:37	Randomized Controlled Trials In The Journal of Pediatric Surgery: Quality Of Reporting Over A Ten Year Period Khalid Al-Harbi ^{1,2,3} , Julia Pemberton ^{1,3} , Allyson Ion ¹ , <u>Peter Fitzgerald</u> ^{1,2,3} ¹ Department of Surgery, McMaster University ² McMaster Children's Hospital ³ McMaster Pediatric Surgery Research Collaboration
57	O	08:42-08:49	Is sonography reliable for the diagnosis of pediatric blunt abdominal trauma? Tobias Retzlaff ¹ , Wolfgang Hirsch ² , Holger Till ³ , Udo Rolle ⁴ ¹ Department of Surgery, Klinikum Bad Salzungen gGmbH, Bad Salzungen Germany ² Department of Pediatric Radiology, University of Leipzig, Leipzig, Germany ³ Department of Pediatric Surgery, University of Leipzig, Leipzig, Germany ⁴ Department of Pediatric Surgery, Goethe-University, Frankfurt/M., Germany
58	O R	08:54-09:01	What is the Significance of Contrast "Blush" in Paediatric Blunt Splenic Trauma? <u>DA Davies</u> ¹ , J Traubici ¹ , SH Ein ¹ , RH Pearl ² , JC Langer ¹ , PW Wales ¹ ¹ The Hospital for Sick Children, Toronto ² The University of Illinois, Peoria
59	O R	09:06-09:13	Patterns of Non-sexual, Non-obstetric Genital Trauma in Young Females and Indications for Operative Management <u>Corey W. Iqbal</u> ¹ , Nicole J. Krumrei ¹ , Nezar Y. Jrebi ¹ , Daniel C. Cullinane ² , Scott P. Zietlow ² , Christopher R. Moir ³ , Michael B. Ishitani ³ ¹ Mayo Clinic Rochester Dept. of Surgery, ² Mayo Clinic Rochester Division of Trauma, Critical Care, and General Surgery, ³ Mayo Clinic Rochester Division of Pediatric Surgery
60	O R	09:18-09:25	Torso Trauma In Children "Run over" By Vehicles: A Surprising Outcome <u>Kunoor Jain</u> , Charles E. Bagwell Virginia Commonwealth University Department of Pediatric Surgery
61	O R	09:30-09:37	Assessment of Guidelines for Termination of Trauma Resuscitation; are children small adults? <u>Tony R. Capizzani</u> , Robert Drongowski, Peter F. Ehrlich University of Michigan Cs Mott Children's Hospital
62	O	09:42-09:49	A Prospective, Multi-Institutional Study of Pediatric All-Terrain Vehicle Crashes <u>Brendan T. Campbell</u> ¹ , Kristine M. Kelliher ¹ , John M. Corsi ¹ , Kevin Borrup ¹ , Hassan Saleheen ¹ , Michael D. Bourque ¹ , Paul D. Danielson ² , Anthony DeRoss ³ , Daniel Copeland ⁴ , Allison L. Hester ⁴ , Donna Parnell-Beasley ⁴ , Samuel D. Smith ⁴ , Garry Lapidus ¹ ¹ Connecticut Children's Medical Center, Hartford, Connecticut ² All Children's Hospital, St. Petersburg, Florida ³ UMass Memorial Medical Center, Worcester, Massachusetts ⁴ Arkansas Children's Hospital, Little Rock, Arkansas
63	O R	09:54-10:01	Urban vs. rural pediatric trauma: Reflection of the times and focus on prevention <u>Dana Mihalicz</u> , Leah Phillips, Ioana Bratu University of Alberta, Stollery Childrens Hospital, Division of Pediatric General Surgery
10:06-10:26		Coffee Break	

10:26-10:40		CAPS Travelling Resident Talk – Mohammed Albaqami
		Scientific Session # 6: Oral Presentations
10:40-12:11		Moderators : Mohammed Zamakhshary & Mary Santos
64	O R	10 :40-10 :47 Pulmonary Segmentectomy in Children for Congenital Cystic Adenomatoid Malformation NJ Krumrei, JL Thompson, CR Moir. Mayo Clinic, Rochester MN
65	O R	10:52-10:59 The Role of Transforming Growth Factor-Beta-2 and 3 in Formation of Ventral Body Wall in the Cadmium Induced Omphalocele Chick Model Takashi Doi ^{1,2} , Jennifer Thompson ² , John Bannigan ² , Prem Puri ^{1,2} ¹ The Children's Research Centre, Our Lady's Children's Hospital, Dublin, Ireland ² School of Medicine and Medical Science and Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Ireland
66	C R	11:04-11:08 Management of a Giant Omphalocele with an External Skin Closure System Robert Baird, Suad Gholoum , Jean-Martin Laberge , Pramod Puligandla Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University, Montreal, Quebec, Canada
67	O	11:11-1 :18 Cholecystectomy in sickle cell disease children; a series of 63 cases Salim Ghantous, Salam Yazbeck, Nafeesa Al-Faris, Basel Abushullaih, Mohammad Edreesi, Saad AlMulhim Saudi Aramco Dahhran Health Center
68	O	11:23-11:30 Versatility of One-Trocar Surgery in Children Cobellis G , Mastroianni L , Cruccetti A , Noviello C ,Torino G, Amici G , Martino A. Paediatric Surgical Unit, Salesi Children's Hospital, Ancona, Italy.
69	O R	11:35-11:42 Comparison of the Nuss versus the Ravitch procedure for pectus excavatum repair: A meta-analysis Ahmed Nasr, Annie Fecteau , Paul Wales Department of Paediatric Surgery. The Hospital For Sick Children. Toronto
70	O	11:47-11:54 The sixteen golden hours for conservative treatment in children with post operative small bowel obstruction Elad Feigin, Dragan Kravarusic, Ittai Goldrat, Ran Steinberg, Elena Dlugy, Arthur Baazov, Michael Zer, Enrique Freud Department Of Pediatric Surgery, Schneider Children's Medical Center of Israel and Sackler Medical School
71	O R	11:59-12:06 Adhesive small bowel obstruction in children: markers of outcome Gareth Eeson ¹ , Paul Wales ² , James Murphy ³ ¹ Department of General Surgery, University of British Columbia ² Hospital for Sick Children, University of Toronto ³ BC Children's Hospital, University of British Columbia, Vancouver
12:11-12:40		Buffet Sandwich Lunch
12 :30-13:00		The Halifax Explosion – Demystifying the Origin of Pediatric Surgery in North America Drs. Alex Gillis & Danny Little
13:30-15:00		Moderator : Jacob Langer Panel Debate & Discussion – Bariatric Surgery for Youth Dr. Mary Brandt - Surgical Director, Adolescent Bariatric Surgery, Texas Children's Hospital, Houston Dr. Guy Brisseau - Pediatric General Surgery, IWK Health Centre, Halifax Dr. Elizabeth Cummings - Division Head, Pediatric Endocrinology , IWK Health Centre, Halifax Dr. Christopher Jamieson - Professor of Surgery, Dalhousie University, Halifax
15:00-15:05		President's Closing Remarks - Geoffrey Blair
18:00 – 23:00		Presidential Reception and Dinner : Pier 21 – Canada's Immigration Museum

The Effect Of In Vitro Tracheal Occlusion On Branching Morphogenesis In Fetal Lung Explants From The Rat Nitrofen CDH Model

Jeremy Grushka¹, Saleh Al-Abbad¹, Robert Baird¹, Pramod Puligandla¹, Feige Kaplan², Jean-Martin Laberge¹

¹ Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University, Montreal, Quebec, Canada

² Department of Human Genetics, Montreal Children's Hospital Research Institute, McGill University, Montreal, Quebec, Canada

Background/Purpose: Fetal tracheal occlusion(TO) has been investigated as a treatment for lung hypoplasia secondary to Congenital Diaphragmatic Hernia(CDH). TO has been shown to accelerate lung growth in vivo but previous experiments suggest it induces alveolization without concomitant bronchial development. To characterize early lung branching, we investigated the effects of in vitro TO on bronchial branch development in fetal lung explants derived from the Nitrofen-rat model of CDH.

Methods: Rat dams were gavaged Nitrofen on gestational day-9.5 and fetal lungs were harvested for culture on gestational Day-14(term=22 days). Control animals were gavaged olive oil alone. Four experimental groups were investigated, with TO performed ex vivo using cautery:(Control/Control+TO/Nitrofen/Nitrofen+TO). Explants were incubated at 37°C and 5%CO₂ for 72hours. Representative photographs were taken at t=0,24,48 and 72hours from the time of culture. The number of distal branches was counted for each explant. The Student's t-test was used to compare measurements.

Results: A total of 67 fetal lung explants were cultured. At all time-points, Nitrofen-exposed animals demonstrated decreased bronchial branching, while TO induced an upregulation in branching in both controls and Nitrofen-exposed animals(Table-1).

Table-1:Branching iterations

Group	0hours	24hours	48hours	72hours
Control(n=16)	4.6±0.7	12.9±2.5	35.4±7.8	69.8±15.5
Nitrofen(n=17)	3.8±0.7 [^]	9.4±1.9 [^]	22.7±6.6 [^]	56.9±15.3 [*]
Control+TO(n=22)	4.9±0.8	21.6±3.5	47.4±6.7	92.4±14.2 [†]
Nitrofen+TO(n=12)	3.6±0.6 [°]	16.9±4.1 [°]	37.5±6.2 [°]	78.4±14.2 [‡]

*p<0.01 vs. Control;†p<0.01 vs. Control;‡p<0.01 vs. Nitrofen;[^]p<0.001 vs. Control;[°]p<0.001 vs. Control+TO>

Conclusions: Our results suggest that Nitrofen results in early inhibition of bronchial branch development while TO at day-14 upregulates branching in normal and Nitrofen treated lung explants. Thus, early TO reverses the underdevelopment of bronchial branching seen in lung hypoplasia in this model, restoring it to control levels. This represents the first reported experience with ex vivo TO in lung explants from the Nitrofen-rat model.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr. Jean-Martin Laberge

Parafollicular C-cells of the thyroid are decreased in Congenital Diaphragmatic Hernia. Experimental and human studies

Ana L Luis¹, Federica Pederiva¹, Elena Ruiz², Jose I Rodriguez², Leopoldo Martinez¹, Juan A Tovar¹
Departments of Pediatric Surgery¹ and Pathology², Hospital Universitario La Paz, Madrid, Spain

Background/Purpose: Rats with congenital diaphragmatic hernia (CDH) have parathyroid and thymic anomalies related to neural crest dysfunction during embryogenesis. Like babies with CDH, these rats have conotruncal, facial, and visceral innervation neurocristal defects. The present study examines whether parafollicular C-cells of the thyroid, whose embryogenesis is related to that of parathyroids and thymus, might also be abnormal in both rats and babies with CDH

Methods: After IRB approval, transversal sections of the thyroids of CDH (n=10) and control (n=10) pre-term (E21) fetal rats were stained with anti-calcitonin antibodies and the C-cells per section were counted. Calcitonin-stained areas were measured in autopsy sections of the thyroids of 12 babies dead of CDH and 11 controls. Mann-Whitney tests were used for comparison using $p < 0.05$ as significant.>

Results: The number of stained C-cells per section of thyroid was smaller in CDH rats than in controls (23 ± 37 vs 101 ± 63 , $p < 0.05$). The cells were distributed in them in the periphery in contrast with the normal concentration in the center of the lobes. With comparable thyroid section surfaces, the proportion of stained/total surface was significantly smaller in CDH babies than in controls ($0.035 \pm 0.030\%$ vs $0.072 \pm 0.052\%$, $p > 0.05$). Cell distribution was similar in both groups.>

Conclusions: Parafollicular thyroid C-cells are scarcer in rats and patients with CDH than in controls. These findings further support the involvement of neural crest dysregulation in the pathogenesis of CDH and the pertinence of using this experimental model to investigate the human condition. The clinical effects of this anomaly are unknown and probably negligible, but they are currently under scrutiny.

Original Paper

Senior Author: Juan A. Tovar

Corresponding to:

Juan A. Tovar
Departamento de Cirugía Pediátrica
Hospital Universitario La Paz
P. de la Castellana, 261
Madrid, Other
Spain
28046
tel: +34 91 727 7019
fax: +34 91 727 7033
e-mail: jatovar.hulp@salud.madrid.org

Bedside Lung Mechanics Identifies the Ability to Survive in Hypoplastic Lung Disease

Abdul Haleem, Muhammad T Zia, Ravi Mishra, Lance A. Parton, Edmund F. La Gamma, and Gustavo Stringel.

Maria Fareri Children's Hospital.
New York Medical College

Background/Purpose: Decisions to utilize ECMO involve assessment of the severity of pulmonary hypertension and the adequacy of pulmonary blood flow. Successful weaning from ECMO requires reversible parenchymal disease and a minimum lung alveolar capacity independent of issues of lung perfusion. Low compliance reduces survival or readiness to wean, these tests require specialized equipment. Conventional ventilators do not yet allow for continuous serial determinations of tidal volume (TV). The aim of our study was to determine whether measurement of TV using bedside pulmonary graphics could assess the degree of hypoplasia and predict survival.

Methods: Demographic data were collection from all neonates considered for or treated with ECMO at our center over the last 5 years. OI > 30 or progression were the reasons to start ECMO. The "maximal bedside tidal volume" was measured daily at the peak pressure where "beaking" began with a PEEP of 4 cm H₂O.

Results: There were 22 patients reviewed. Neonates with a TV < 3 ml/kg died (n=4) while 4 additional deaths occurred (TV >3 ml/kg) due to a hemorrhage, bilateral pneumothoraces, severe congenital anomalies and meningitis. All other measures of lung capacity or blood gas assessments were less valuable than TV in predicting survival.

Conclusions: Our results are consistent with previous reports using more elaborate pulmonary function testing for predicting survival in patients with hypoplastic lungs. We suggest that in the few days after birth serial TV measurements reveal values < 3 ml/kg, a formal pharmacological assessment of the magnitude of reversibility of pulmonary vascular resistance should be undertaken in order to help guide medical decision making.

Original Paper
Trainee Presentation

Senior Author: Edmund F. La Gamma

Corresponding to:
Gustavo Stringel
21 Addison Street
Larchmont, New York
United States
10538
tel: (914)833-2311
fax: (914)594-4933
e-mail: GStringel@aol.com

Thoracoscopy Repair In Congenital Diaphragmatic Hernia: Reconstruction Of The Dome!

Richard Keijzer, Cees P. van de Ven, John Vlot, Pim Sloots, Gerard C. Madern
Dick Tibboel, Klaas M.A. Bax
Department of Pediatric Surgery, ErasmusMC-Sophia, Rotterdam, The Netherlands

Background/Purpose: Congenital diaphragmatic hernia (CDH) has traditionally been repaired in an open fashion. However, more and more reports on thoracoscopic repair are being published. The majority of these report only primary repair of the defect, due to the anticipated negative effects of using a patch, such as prolonged operation time. The aim of this study was to evaluate our series of thoracoscopic CDH repair, including a large group of patients with CDH repair using a patch.

Methods: A retrospective chart review was performed on all patients with a thoracoscopic CDH repair in our hospital between June 2006 and December 2008.

Results: Between June 2006 and December 2008, 62 children with posterolateral CDH were admitted of whom 24 (39%) were operated thoracoscopic depending on the discretion of the attending surgeon. Three (12,5%) were right-sided defects. Six (25%) operations were converted to open surgery. Nine (38%) diaphragmatic defects were closed thoracoscopic without a patch and nine (38%) with a patch. Four (17%) primary repaired CDH patients had a recurrence. All recurrences were repaired thoracoscopic, three using a patch. There were two other complications after the initial operation: one arterial cerebral infarction and one persistent pulmonary hypertension requiring ECMO following the repair. Both were considered not to be related to the surgical procedure.

Conclusions: As in open repair, it seems wise to use large patches liberally, not only to reconstruct the dome of the diaphragm, but also to avoid undue tension and related recurrences. Moreover, the thoracoscopic approach seems also suitable in case of a recurrence.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr Jack Langer

Senior Author: Klaas M.A. Bax

Corresponding to:
Richard Keijzer
ErasmusMC-Sophia
Department of Pediatric Surgery, Room SK 1254
PO Box 2060

Abnormal Neuroimaging and Neurodevelopmental Findings in a Cohort of Antenatally Diagnosed Congenital Diaphragmatic Hernia Survivors

Sarah Tracy, BA ¹ Judy Estroff, MD ² Clarissa Valim, MD, ScD ^{1,3}
Sandra Friedman, MD, MPH ⁴ Catherine Chen, MD, MPH ¹

¹ Department of Surgery, Children's Hospital Boston

² Department of Radiology, Advanced Fetal Care Center, Children's Hospital Boston

³ Division of Biostatistics, Children's Hospital Boston

⁴ Developmental Medicine Center, Children's Hospital Boston

Background/Purpose: Prior studies have shown that survivors of congenital diaphragmatic hernia (CDH) repair may have long-term cardiac, pulmonary, and nutritional issues, as well as neurodevelopmental sequelae within the first three years of life. In this study, we examined the relationship between neuroimaging abnormalities and neurodevelopmental outcomes in a cohort of antenatally diagnosed CDH survivors.

Methods: Retrospective chart reviews were performed for CDH survivors born between January 2000 and December 2007 who were evaluated antenatally in the Advanced Fetal Care Center at Children's Hospital Boston (n=60). Prenatal and postnatal neuroimaging findings, and clinical data were collected. Neurodevelopmental findings identified by a developmental pediatrician at ages 1 and/or 3 were tabulated.

Results: Abnormal prenatal neuroimaging findings were noted in 10% of survivors, while 38% and 42% had abnormal postnatal neuroimaging findings up to ages 1 and 3, respectively. 28% of infants required extracorporeal membrane oxygenation, 87% had medical issues at the time of hospital discharge, and 68% and 76% had medical issues at ages 1 and 3, respectively. 46% and 71% had motor problems at ages 1 and 3, respectively. Univariate analysis showed that motor problems at age 1 were strongly associated with abnormal postnatal neuroimaging findings (OR=7.4; 95% CI=1.8-29.6; P<0.01) and length of ventilator time (OR=1.1/day; 95% CI=1.01-1.12; P=0.02).>

Conclusions: Abnormal postnatal neuroimaging findings and length of ventilator time were predictors of motor problems at age 1. Prenatal neuroimaging by sonography and fetal MRI can detect brain anomalies in fetuses with CDH. Ongoing followup of CDH survivors should include neurodevelopmental evaluations and followup neuroimaging.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: Tom Jaksic, MD, PhD, FRCSC

Senior Author: Catherine Chen, MD, MPH, FACS

Corresponding to:

Catherine Chen, MD, MPH, FACS

Department of Surgery, Children's Hospital

300 Longwood Avenue

Boston, Massachusetts

United States

Transhiatal laparoscopic esophagectomy for esophageal replacement in children.

Olivier Reinberg, Sabine Vasseur Maurer, Anthony De Buys-Roessing
Department Of Pediatric Surgery, University Hospital Center And University Of Lausanne, Switzerland

Before 1989 retrosternal transplants were used for esophageal replacements in children. We thereafter introduced the one stage orthotopic transplant procedure following blind esophagectomy through a cervico-abdominal approach. Even after large experience in more than 200 cases, we still consider this step as the most dangerous part of the procedure, showing 20% of various complications. For this reason we have tried to achieve esophagectomy under visual control without opening the thorax for several years. Since 2006, we have used a standardized procedure through a laparoscopic approach.

We report our preliminary experience in 10 consecutive patients with caustic stenosis of the esophagus being replaced either by colonic transplants or gastric tubes. Through a laparoscopic approach, we dissected the esophagus in close contact with the latter under direct visual control. We were able to free the esophagus from the hiatus to far above the left bronchus, up to the subclavian artery, thus allowing its total removal in all cases.

This technique reduces the hazards related to the blind esophagectomy in such procedures.

Technique Report

Senior Author: Olivier REINBERG

Corresponding to:

Olivier REINBERG
Prof Olivier REINBERG
Dept of Pediatric Surgery
University Hospital of Lausanne (CHUV)
Lausanne-CHUV, Other
Switzerland
1011
tel: +41 21 314 30 71
fax: +41 21 314 30 76
e-mail: olivier.reinberg@chuv.ch

Evaluation of an anti-reflux procedure for colonic interposition in pediatric esophageal replacements.

Sabine Vasseur Maurer, Vanina Estremadoyro, Olivier Reinberg
Department of Pediatric Surgery, University Hospital Center and University of Lausanne, Switzerland

Background/Purpose: Background: We introduced in 1989, the one-stage procedure with orthotopic transplants. A pitfall of this procedure is the resulting frequent reflux and/or stasis in the transplants when performing cologastric anastomosis. Since 1993 we have built a new antireflux wrap (ARW) using an anterior wrap similar to Dor's, but fixed to the right crus.

Purpose : To evaluate ARW.

Methods: Method : From 1993 to 2008, data records of 67 patients with ARW were compared with 27 without ARW (either operated before 1993 or if ARW was not appropriate). Both groups underwent the same surgical procedure, but the lack of wrap. Postoperative esophagograms were reviewed. Gastro-colic refluxes and stasis in the transplant were searched for.

Results: Results : The rate of reflux demonstrated on esophagograms done by D10 was reduced from 48,1% without ARW to 7,5%, and on later esophagograms from 40,0% without ARW to 21,4%. The 25% long term rate of stasis in the transplant was not increased with ARW.

Conclusions: Conclusions: This loose ARW allows better results in patients with colonic esophageal replacements by reducing the reflux, without increasing the rate of stasis. In the long term children accommodate better to stasis than to reflux and are protected from occult inflammation.

Original Paper
Trainee Presentation

Senior Author: Olivier REINBERG

Corresponding to:
Olivier REINBERG
Prof. Olivier REINBERG
Dept of Pediatric Surgery
University Hospital of Lausanne (CHUV)
Lausanne-CHUV, Other
Switzerland
1011
tel: +41 21 314 30 71
fax: +41 21 314 30 76
e-mail: olivier.reinberg@chuv.ch

Thoracoscopic Esophageal Elongation Post Cervical Esophogostomy: A Better Alternative For Esophageal Replacement

Aayed R. Alqahtani, FRCSC, FACS
King Saud University, Riyadh, Saudi Arabia

Long gap esophageal atresia (LGEA) is a difficult problem to treat and its management is complex. Cervical esophagostomy is necessary in some cases; however it makes esophageal replacement inevitable. Herein, we describe an innovative technique to preserve the native esophagus using thoracoscopic elongation approach in a patient with LGEA and cervical esophagostomy.

Materials and Methods: A 9-months-old girl was diagnosed at birth with LGEA for which she had gastrostomy. At 3 months of age she underwent right thoracotomy that revealed high proximal pouch with absent distal esophageal end. Cervical esophagostomy was then created. She was referred to our center at 9 month of age. After full evaluation, the cervical esophagostomy was mobilized and repositioned in the thoracic cavity using thoracoscopic approach and the elongation technique applied. In 10 days, a thoracoscopic esophago-esophageal anastomosis was created. She required few esophageal dilations during her follow-up and laparoscopic Nissen fundoplication. 1 year post operatively, she is tolerating solid food and gaining weight. **Conclusion:** Thoracoscopic esophageal elongation Post Cervical Esophogostomy is feasible and might be a good alternative for esophageal replacement.

Technique Report

Senior Author: Aayed Alqahtani, FRCSC, FACS

Corresponding to:

Aayed Alqahtani
1 baabada
Riyadh 11671
Riyadh, Other
Saudi Arabia
84147
tel: +966507475363
fax: +96614557229
e-mail: qahtani@yahoo.com

Esophagus tissue engineering: In-situ generation of vascularized esophageal conduits using the ovine model

Amulya K. Saxena, Piotr Soltysiak, Herwig Ainoedhofer and Michael E. Höllwarth
Department of Pediatric and Adolescent Surgery, Medical University of Graz, Austria

Background/Purpose: Esophagus replacement using the present surgical techniques is associated with significant morbidity and mortality. Tissue engineering of the esophagus may provide the solution for esophageal loss. In our attempts to engineer the esophagus, this study aimed to investigate the feasibility of generating vascularized in-situ esophageal conduits using the ovine model.

Methods: Esophageal biopsies were obtained from 10 Mountain Sheep and esophageal epithelial cells (EEC) were proliferated. The EEC were then seeded on to 99% porous bovine collagen sponge sheets of 4x4cm. After 2 weeks of maintaining the constructs in-vitro, the constructs were tubularized on stents to create a tube resembling the esophagus and implanted into the omentum for in-situ tissue engineering. The edges of the omentum were sutured using non-absorbable suture material. The constructs were retrieved after 4 weeks.

Results: The omental wrap provided vascular growth around and in the constructs and integrated along the outer surface area of the scaffold. After removal of the stents the construct skeleton revealed a structure similar to the esophagus. Histological investigations demonstrated partial tissue organization in the luminal as well as outer surface of the construct during in-situ tissue engineering process.

Conclusions: Esophageal replacements require vascularization of the constructs. In-situ esophageal tissue engineering offers the advantage of vascularization. Our study showed an excellent maintenance of construct shape by stent support during the period of tissue organization, and avoids the mechanical stress exerted on scaffolds during bolus passage that may lead to construct disruption if direct in-vivo tissue engineering is attempted.

Original Paper

Sponsoring CAPS Member: Juan Bass

Senior Author: Amulya K. Saxena, MD PhD

Corresponding to:

Amulya K. Saxena, MD PhD
Department of Pediatric and Adolescent Surgery
Medical University of Graz
Auenbruggerplatz 34
Graz,
Austria
A-8036
tel: 43 (316) 385-3762
fax: 43 (316) 385-3775
e-mail: amulya.saxena@medunigraz.at

Does pre-biopsy contrast enema delay the diagnosis of Long Segment Hirschsprung's Disease?

Chen J ¹, Jamieson DH ², Skarsgard ED ¹

¹ Departments of Surgery and

² Radiology, British Columbia Children's Hospital, Vancouver, British Columbia, Canada

Background/Purpose: Due to variability in presenting symptoms and radiographic features, the diagnosis of long segment Hirschsprung's Disease (LSHD) is frequently delayed. Our purpose was to: 1) summarize contrast enema (CE) findings in patients with biopsy-proven LSHD, and 2) evaluate diagnostic utility of CE by comparing LSHD patients managed with/without pre-biopsy CE.

Methods: All cases of LSHD (pathological transition zone proximal to splenic flexure) treated at BCCH between 1990 and 2008 were identified and stratified by whether a pre-biopsy CE was done (Group 1), or not (Group 2). CE were reviewed by a single radiologist, and the original interpretations were retrospectively categorized as "helpful" or "misleading". Group comparisons evaluated presenting symptoms/signs, and "diagnostic expediency" outcomes including elapsed days from admission to diagnostic rectal biopsy/ first operation and initial hospitalization LOS.

Results: Twenty-nine patients (18 -Group 1; 11 -Group 2) were identified; these groups had comparable clinical presentations. CE review revealed transition zones (TZ) in 6/18 (33%); and of these, 50% underestimated true aganglionic segment length. Eight/18 (44%) original CE reports were "misleading". Overall, Group 1 patients experienced a significant delay in first operation ($p=0.01$), and showed a trend towards longer LOS. Patients with "misleading" CE reports experienced a relative delay in times to rectal biopsy, first operation, and LOS.

Conclusions: Pre-biopsy CE is of little value in the diagnosis of LSHD. Diagnostic delay may result from a "misleading" interpretation. Even if a TZ is recognized, the predicted aganglionic segment length should not be used to guide operative planning.

Original Paper
Trainee Presentation

Senior Author: Erik Skarsgard

Corresponding to:

Erik Skarsgard

K0-123 ACB

4480 Oak Street

Vancouver, British Columbia

Canada

V6H 3V4

tel: (604) 875-3744

fax: (604) 875-2721

e-mail: eskarsgard@cw.bc.ca

A Prospective Study of Effectiveness of Short versus Long Roux-Y Limb in Roux-Y Hepatojejunostomy for Children with Congenital Biliary Dilatation

Mei DIAO, Long LI, Shu-li LIU, Hui YE

Department of Paediatric Surgery, Capital Institute of Paediatrics, Beijing, China

Background/Purpose: To evaluate the effectiveness of short Roux-Y limb (< 30 cm) versus long Roux-Y limb (\geq 30 cm) in hepatojejunostomy for children with congenital biliary dilatation (CBD).

Methods: Two hundred and eighteen CBD patients (M/F: 56/162, mean age 4.16 yrs) undergone Roux-Y hepatojejunostomy between 2001 and 2009 were prospectively recruited. Age, operation time and bleeding, post-operation hospital stay, abdominal drainage removal, restoration of normal bowel movement, urination and feeding, post-operative complications, and pre- and post-operation laboratory results were assessed.

Results: Of 218 patients, 45% underwent hepatojejunostomy with long Roux-Y limb (group 1), while 55% with short Roux-Y limb (group 2). There was no significant difference between 2 groups in age, operation bleeding, post-operation hospital stay and post-operation abdominal drainage removal. Mean operation time in group 2 was significantly shorter than group 1. Restoration of normal bowel movement, urination and feeding in Group 2 were significantly faster than Group 1 ($p < 0.001$, 0.001 and 0.05 respectively). None of patients in group 2 suffered Roux-Y limb intestinal obstruction or bile leak, non-significantly less than 2/98 (2.0%) patients in Group 1 respectively. Neither mortality nor complications of bile reflux, anastomotic stenosis, cholangitis, gastrointestinal bleeding or infection was reported in each group after operation. Similar to group 1, liver function parameters and serum amylase significantly decreased and normalized after operation in Group 2 ($p < 0.01$ respectively).

Conclusions: The application of short Roux-Y limb in hepatojejunostomy is feasible, safe and beneficial to restore normal gastrointestinal function and prevent intestinal obstruction induced by redundancy of Roux-Y limb which occurs as the child grows.

Original Paper

Senior Author: Mei DIAO

Corresponding to:

Long LI

No.2 Ya Bao Road, Chao Yang District, Beijing, CHINA

Beijing, Other

China

100020

tel: 86-13671268169

e-mail: psp3001_1@hotmail.com

Long-term outcome following partial external biliary diversion for progressive familial intrahepatic cholestasis

Ihab Halaweish¹, Walter J. Chwals²

¹Case Western Reserve School of Medicine,

²Department of Surgery, Case Western Reserve School of Medicine, Rainbow Babies and Children's Hospital

Background/Purpose: Though patients with Progressive Familial Intrahepatic Cholestasis (PFIC), or Byler disease, typically require liver transplantation, initial surgical treatment includes partial biliary diversion to relieve jaundice-associated pruritus. This study was undertaken to describe long-term PFIC outcome data which are currently sparcely reported.

Methods: Retrospective review of 7 patients diagnosed with PFIC who underwent partial biliary diversion between 2004 and 2008 was directed towards long-term postoperative outcome including resolution of jaundice/pruritis, ostomy complications, interval to transplant, and death.

Results: Six patients who underwent partial biliary diversion experienced complete resolution of jaundice and pruritus. Four patients experienced persistent ostomy-related complications requiring a total of 14 revisions. Three symptom-free patients have not yet required liver transplantation post-PFIC (average 70 mo.; range 59-78 mo.). Two patients underwent orthotopic liver transplantation (average 44±18 mo. post-PFIC). Two patients died at home due to gastroenteritis-associated dehydration prior to transplantation.

Conclusions: Partial biliary diversion for PFIC is effective as a bridge to liver transplantation in improving jaundice and pruritis and can result in long-term transplant-free intervals but may be associated with a high incidence of ostomy-related complications and dehydration-related mortality.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: Jean-Martin Laberge

Senior Author: Walter J. Chwals

Corresponding to:

Walter J. Chwals

11100 Euclid Avenue, RBC 122

Cleveland, Ontario

Canada

44106-1716

tel: (216) 844-3015

fax: (216) 844-8687

e-mail: walter.chwals@case.edu

Is The Use Of Parenteral Omega-3 Lipid Emulsions In Surgical Neonates With Mild Parenteral Nutrition Associated Cholestasis (PNAC) Justified?

Ahmed Nasr, Ivan R. Diamond, Nicole T. de Silva, Paul W. Wales

Division of General Surgery-Group for Improvement of Intestinal Function and Treatment (GIFT)

The Hospital for Sick Children, Toronto

Background/Purpose: Based on initial results of parenteral Omega-3 lipid emulsions (O-3LE) for patients with advanced PNAC, utilization has expanded to infants without established intestinal failure who have mild hepatic dysfunction. Our goal was to determine if the use of O-3LE in infants with mild PNAC [conjugated bilirubin 34 $\mu\text{mol/L}$ (cBili34) = 2 mg/dL] is justified.

Methods: Retrospective analysis of prospective data including all neonates receiving intestinal surgery between Jan 2001 – Dec 2004 (observed through Dec 2005 [era prior to O-3LE introduction]). Patients who received >1 day of PN postoperatively were enrolled. Demographic, surgical and outcome data was collected. Proportion of infants who developed advanced hepatic dysfunction was evaluated.

Results: There were 292 infants [gestational age 35.1 ± 4.5 wks; 167 (57.2%) Males; Birth Wt 2396 ± 959 gms]. Most common diagnoses included Atresias (21.6%), Gastroschisis/Omphalocele (20.9%), and NEC (17.1%). 104/292 (35.6%) patients developed cBili34 after a mean of 22 days. Thirty-one cBili34 patients (29.8%) reached Bili100 $\mu\text{mol/L}$ and 13 (12.5%) developed liver failure. Four of 104 (3.8%) underwent transplantation and 5 (4.8%) died from hepatic disease. 86 cBili34 patients (82.7%) weaned off PN within the study period.

Conclusions: Presently, due to the lack of efficacy and safety data from controlled trials, unknown consequences to growth and development, and significant expense, O-3LE should be reserved for infants with established intestinal failure and advanced PNAC who have a legitimate risk of developing irreversible liver disease. As 88% of cBili34 surgical infants never develop advanced hepatic dysfunction, it is difficult to justify this therapy in a low risk population outside of formal research protocols.

Original Paper Trainee Presentation

Senior Author: Paul W. Wales

Corresponding to:

Paul W. Wales

The Hospital for Sick Children

Rm 1526, 555 University Avenue

Toronto, Ontario

Canada

M5G 1X8

tel: (416) 813-6996

fax: (416) 813-7477

e-mail: paul.wales@sickkids.ca

Does the Colon Play a Role in Intestinal Adaptation in Infants with Short Bowel Syndrome? A Multiple Variable Analysis.

Ivan R Diamond, Marie-Chantal Struijs, Nicole T de Silva, Paul W Wales
Group for Improvement of Intestinal Function and Treatment,
The Hospital for Sick Children, Toronto, Ontario, Canada.

Background/Purpose: We sought to examine in a multiple variable model the impact of residual colonic length on time to intestinal adaptation in a cohort of infants with Short Bowel Syndrome (SBS) who had data collected prospectively over a 5-year period.

Methods: Infants with a surgical diagnosis of SBS who underwent operation \leq 90 days of age were included in this analysis. Univariate cox-proportional hazards models for time to full enteral feeds were developed. Predictors significant at the 0.2 level were entered into a backward stepwise multiple variable (MV) cox-proportional hazards model.

Results: 107 infants were included in the cohort (70 adapted). Predictors meeting criteria for the MV model were: Multidisciplinary management ($p=0.039$), Serial Transverse Enteroplasty procedure ($p=0.061$), percent small bowel remaining ($p<0.001$), percent large bowel in continuity ($p><0.001$), preserved ileocecal valve ($p=0.001$), number of septic ($p><0.001$) and central line complications ($p><0.001$). Variables not selected for the MV model included: age at surgery, gestational age, gender, birth weight, and SBS etiology. The final MV model included: Multidisciplinary management (HR [hazard ratio]: 1.932, 95% CI {confidence interval} 1.137-3.281), percent small bowel (HR: 1.028, 95% CI: 1.02-1.04) and septic events (HR: 0.695, 95% CI: 0.6-0.805).>

Conclusions: Our results suggest that the colon does not play a significant role in intestinal adaptation. However, in addition to the highlighting the importance of residual small bowel length, our model highlights the benefit of multidisciplinary intestinal rehabilitation including the importance of reducing septic complications in achieving intestinal adaptation in infants.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr Paul Wales

Senior Author: Dr Paul Wales

Corresponding to:
Dr Paul Wales
Division of General Surgery
555 University Avenue, Rm 1526
Toronto, Ontario
Canada
M5G 1X8
tel: (416) 813-6996
fax: (416) 813-7477
e-mail: paul.wales@sickkids.ca

The influence of nutrients, biliary-pancreatic secretions and systemic trophic hormones on intestinal adaptation

Taqi, Esmaeel¹; Wong Victor¹, Wallace Laurie E, ¹ de Heuvel Elaine¹, Zheng H², Berthoud H², Holst Jens J³, Sigalet David L¹

1. Room 1746- HSC, University of Calgary, Calgary, AB, Canada.
2. Pennington Biomedical Research Center, Louisiana State University System, Baton Rouge, LA, USA.
3. University of Copenhagen, Copenhagen North, Denmark

Background/Purpose: Intestinal adaptation following major intestinal resection requires nutrient stimulation. However, the relative importance of direct mucosal stimulation by nutrients, the additive effects of biliary-pancreatic secretions, and induced enteric hormones are unclear.

Methods: To study the relative effect of intra-luminal factors and enteric hormones on intestinal adaptation, a roux-y model of short bowel syndrome (SBS, GRYB) in the rat was used, with comparisons to sham controls. Statistical analysis: ANOVA or paired t-test as appropriate, (P <0.05 significant)>

Results: GRYB lost weight but exhibited significant adaptive changes (increased bowel width; villus height, crypt depth and crypt cell proliferation) in the alimentary and common intestinal limbs. The bypassed biliary limb had increased width, and crypt proliferation, but no adaptation in other parameters. GRYB had elevated serum trophic enteric hormone levels (PYY and GLP-2). In the GRYB animals, mucosal content of IGF-1, bFGF, and EGF (by ELISA) were increased compared to controls; yet equal in all three limbs of GRYB. Mucosal content of KGF and TGF- α were increased in the proximal segments, but not distally, in GRYB animals.

Conclusions: Adaptation occurred maximally in intestinal segments stimulated by nutrients; partial adaptation in the biliary limb may reflect the effects of systemic hormones. Mucosal content of IGF-1, bFGF and EGF appear to be stimulated by systemic hormones, possibly due to GLP-2, while KGF and TGF- α may be locally regulated. Further studies to examine the factors mediating nutrient induced adaptation are indicated to improve therapy for SBS patients.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr Sigalet . D

Senior Author: Dr Sigalet . D

Corresponding to:

Dr Sigalet . D

Alberta Children's Hospital/Uof C

2888 Shaganappi Trail NW

Calgary, Alberta

Canada

T3B 6A8

tel: (403) 955 2271

fax: (403) 955-7634

e-mail: sigalet@ucalgary.ca

Timing and surgical management of Neonatal Testicular Torsions
Orchidee Djahangirian, Alain Ouimet¹Dickens St-Vil

Hôpital Sainte-Justine, Montréal, Quebec, Canada

Background/Purpose: Management of neonatal testicular torsions (NTT) remain controversial. The goal of the present study is to review the management of NTT.

Methods: Retrospective review of all patients with NTT from 1989 to 2007. Age, clinical presentation, investigation, management and outcomes were noted.

Results: 44 pts presented with testicular mass, scrotal discoloration, (42) and testicular atrophy (2). Median age at presentation was 1 day (0-84) with NTT occurring on the right in 22 and the side in 20. Two patients (5%) had bilateral torsion at presentation. In 33 patients, the diagnosis was confirmed by Doppler ultrasonography. Management include ipsilateral orchiectomy and contralateral orchiopexy (IOCO) (27), contralateral orchiopexy (CO) (8), bilateral orchiopexy (4), orchiectomy of the ipsilateral testis (1), and observation (1). The 2 bilateral torsions underwent bilateral orchiectomy. Median age at surgery was 25 days of age (1-912). Post-op complications occur in 8 patients (18%) mainly in patients with IOCO (4) and CO (4) operated before 10 days of age (recurrent hydrocele (3), wound infection (2), UTI (1)). Upon follow-up, patients who underwent CO developed ipsilateral testicular atrophy (7). No patients were readmitted for recurrence of torsion.

Conclusions: The most frequent management of unilateral NTT is IOCO or CO but carries an 18% complication rate particularly if surgery is performed early. There seems to be no advantage to early intervention and the need for orchiectomy is debatable. Contralateral orchiopexy should be deferred until the risks of anesthesia and surgery are improved. A prospective study would be very useful to determine the best strategy for NTT.

Original Paper
Trainee Presentation

Senior Author: Dickens St-Vil

Corresponding to:

Dickens St-Vil

3175, Côte Sainte-Catherine

Montréal, Quebec

Canada

H3T 1C5

tel: 514 345-4688

fax: 514 345-4964

e-mail: dickens-saint_vil@ssss.gouv.qc.ca

Incarceration rates in pediatric inguinal hernia: Don't trust the coding

Suad Gholoum, George Melich, Robert Baird, Jean-Martin Laberge, Pramod Puligandla

Division of Pediatric Surgery. The Montreal Children's Hospital. McGill University. Montreal, Quebec, Canada

Background/Purpose: Although recent reports have suggested optimal wait-times for inguinal hernia repair (IHR) to prevent incarceration, these may not apply to all patients, nor be feasible in the context of limited resources. We evaluated our experience with IHR to determine if patient age and interval to operation increased the risk of incarceration.

Methods: A retrospective review of children <2 years old undergoing IHR from 2004-2007 was performed. Patients were divided based on age at diagnosis (A:0-4weeks;B:4-26weeks;C:27-52weeks;D:53-104weeks). We evaluated incarceration rates in each group, defined as the need for sedation or operation to achieve reduction, and compared these to ICD-10 coding. The rate and daily risk of incarceration was evaluated for each age group and compared using the Poisson distribution ratio of incidence rate.>

Results: 251 patients were included in our analysis, with an overall mean wait-time of 77.8 days between diagnosis and IHR. Thirty-seven patients were labeled as incarcerated by ICD-10 coding, although 21 patients (56.8%) were reduced without sedation, leaving the true incarceration rate of 6.4% (16/251). Of these sixteen patients, twelve were incarcerated at index presentation. There was no difference in incarceration rates between groups (A:8.0%, B:4.8%, C:9.4%, D:7.2%) The daily risk of incarceration was 0.09% in Group A, compared to 0.06% in Group D, ($\chi^2:0.231$, $p>0.5$).

Conclusions: Our study suggests that ICD-10 coding of incarceration is an inaccurate parameter of actual irreducibility. Hernia incarceration in children awaiting IHR represented a minority of overall incarcerations in our cohort, suggesting strict wait-times may not alter incarceration risk.

Original Paper
Trainee Presentation

Senior Author: Pramod Puligandla

Corresponding to:

Pramod Puligandla

2300 rue Tupper, C-811

Montreal, Quebec

Canada

H3H 1P3

tel: 514-412-4438

fax: 514-412-4289

e-mail: pramod.puligandla@muhc.mcgill.ca

Nonoperative management of symptomatic urachal anomalies

Aaron M Lipskar MD ¹, John Layliev MD ², Richard D Glick MD ¹, Nelson G Rosen MD ¹, Andrew R Hong MD ¹, Stephen E Dolgin MD ¹, and Samuel Z Soffer MD ¹

¹ Division of Pediatric Surgery, Schneider Children's Hospital, North Shore-Long Island Jewish Health System, New Hyde Park, NY

² Department of General Surgery, North Shore-Long Island Jewish Health System, New Hyde Park, NY

Background/Purpose: Symptomatic urachal anomalies are rare disorders that consist of urachal remnants or fistulas with or without an associated cyst. Traditionally, when a urachal anomaly was recognized, operative excision was performed. There has been a shift toward the nonoperative management of urachal anomalies at many centers, although there is little in the literature to support this practice.

Methods: A retrospective chart review of patients was performed from January 2002 to March 2008. Children with a draining umbilicus and no radiographic or surgical confirmation of a urachal anomaly were excluded.

Results: Fifteen patients with symptomatic urachal anomalies were identified. The average age was 3.5 years (4 weeks to 14 years). Symptoms included umbilical drainage(n=10), abdominal pain(n=6), omphalitis(n=4), intra-abdominal mass(n=3), dysuria(n=1), recurrent urinary tract infections(n=1), and fever(n=4). The diagnosis was confirmed by ultrasound (n=12) and/or CT scan (n=4). The surgically treated cases included seven urachal cysts, two of which were infected, and one patent urachal fistula. Mean follow-up is 37 months and there have been no reported recurrences. Those treated without surgical excision included 4 patent urachal fistulas (mean follow-up 20 months - no recurrences) and three infected urachal cysts (percutaneous drainage(n=2), laparoscopic drainage(n=1); no recurrences on ultrasound at 26 months).

Conclusions: Nonoperative management of urachal anomalies is a reasonable approach and may be extended to infected urachal cysts after initial drainage. Infected cysts that are adequately drained seem to obliterate with time. Modern ultrasonography facilitates thorough follow-up. We propose a treatment algorithm for the management of suspected urachal anomalies.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Andrew R Hong

Senior Author: Samuel Z Soffer

Corresponding to:

Samuel Z Soffer
Schneider Children's Hospital
Division of Pediatric Surgery
269-01 76th Avenue, CH 158
New Hyde Park, New York
United States
11040
tel: (718) 470-3636
fax: (718) 347-1233
e-mail: ssoffer@nshs.edu

Novel treatment for Desmoplastic Small Round Cell Tumor (DSRCT): Hyperthermic Intraperitoneal Perfusion (HIPEC)

Hayes-Jordan, Andrea , Xiao, Lian Chun, Holly Green, Peter Anderson
University of Texas, MD Anderson Cancer Center

Background/Purpose: Less than 200 cases have been reported in the world literature since DSRCT was first described in 1989. To date chemotherapy, radiation therapy and surgery have resulted in a poor survival of 20% or less. We utilized continuous hyperthermic intraperitoneal perfusion(HIPEC) at the time of complete tumor resection and cytoreductive surgery as an adjunct to treatment of pediatric and adolescent patients with DSRCT. Here we assess survival as a function of disease burden and response to HIPEC in patients with DSRCT.

Methods: Twenty-three patients, with DSRCT from 1995 to 2007 were evaluated. Eight patients undergoing HIPEC with cisplatin, from 2006-2009 were compared to historical controls. Extensive cytoreductive surgery before resecting 100% of visible disease was completed at the time of HIPEC.

Results: Eight patients age ranged 6-18 years, with DSRCT underwent HIPEC. These were compared to 15 historical controls who had chemotherapy +/- radiation tx. Significant morbidity after HIPEC included renal insufficiency and gastroparesis. There were no operative mortalities. The estimated median overall 3 year survival for patients not undergoing HIPEC was 26% compared to 71% in patients who underwent HIPEC. Median disease free interval was 4 weeks for those not undergoing HIPEC and 36 weeks with HIPEC.($p=0.046$) Extrabdominal metastasis correlated with poor survival ($p=0.021$)as did amount of disease burden, and liver metastasis. ($p=0.005$)

Conclusions: HIPEC is safe in children with DSRCT. HIPEC may prolong disease free survival in selected cases of DSRCT. HIPEC may have a limited role as an adjunct to local control in patients with DSRCT.

Original Paper

Sponsoring CAPS Member: Jacob Langer

Senior Author: Andrea Hayes-Jordan

Corresponding to:

Andrea Hayes-Jordan
1515 Holcombe Ave Box 444
Houston, Texas USA 77030
Houston, Texas
United States
77030
tel: 713-794-4258
fax: 713-794-5042
e-mail: ahjordan@mdanderson.org

CD34-positive cells from Hep-T1 hepatoblastoma cell line express liver specific markers

Henning Fiegel¹, Christine Hoepfer¹, Stefan Gfroerer¹, Dietrich Kluth², Udo Rolle¹

¹ Department of Pediatric Surgery, Goethe-University, Frankfurt/M., Germany

² Department of Pediatric Surgery, University of Leipzig, Leipzig, Germany

Background/Purpose: Hepatoblastoma ist the most common liver tumor in children. In previous studies tumor cells were found which expressed stem cell markers.

To investigate stem cell marker expression in hepatoblastoma cell lines.

Methods: Hepatoblastoma cell lines (HUH-6, Hep-T3, Hep-T1) were cultured and stained for the hematopoietic stem cell marker CD-34. After detection of CD34-positive cells in Hep-T1 cell line, a magnetic cell sorting (MACS) was performed to enrich CD-34 positive cells. CD34-positive Hep-T1 derived cells were cultured. Cell growth was analyzed during culture period. Expression of cytokeratin-18 (CK-18) in cell lines were assessed by immunocytochemistry (IC) and RT-PCR.

Results: CD34-positive cells derived from Hep-T1 cell line showed a high growth potential in primary culture and after passage. CD34-positive cells showed expression of liver specific CK-18 in culture.

Conclusions: In Hep-T1 hepatoblastoma cell lines the expressing of the stem cell marker CD34 was observed. In culture of CD34-positive sorted cells a high growth potential and liver (hepatoblastoma) marker expression was detected. The data indicate the presence of stem-like cell in hepatoblastoma cell lines which may be interesting for further studies aimed to investigate the origin and pathogenesis of hepatoblastoma.

Original Paper

Sponsoring CAPS Member: Dr. Juan Bass

Senior Author: Udo Rolle

Corresponding to:

Henning Fiegel

Theodor-Stern-Kai 7

Frankfurt / M., Ontario

Germany

60590

tel: +49 69 63016659

fax: +49 69 63017936

e-mail: Henning.Fiegel@kgu.de

Comparison of Pediatric Appendicitis Outcomes Between Teaching and Nonteaching Hospitals

Shant Shekherdimian, MD, Steven L. Lee, MD, Vicki Y Chiu, MS
Kaiser Permanente, Los Angeles Medical Center

Background/Purpose: To determine the outcomes of pediatric appendicitis between a teaching and nonteaching institution.

Methods: A retrospective review of all patients <18 years treated for appendicitis over a 10-year period was performed. The teaching institution has its own General Surgery residency program and the nonteaching institution has no surgical resident involvement. Both hospitals are part of a larger system and were similar except for resident involvement. Study outcomes included postoperative morbidity and length of hospitalization (LOH).

Results: 792 patients were treated at the teaching institution (mean age=10.9 years, 61% male) and 1670 at the nonteaching institution (mean age=11 years, 62% male). The perforated appendicitis rate was 31% at the teaching institution and 26% at the nonteaching institution ($p=0.008$). For non-perforated appendicitis, despite similar rates of postoperative wound infection, abscess drainage, and readmission within 30 days between the two institutions, LOH was shorter in the teaching institution (1.4 ± 1.0 vs 1.8 ± 1.4 days, $p<0.0001$). For perforated appendicitis, abscess drainage was higher in the teaching institution (15.9% vs 6.7%, $p=0.0003$), whereas rates of wound infection, readmission within 30 days, and LOH were similar between the two institutions.

Conclusions: Children with non-perforated appendicitis cared for at a teaching institution had similar postoperative morbidity and shorter LOH compared to a nonteaching institution. In patients with perforated appendicitis, there was a higher abscess drainage rate at the teaching institution; however, LOH was similar between teaching and nonteaching institutions. Overall, the presence of surgical trainees had minimal adverse impact on the quality of care for children with appendicitis.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Sherif Emil, MD

Senior Author: Steven L. Lee, MD

Corresponding to:
Steven L. Lee, MD
4760 Sunset Blvd
3rd Floor
Los Angeles, California
United States
90027
tel: 323-783-5442
fax: 323-783-8747
e-mail: slleemd@yahoo.com

Nonparasitic splenic cysts in children: current status

CK Sinha¹, M Agrawal

University Hospital of Lewisham, London, UK

Background/Purpose: Aim was to evaluate current status of nonparasitic splenic cysts (NPSC) in children.

Methods: All the children, who presented with NPSC, were reviewed. A systematic study of the English literature over the last 20 years was also done. Data was analysed with respect to the type of cysts, mode of presentation, management and complications.

Results: We treated 6 children (male 3; median age 12 years). Two presented with large (25; 15cm) cysts and underwent open partial splenectomy without recurrence. Other four had asymptomatic, small cyst (<5cm) and are being followed up conservatively.

After critical review of 249 abstracts, 25 studies (166 cases; median age 11 years, male=female) were included. Types of cyst were congenital (82%), traumatic (15%) and hamartomatous (3%). Modes of presentation were abdominal pain (46%), incidental diagnosis (47%), history of trauma (11%). Procedures performed were: open 60% [11% (total splenectomy-TS), 29% (partial splenectomy-PS) and 20% (cystectomy-CY)]; laparoscopic 40% [2% (TS), 4% (PS), 34% (CY/partial decapsulation/unroofing)]. Recurrences: open procedures (2%); laparoscopic procedures (41%)[P<0.0001]. Most recurrences were seen in lap. cystectomy & partial decapsulation/unroofing.

Conclusions: Most common NPSC were congenital. For bigger cysts, open/ laparoscopic partial splenectomy was the safe choice. Laparoscopic cystectomy, partial decapsulation/unroofing procedures had unacceptably higher recurrences and hence not recommended. Smaller cysts (<5cm) were treated conservatively.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: We will give soon. Thanks.

Senior Author: Ms M Agrawal

Corresponding to:

Mr CK Sinha

28 Ford End

Woodford Green

London, Other

United Kingdom

IG80EG

tel: 0044 7765021330

fax: 0044 2086901963

e-mail: cksinha@btinternet.com

Increasing prevalence of Complicated Gallbladder disease in children – Is there a correlation between obesity and complicated disease?

Kristin Baltazar¹, William McNamara¹, Yi-Horng Lee²

¹Department of Surgery, School of Medicine, State University of New York at Buffalo

²Division of Pediatric Surgery, Department of Surgery, University of Rochester Medical Center

Background/Purpose: Gallbladder disease has traditionally been considered an adult disease with risk factors being obesity, fertility and female sex. However, the incidence of gallbladder disease has been rising among the pediatric population in recent years, and the etiology is unclear

Methods: A retrospective review of all pediatric patients (age 0-21yr) undergoing cholecystectomies between 1/2002 and 12/2008 at a free-standing children hospital was conducted. Information collected include patient's demographics, indications for cholecystectomy, and body morphometric data. Patients with hemoglobinopathies, TPN associated cholestasis, malignancy and incomplete records were excluded. Patients were grouped into complicated gallbladder disease (including gallstone pancreatitis, confirmed or suspected choledocholithiasis and acute/chronic cholecystitis), and uncomplicated gallbladder disease (symptomatic cholelithiasis and biliary dyskinesia).

Results: 78 patients were eligible for analysis after exclusion criteria were applied. 75 were female; and the average age was 15.4 yo (range 6.2-19.8 yo). The results were summarized in the table. Laparoscopic cholecystectomies were attempted in all but one patient who had multiple prior abdominal operations. Three required conversion to open.

2002 2003 2004 2005 2006 2007 2008

Group 1 3 4 7 4 12 9 10

Group 2 3 3 5 4 5 6 3

Avg age 14.8 14.1 15.2 15.5 16.7 14.8 15.5

Avg BMI 32.81 26.06 27.1 24.61 26.94 29.36 32.06

Number of patients with BMI>25 6 4 7 3 9 11 11

Conclusions: The number of complicated gallbladder diseases increased over the years, and it correlated the rising incidence of obesity. Laparoscopic cholecystectomies continue to be the treatment of choice.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: Guy Brisseau

Senior Author: Yi-Horng Lee

Corresponding to:

Yi-Horng Lee

601 Elmwood Ave. Box SURG

URMC-Department of Surgery

Rochester, New York

United States

14642

tel: (585)273-1753

fax: (585)276-2370

e-mail: yihornglee@hotmail.com

Nissen fundoplication for children with severe gastroesophageal reflux disease and congenital cardiac disease: one center's experience

Noura Al-Musa MD, Rana Al-Hossaini MD, Saud Al-Shanafey MD
King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia

Background/Purpose: Gastroesophageal reflux disease (GERD) is fairly common in children with severe congenital cardiac disease (CCD). We reviewed our experience with the management of GERD in CCD patients who underwent Nissen Fundoplication (NF) over the last 8 years.

Methods: A retrospective chart review was conducted on all CCD patients who underwent NF for the management of GERD over that period. Demographic, clinical and follow up data were collected and descriptive data were generated.

Results: 32 CCD patients underwent NF for severe GERD over that period, 28 (88%) of them were performed in the last 2 years. 18 males and 16 females with a mean age of 21 months. All patients had complex multiple cardiac defects and were corrected surgically. Diagnoses included hypoplastic left heart syndrome (5), tetralogy of Fallot (2), aortic coarctation (5), atrioventricular canal defect (4), transposition of great vessels (3), pulmonary atresia (5) complex ventricular septal defect (13). 25 Patients presented with respiratory symptoms (78%), 15 with failure to thrive (47%), and 7 with swallowing in-coordination (22%). All patients underwent NF and gastrostomy tube insertion (31 performed laparoscopically). Mean follow up was 17 months. All patients had resolution of their symptoms except 4, and 3 died secondary to cardiac disease. Mean weight pre and post surgery were 4.8 Kg and 7.5 Kg respectively.

Conclusions: Laparoscopic NF and GT insertion is an effective and safe option for patients with CCD and severe GERD. Our data may suggest a change of attitude towards the management of severe GERD in patients with CCD.

Original Paper
Trainee Presentation

Senior Author: Saud Al-Shanafey MD

Corresponding to:
Saud Al-Shanafey MD
Dept Of Surgery, Pediatric Surgery
P O Box 3354, MBC-40
Riyadh, Other
Saudi Arabia
11211
tel: (966)555428080
fax: (966)14427772
e-mail: saud132@hotmail.com

Correlation of complex ascites with intestinal gangrene and perforation in neonates with Necrotizing Enterocolitis.

Whitney McBride, Sudeep Roy, Adele Brudnicki and Gustavo Stringel
Maria Fareri Children's Hospital
New York medical College.

Background/Purpose: This retrospective study attempts to correlate the finding of complex ascites on ultrasound with intestinal perforation or gangrene in neonates with complicated necrotizing enterocolitis (NEC).

Methods: Pediatric surgery was consulted in 76 neonates with NEC from 2005 to 2008. Twenty three babies with NEC without free air had a bedside abdominal ultrasound. Neonates with pneumoperitoneum were excluded from this study as this was an absolute indication for surgical intervention.

Results: Twelve of the 23 neonates who had a bedside abdominal ultrasound were found to have ascites with debris or complex ascites. One of the 12 patients improved with medical management and the ascites resolved. Five patients were critically ill and were managed with bedside peritoneal drainage. Of those, 4 had drainage of intestinal contents after placement of the drain. One of the 5 babies who had a drain placed for complex ascites, had no evidence of perforation but subsequently died of progressive disease. Six neonates with ascites with debris were subjected to laparotomy; all had confirmed gangrene or intestinal perforation.

Conclusions: The presence of complex ascites with debris correlates well with intestinal gangrene or perforation. Neonates with complicated NEC without clear indication for surgical intervention would benefit from bedside abdominal ultrasound evaluation.

Original Paper
Trainee Presentation

Senior Author: Gustavo Stringel

Corresponding to:
Gustavo Stringel
21 Addison Street
Larchmont, New York
United States
10538
tel: (914)833-2311
fax: (914)594-4933
e-mail: GStringel@aol.com

Bishop-Koop Anastomosis: Is It Still Useful?

Catherine Paris, Ann Aspirot, Mona Beauoyer
CHU Sainte-Justine, Montréal, Quebec

Background/Purpose: First described as a meconium ileus treatment, Bishop-Koop anastomosis (BKA) has lost popularity nowadays. Safety and usefulness of BKA was evaluated at our institution.

Methods: A retrospective chart review of patients who underwent BKA between 1989 and 2009 was conducted. Data collected included demographics, diagnosis, surgeries, pathology reports, and complications.

Results: Thirty children had a BKA, twenty-two (7 meconium ileus, 15 bowel atresias) as a first intervention at a median age and weight of 1[0-15] days and 3,0[1,3-4,9] kg. Eight patients (1 gastroschisis with bowel atresia, 1 persistent meconium ileus, 1 anastomotic stenosis, 2 functional obstructions, and 3 high-output end stomas) had BKA as a later procedure at a median age of 68[5-208] days. Five (16,7%) patients had BKA-related complications: 2 anastomotic leaks, 2 anastomotic stenosis, and 1 persistent meconium ileus requiring surgery. Of them, 3 had important associated anomalies such as 2 gastroschisis and 1 non-diagnosed Hirschsprung. Twenty-seven children underwent stoma closure. Elective surgeries were done using a peristomal incision and chimney closure. Only 4 patients had more than minimal stool output by the stoma at closure time. No stoma prolapse or high-output stoma were noted. No death was linked to BKA surgery. Median follow-up is 29[2-190] months.

Conclusions: BKA is a useful and safe procedure for meconium ileus and bowel atresia. It has some advantages compared to end stoma with mucous fistula. Complications are more often seen in children with associated intestinal anomalies. BKA should be kept in the armentarium of the pediatric surgeon when treating intestinal problems in children.

Original Paper
Trainee Presentation

Senior Author: Mona Beauoyer

Corresponding to:
Mona Beauoyer
3175, Côte Sainte-Catherine
Montréal, Quebec
Canada
H3T 1C5
tel: 514 345-4688
fax: 514 345-4964
e-mail: mona.beauoyer.hsj@ssss.gouv.qc.ca

Is routine preoperative 2D echocardiography necessary for infants with esophageal atresia, omphalocele, or anorectal malformation?

Ahmed Nasr¹, Patrick McNamara², David Levin¹, James Andrew², Helen Holtby³, Jacob C. Langer¹

¹ Department of Paediatric Surgery, ² Department of Neonatology, ³ Department of Anesthesia
The Hospital For Sick Children - Toronto. Canada.

Background/Purpose: Infants with esophageal atresia (EA), omphalocele, and anorectal malformation (ARM) often have associated congenital heart disease (CHD). Recognition of significant CHD is essential before going to the operating room. However, routine urgent echocardiography may be unavailable and surgery may therefore be delayed in some cases. We wished to determine if routine echocardiography is necessary in all patients with these diagnoses, or if appropriate patients could be selected.

Methods: Retrospective review of all infants admitted to the NICU with EA, omphalocele, or ARM over 5 years (2003-2008). Clinically relevant findings in the cardiovascular examination (murmur, tachycardia, abnormal four limb blood pressure, cyanosis, shock), abnormalities in respiratory examination (intubation, tachypnea, desaturations) or abnormal chest x-ray (cardiomegaly, abnormal pulmonary vasculature) were documented. Cardiac defects were categorized according to their clinical impact (major or minor), to differentiate those disorders which may influence timing of surgical intervention.

Results: Eighty-six infants were identified (33 EA, 21 omphalocele, 32 ARM). Thirty-seven (42.9%) patients had CHD on echocardiography evaluation of which 11 (12.7%) were classified as major and 26 (30.2%) were minor. The sensitivity, specificity, PPV and NPV of abnormal clinical and radiological combined assessment for a major cardiac defect were 100% (95% CI, 0.76-1), 64% (95% CI, 0.61-0.64), 28% (95% CI, 0.22-0.29) and 100% (95% CI, 0.94-1.00) respectively.

Conclusions: Normal clinical and radiological examination predicted absence of a significant cardiac abnormality on echocardiography in 100% of cases. We conclude that routine echocardiography is not necessary, but should be reserved for infants with abnormal clinical and/or radiological findings.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr Jacob Langer

Senior Author: Dr Jacob Langer

Corresponding to:

Dr Jacob Langer
The hospital for sick children . 555 University avenue
Department of General Surgery
Toronto, Ontario
Canada
M5G1X8
tel: 4168137500
e-mail: jacob.langer@sickkids.ca

Fetal surgery in the sheep model of myelomeningocele allows normal bladder development.

Encinas JL, Luis Avila LF, Tovar JA
La Paz Hospital. Madrid. Spain.

Background/Purpose: To assess if a surgically induced model of myelomeningocele (MMC) in sheep produces bladder malformations like those observed in human disease associated to voiding dysfunction and to determine if fetal surgical repair allows normal bladder development.

Methods: MMC was created in 13 fetal lambs between 60 and 80 days of gestation. Six did not undergo fetal repair (group A), 4 were repaired with an open two-layer closure (group B) and 3 with fetoscopic coverage using bioglue (group C). Clinical assessment of motor and urinary behaviour was performed at term. Bladders were examined externally and in transversal sections. Histological changes were assessed using H-E and Masson.

Results: Seven lambs died in utero (53%). Three lambs in group A (50%), 2 in group B (50%) and 1 in group C (33%) were delivered at term (day 140) and sacrificed within 24 hours. Lambs in group A were paraplegic and incontinent for urine. Macroscopically, bladders were severely dilated and thin. Microscopically they showed some fibrous tissue lying immediately subjacent to the epithelium that was obviously thinner than controls. Muscular layer was thin and partially disrupted. The lamb in group C shows only moderate thinning of the muscular layer. Bladders in group B showed none of these changes.

Conclusions: Some of the bladder abnormalities associated to MMC in human patients are also found in the uncorrected fetal lamb model. Open two-layer prenatal closure could prevent completely these malformations, while percutaneous coverage using bioglue seems to prevent them partially.

Original Paper

Sponsoring CAPS Member: Tovar JA

Senior Author: Tovar JA

Corresponding to:

Encinas JL
Trv. Collado Mediano 2
Las Rozas. Madrid., Ontario
Spain
28230
tel: +34687990031
e-mail: encinas.j@tiscali.it

The Endoscopic Retrograde Cholangiopancreatography, Useful And Safe In Children

Catherine Paris, Jimmy Bejjani, Mona Beaunoyer, Alain Ouimet
CHU Sainte-Justine, Montréal, Quebec

Background/Purpose: The endoscopic retrograde cholangiopancreatography(ERCP) is a well recognized diagnostic and therapeutic tool in the adult population. Its use in children has increase over the last years but there is little data on safety and usefulness of that procedure in children. The aim of this study is to review the experience with ERCP in a tertiary university center dedicated to children.

Methods: Retrospective chart review of patients who had an ERCP between 1990 and 2007. Data collected were: demographics, diagnosis, anesthesia type, treatments realized and complications.

Results: Thirty-eight ERCP were performed on 29 patients. There were 21(72%) girls and the mean age at procedure was 10,4 years(4-18). Indications for ERCP were : 29 recurrent or chronic pancreatitis(76%), 8 common bile duct obstruction(21%) and 1 choledochal cyst(3%). Majority had only one procedure performed, 2 children had two and 1 child with papillary stenosis had eight interventions linked to stent treatment. The ampulla was cannulated and the procedure successfully completed in 97%(37/38) of cases. General anesthesia and sedation were performed in 74% and 26% of procedures respectively. Endoscopic treatment was done in 21% of cases. Complication rate was 13,5%: 4 acute pancreatitis that resolved with conservative treatment. Follow-up was available for 79% of patients for a median length of 43 months(1-53).

Conclusions: ERCP can be used as a diagnostic and therapeutic procedure in children with a complication rate similar to that seen in adults. Need for general anesthesia is much more frequent with children. When performed by experienced endoscopists, ERCP is useful and safe in children.

Original Paper
Trainee Presentation

Senior Author: Alain Ouimet

Corresponding to:
Catherine Paris
3175, Côte Sainte-Catherine
Montréal, Quebec
Canada
H3T 1C5
tel: 514 345-4688
fax: 514 345-4964
e-mail: happycat_007@hotmail.com

Single Port Laparoscopic Appendectomy: The Evolution Of Minimally Invasive Surgery In The Pediatric Population

Keith A. Thatch, M.D., Timothy J. Fairbanks, M.D. Kim G. Mendelson, M.D., Ph.D., Marshall Z. Schwartz, M.D, Shaheen J. Timmapuri, M.D., Rajeev Prasad, M.D., Matthew L. Moront, M.D., L. Grier Arthur, M.D.
St. Christopher's Hospital for Children/Drexel University College of Medicine, Philadelphia, PA, U.S.A.

Background/Purpose: Single port laparoscopy is a rapidly evolving technique in minimally invasive surgery. However, experience in the pediatric population remains limited. We report our series of single port laparoscopic appendectomy in the pediatric age group.

Methods: Ten single port laparoscopic appendectomies {mean age 12.2 (range 7-16) years} were compared to the ten most recent non-ruptured appendectomies performed by traditional laparoscopy {mean age, 12.2 (range 7-17) years}. The single port operations were performed through either a curvilinear (mean 2.63cm) or vertical (mean 1.64cm) umbilical incision utilizing standard laparoscopic trocars and instruments. Each patient's age and weight, operative time, incision length, post-operative pain medication requirements, and length of postoperative stay were evaluated.

Results: Single port (mean weight, 52.1kg) and traditional (52.9kg) laparoscopic appendectomies were completed in all patients without the need for conversion to the open technique. Despite being contrary to the laparoscopic principle of triangulation, the in-line positioning of the laparoscope and minimally invasive instruments allowed for statistically equivalent operative times (single port, mean 62.0 minutes; traditional, 57.8 minutes). Post-operative narcotic doses {1.7(single port) vs. 1.8(traditional)} and non-narcotic doses {1.4(single port) vs. 1.3(traditional)} and length of postoperative stay {30.7(single port) vs. 32.4(traditional) hours} were also statistically equivalent to traditional laparoscopic appendectomies. No patients have experienced a post-operative complication.

Conclusions: Our experience demonstrates the feasibility, safety and improved cosmesis of single port laparoscopic appendectomy in the pediatric population. More extensive prospective randomized trials with longer follow-up are necessary to determine if this new technique is equivalent to or better than traditional laparoscopy.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Matthew Moront, M.D.

Senior Author: L. Grier Arthur, M.D.

Corresponding to:

L. Grier Arthur, M.D.

St. Christopher's Hospital for Children

E Erie Avenue at North Front Street

Philadelphia, PA 19134

Philadelphia, Pennsylvania

United States

19134

tel: 001-215-427-5292

fax: 001-215-427-4616

e-mail: grier.arthur@tenethealth.com

Laparoscopic-Assisted Roux-En-Y Hepatoenterostomy In 218 Children With Congenital Biliary Dilatation

Long LI , Mei DIAO , Hui YE

Department of Paediatric Surgery, Capital Institute of Paediatrics, Beijing, China

Background/Purpose: To evaluate the outcomes of laparoscopic hepatoenterostomy in treatment for children with congenital biliary dilatation (CBD).

Methods: Two hundred and eighteen CBD patients (M/F: 56/162, mean age 4.16 yrs, range from 7 days to 18 yrs) underwent laparoscopic cyst excision with Roux-en-Y hepatoenterostomy between 2001 and 2009.

Results: The operation was accomplished laparoscopically in 215/ 218 (98.6%) patients. Three patients (1.4%) were converted to open surgery because of severe adhesion between cystic wall and the surrounding tissues. Average operation time was 3.56 hrs. Mean operation bleeding was 9.62 ml. Thirty-three of 218 (15.1%) patients were associated with hepatic ductal stenosis and underwent laparoscopic cyst excision and ductoplasty. Except 2 patients (0.9%) suffered bile leaks, other patients recovered uneventfully with post-operation hospital stay ranged from 3 to 6 days. Average post-operation abdominal drainage removal was 3.74 days. Mean restorations of normal bowel movement, urination and feeding were 2.36 days, 1.81 days and 2.91 days respectively. All patients were followed up for 6 months to 8.5 years. Only 2 patients (0.9%) developed Roux-Y limb intestinal obstructions at the sixth month after operation. No bile reflux, anastomotic stenosis, cholangitis or biliary stone debris occurred in long-term follow-up. Surprisingly, laboratory tests showed ALT, AST, ALP, GGT, TBIL, DBIL and blood amylase significantly decreased and returned to normal level within 16 weeks.

Conclusions: Laparoscopic hepatoenterostomy is feasible, safe and effective in the treatment of CBD in children. Magnified view provided by the laparoscopy is greatly helpful for safe cyst dissection and accurate anastomosis. Its long-term results are superior to open surgery.

Original Paper

Senior Author: Long LI

Corresponding to:

Long LI

No.2 Ya Bao Road, Chao Yang District, Beijing, China

Beijing, Other

China

100020

tel: 86-13671268169

e-mail: psp3001_1@hotmail.com

Early Experience with Single-site Laparoscopic Cholecystectomy: First Fifteen Cases

Scott C. Boulanger, Walter J. Chwals, Todd A. Ponsky
Rainbow Babies and Children's Hospital, Case Western Reserve School of Medicine

Background/Purpose: Background: A recent emerging technique in minimally invasive surgery is the use of single port access. This has been facilitated by the use of high dexterity laparoscopic instruments. Experience with single site surgery in children has so far been quite limited. We report our early results of the first 15 patients undergoing single-site laparoscopic cholecystectomy at our institution.

Methods: Methods: A retrospective chart review was performed of the operative database at Rainbow Babies and Children's Hospital in Cleveland. Fifteen patients undergoing single-site laparoscopic cholecystectomy from August 2008 to the present were identified. Operative data including operative time, conversion rate and complications were analyzed

Results: Results: Fifteen patients underwent single-site laparoscopic cholecystectomy from August, 2008 to March 2009. Operative time ranged from 3 hours to 54 minutes. There was one conversion to standard laparoscopy and no significant blood loss or complications were identified.

Conclusions: Conclusion: Single-site laparoscopic cholecystectomy appears to be a safe and technically viable option to standard laparoscopy. Cosmetic outcomes are excellent. Greater experience and prospective trials will be necessary for a true comparison to standard laparoscopy

Original Paper

Sponsoring CAPS Member: Guy Brisseau

Senior Author: Scott Boulanger

Corresponding to:

Scott Boulanger
11100 Euclid Ave RBC122
Cleveland, Ohio
United States
44106
tel: (216) 844-3015
fax: (216) 844-8687
e-mail: scb5700@yahoo.com

Efficacy of thoracoscopy for lung nodule resection

Belinda Dickie, Roshni Dasgupta

Department of Pediatric General and Thoracic Surgery,
Cincinnati Children's Medical Center
Cincinnati, OH

Background/Purpose: Video-assisted thoracoscopic surgery (VATS) is an important tool in the work-up of lung nodules in pediatric oncology patients. Accurate identification of lung nodules has important prognostic value and guides therapy. The aim of this study was to look at our institution's experience of VATS resection of lung nodules compared to thoracotomy resection in children with cancer.

Methods: A retrospective review of pediatric cancer patients in our institution that underwent thoracotomy or VATS for resection of lung nodules between 1998 and 2007.

Results: 50 patients underwent either a thoracotomy or thoracoscopy for removal of lung nodules. Patients presented with lung nodules during work-up for metastasis or for during routine surveillance. In total, 21 thoracotomies (5 VATS converted to open - conversion to an open procedure was because of the inability to identify the lesion via thoracoscopy in all cases), and 48 VATS were performed for discrete masses seen on pre-operative CT scans. 9 required pre-op localization with CT (wire localization (8), methylene blue (1)). These lesions ranged from 1 to 3.8 mm (mean 2.35mm) with the mean size of non-localized lesions was 9.76 mm \pm 0.86 mm. All resected specimens contained the nodule of interest. 46/68 (67%) of the specimens were metastatic disease, the other diagnoses included bronchiolitis obliterans(9), granulomatous diseases(6), atelectasis (4), and pneumonia(4).

Conclusions: Pre-operative localization with CT guidance and thoracoscopy can identify non-visible lesions, which previously would require thoracotomy. The use of minimally invasive techniques to biopsy lung nodules in pediatric oncology patients allows for accurate diagnosis and rapid recovery.

Original Paper
Trainee Presentation

Senior Author: Roshni Dasgupta

Corresponding to:

Roshni Dasgupta
3333 Burnet Ave
3333 Burnet Avenue
Cincinnati, Ohio
United States
45229
tel: 5136364371
fax: 5136367657
e-mail: roshni.dasgupta@cchmc.org

The Extended Surgical Time-Out: Does It Improve Quality and Prevent Wrong-Site Surgery?

Steven L. Lee, MD, Shant Shekherdimian, MD, Roman M. Sydorak, MD, Stanley T. Lau, MD
Kaiser Permanente, Los Angeles Medical Center

Background/Purpose: To review the initial results of implementing an extended surgical time-out (STO).

Methods: Starting January 2006, an extended STO was implemented and performed by all operative team members confirming the patient, technical/anesthetic details, administered and available medications, and need for blood products/special equipment. To avoid disrupting work-flow, the STO was performed after induction of anesthesia. Starting October 2007, the STO was performed before induction of anesthesia. Initial results, time to incision, and operative team surveys were reviewed before and after implementing the pre-induction STO.

Results: The time to incision was similar for elective and urgent operations before and after implementing the pre-induction STO. All antibiotics were administered and confirmed during the STO. Four significant equipment findings were detected altering the planned procedure (2 before and 2 after implementing the pre-induction STO). OR staff felt more confident and prepared for the operations due to improved communication. 95% of the OR staff felt actively involved with improving patient safety (compared to 55% of the hospital staff). One near miss occurred during the post-induction STO. One wrong-site operation occurred despite the pre-induction STO due to inadequate marking. Root cause analysis demonstrated this was due to a systems error.

Conclusions: Performing the extended STO before induction of anesthesia improved communication among the surgical team and did not disrupt operative work-flow. An extended STO may also have broader value such as confirming timely antibiotic administration or other quality measures. The extended STO did not eliminate wrong-site surgery. However, implementation of the STO placed the whole team/system responsible for wrong-site surgery, rather than the individual surgeon.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Sherif Emil, MD

Senior Author: Steven L. Lee, MD

Corresponding to:

Steven L. Lee, MD

4760 Sunset Blvd.

3rd Floor

Los Angeles, California

United States

90027

tel: (323) 783-5442

fax: (323) 783-8747

e-mail: slleemd@yahoo.com

Port-a-cath placement: Sometimes Change is Not a Good Thing

Rod MacNeil, Steven Lopushinsky, Guy Brisseau
Dalhousie University / IWK Health Centre

Background/Purpose: Long term venous access is a core pediatric surgical procedure. In 2006 we changed the placement of subcutaneous port catheters to the lower chest in select patients for cosmetic reasons.

Methods: Data is prospectively collected on all central venous line insertions performed in our institution. We analyzed all consecutive port-a-cath line insertions from January 2006 through December 2008. Complications were defined as catheter migration or need for early removal. Chi-square test was used to compare proportions of line complications in the standard placement group versus the infero-lateral port placement group.

Results: Between January 2006 and December 2008, a total of 174 ports were placed with 15 in the lower chest (8.6%). There was a higher rate of line complication in the study group compared to standard placement (33.3% versus 10.7%, $p = 0.01$). In the study group, catheter migration occurred in 3 patients and early removal required in an additional 2 patients. Of the study patients, 3 ports were removed as they were no longer required and 7 remained in place at study end. In the control group, 60 (37.7%) were no longer required and 82 (51.6%) remained in place. There was a high rate of accidental de-accessing of ports (33.3%) in the study group.

Conclusions: Placement of subcutaneous ports in an infero-lateral position on the chest is associated with a higher complication rate, including higher catheter migration and accidental port de-access. When changing clinical practice it is important to monitor outcomes to ensure optimal patient care is maintained.

Original Paper
Trainee Presentation

Senior Author: Guy Brisseau

Corresponding to:
Guy Brisseau
Division of Pediatric Surgery
5850/5980 University Ave.
IWK Health Centre
Halifax, Nova Scotia
Canada
B3K-6R8
tel: (902) 470-8114
fax: (902) 470-7260
e-mail: guybrissea@me.com

Nonoperative management of tracheal tear in a pediatric trauma patient.

Oluwakemi Tomobi, Mary Santos, MD
University of Rochester Medical Center

Abstract: Tracheal tears are rare, but are known to be sequelae of cervical or thoracic injuries, or complications of endotracheal intubation. Rupture of the major airways after blunt trauma is a very rare complication in children, with the mortality rate being the highest within the first few hours. There are very few cases in the literature concerning the sequelae of pediatric patients who undergo conservative management after a tracheal rupture. While past reports have noted specific factors, such as sex, anatomy, and integrity of the tracheal wall as prognostic indicators in adults, there are very few that have noted the prognosis for children who undergo conservative management. We present a case of a patient who was a victim of a motor vehicle crash that resulted in a subarachnoid hemorrhage, small bowel perforation, an anterior dislocation at C7 over T1, and a vertebral body fracture at L3, who was found to have pneumomediastinum and total left lobe atelectasis. She underwent multiple abdominal and spinal surgeries, and then underwent bronchoscopy that demonstrated a posterior tracheal tear. Due to her unstable spine at the time of bronchoscopy, the decision was made not to operate on her trachea; several months later, the patient demonstrated resolution of her tracheal tear with improved aeration of her left lung.

Case Report
Trainee Presentation

Sponsoring CAPS Member: Mary C Santos, MD

Senior Author: Mary C Santos, MD

Corresponding to:

Kemi Tomobi
University of Rochester School of Medicine and Dentistry
601 Elmwood Ave Box SURG
Rochester, New York 14642
Rochester, New York
United States
14642
tel: 585 273-1753
fax: 585 276-2370
e-mail: mary_santos@urmc.rochester.edu

Changing practice in the management of venous and lymphatic malformations – Outcomes of sclerotherapy

Alan E Mortell MD¹, Roshni Dasgupta MD¹, Ravindra G Elluru MD, PhD², Denise M Adams MD³, Manish Patel DO⁴, Richard G Azizkhan MD¹

¹Hemangioma and Vascular Malformations Center, Division of Pediatric and Thoracic Surgery, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA

²Division of Pediatric Otolaryngology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA

³Hemangioma and Vascular Malformations Center, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA

⁴Department of Interventional Radiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH 45229, USA

Background/Purpose: Venous and lymphatic malformations are common in children. These lesions can result in chronic pain and cosmetic disfigurement. Historically, these lesions have been treated surgically with significant risks and often recur post-excision. The use of sclerotherapy has been used in many patients as primary therapy for these vascular malformations.

Purpose: Retrospective review of outcomes in patients with venous and lymphatic malformations using sodium tetradecyl sulfate (STS) and doxycycline, respectively.

Methods: We performed a retrospective review of the charts of all patients with venous (VM) or lymphatic malformations (LM) treated with sclerotherapy in Cincinnati Children's Hospital Medical Center (CCHMC) between 2005-2008.

Results: 44 patients with VM underwent a total of 85 procedures and 12 patients with macrocystic LM underwent 29 procedures. The most common symptoms were pain in VM (72.7%) and swelling in LM (83.3%). Complications with STS included increased pain (2.3%), dysphagia (2.3%) and ulceration (4.6%). Doxycycline proved to be very safe. An improvement in symptoms was achieved in 81.8% of VM and 91.7% of LM. Coagulation abnormalities (elevated d-dimers) were present in 71.8% of VM patients following STS sclerotherapy. No patients were identified to have a thrombo-embolic event post-sclerotherapy.

Conclusions: Sclerotherapy using STS and Doxycycline, is an effective, minimally invasive and safe method and should be used as primary therapy for the treatment of VM and macrocystic LM. All patients with altered coagulation profiles should be treated with low-molecular weight heparin to prevent thrombo-embolic complications.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Roshni Dasgupta

Senior Author: Richard G Azizkhan

Corresponding to:

Alan E Mortell

Cincinnati Children's Hospital Medical Center

3333 Burnet Avenue

Cincinnati, Ohio

United States

OH 45229-3039

tel: (513) 636-3245

fax: (513) 6367657

e-mail: alan.mortell@cchmc.org

Type-A Esophageal Atresia: A critical review of management strategies at a single center

Burjonrappa Sathyaprasad, Éva Thiboutot, Julie Castilloux, Dickens Saint.Vil
University of Montreal

Background/Purpose: To study the short and long term outcomes in the management of esophageal atresia without fistula(Type-A)with different operative strategies.

Methods: All patients undergoing Type-A atresia repair over a 15 year period(1992-2008)included. Demographic data, birth weight, gestational age, associated anomalies, and management strategies and outcomes studied.

Results: Fifteen patients with Type-A atresia(nine male)were treated in study period. The gestational ages ranged from 26 to 39 weeks and the mean birth weight was 2445g(1549-3520g). Eleven of the fifteen had associated anomalies. Thirteen patients underwent gastrostomy as the initial procedure while two underwent the Fokker procedure. Eleven patients underwent primary anastomosis at a median age of 3 months. In this group two needed myotomy of proximal pouch and two needed Collis gastroplasty to facilitate primary anastomosis. Two patients underwent a cervical esophagostomy and gastric tube replacement at four months and one year respectively. Eight patients in this group had anastomotic leaks (60%). One patient who had traction sutures pull-through after a Fokker procedure underwent a thoracotomy and primary anastomosis at two months, the other patient ultimately underwent an esophageal disconnection procedure (Bianchi) with a Roux –Y esophago-jejunostomy. All patients are on prokinetics and proton pump inhibitors. Seven have undergone anti-reflux surgery. The median length of hospital admission was four months(range 3-19 months). All patients are alive with 14/15 feeding orally.

Conclusions: Type-A esophageal atresia continues to be associated with significant morbidity despite advances in surgical techniques and intensive care. In this series native esophagus was conserved in 85% of patients with a reasonable long term outcome.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Saint.Vil, Dickens

Senior Author: Saint.Vil, Dickens

Corresponding to:
Sathyaprasad Burjonrappa
1400 Ave des Pins(O)
Apt#1204
Montreal, Quebec
Canada
H3G 1B1
tel: (312) 636-1334
e-mail: sathyabc@yahoo.com

Repair of long gap esophageal atresia without anastomosis.

Gustavo Stringel, [Camelia Lawrence](#) and Whitney McBride
Maria Fareri Children's Hospital, New York Medical College

Background/Purpose: Repair of long gap esophageal atresia represents a challenge for pediatric surgeons. There are several techniques to correct this anomaly. We describe five cases of long gap esophageal atresia successfully managed with suture approximation without anastomosis.

Methods: Five newborns were treated with suture approximation and subsequent endoscopic and fluoroscopic placement of string for guided dilatations. There were four males and one female. Three babies had esophageal atresia without fistula and two had the common type with proximal atresia and distal tracheoesophageal fistula. The babies with pure esophageal atresia had delayed repair. The two babies with the common type had repair 2 days after birth. All had a gastrostomy for feedings.

Results: All five babies recovered uneventfully. Three babies had spontaneous fistulization that allowed easy placement of guide wire and string. Two other babies required endoscopic and fluoroscopic combined fistula creation passing a long needle from the upper pouch to the lower one. Initially, all had string guided dilatations that were subsequently converted to balloon dilatations. All babies had a functioning esophagus and did not need any further surgical intervention. An average of eight postoperative dilatations were needed.

Conclusions: The baby's own functional esophagus is superior to any esophageal replacement. It behooves the pediatric surgeon to be familiar with different techniques to preserve it. Suture approximation without anastomosis is a safe technique that can be applied to long gap esophageal atresia. The downside of this technique is a prolonged hospital stay, multiple dilatations, prolonged fasting, and occupational therapy to learn to eat orally.

Original Paper
Trainee Presentation

Senior Author: Gustavo Stringel

Corresponding to:
Gustavo Stringel
21 Addison Street
Larchmont, New York
United States
10538
tel: (914)833-2311
fax: (914)594-4933
e-mail: GStringel@aol.com

Routine use of pHstudy in young children to evaluate gastro-esophageal reflux following esophageal atresia and tracheo-esophageal fistula repair

¹ Catherine Paris, ¹ Ann Aspirot, ² Christophe Faure, ¹ Arié L Bensoussan, ¹ Sarah Bouchard

¹ CHU Sainte-Justine

² Université de Montréal

Background/Purpose: Incidence of gastro-esophageal reflux(GER) following esophageal atresia and tracheo-esophageal fistula(EA-TEF) repair is high. Early diagnosis and treatment can prevent complications. Usefulness of routine pH study in young EA-TEF patients was evaluated.

Methods: Retrospective review of children with EA-TEF who underwent a pH study from 2004-2008. Demographics, associated anomalies, pH study, symptoms, and complications were collected.

Results: Twenty-three EA-TEF patients underwent a pH study. Median gestational age and birth weight were 37 weeks(33-40) and 2482g(1315-3720). Nineteen patients(83%) had associated anomalies. The pHstudy was performed at a median of 10 months(3-33), with 13(56%) positive results. Babies born under 2000g had a higher rate of reflux(80% vs 50%). Gestational age, associated anomalies and Waterston/Spitz status did not impact GER incidence. All patients(N=10; 43%) with a history of vomiting/regurgitations had GER on pHstudy. Of the seventeen patients with pulmonary symptoms(74%), 11(65%) had GER on pHstudy. Complications included anastomotic leak(N=6; 26%), fistula recurrence(N=2; 9%), pneumonia(N=6; 26%), and stenosis(N=11; 48%). The incidence of positive pHstudy in children with pneumonia and stenosis was 50% and 63%. Two patients(9%) required fundoplication.

Conclusions: Incidence of GER on pHstudy in young EA-TEF was 56%. GER was higher in children born under 2000g and in those with stenosis, gastrointestinal or respiratory symptoms. The pHstudy guided therapeutic decisions to change reflux therapy, particularly in patients with pulmonary symptoms who were not always having GER. Despite empirical therapy, complications possibly linked to GER developed. We propose to perform a pHstudy while on therapy at a younger age to assess treatment efficacy and potentially prevent GER-related complications.

Original Paper
Trainee Presentation

Senior Author: Ann Aspirot

Corresponding to:

Ann Aspirot

3175, Côte Sainte-Catherine

Montréal, Quebec

Canada

H3T 1C5

tel: 514 345-4688

fax: 514 345-4964

Quality Of Life In Neurologically Impaired Children With Gastroesophageal Reflux Disease

Sanjay Mahant MD^{1,2}, Aimee C. Pastor RN MN¹, David Nicholas SW³, Laurie DeOliveira SW¹, Jacob C. Langer MD^{1,2}

¹Hospital for Sick Children, Toronto, ²University of Toronto, ³University of Calgary

Background/Purpose: Neurologically impaired (NI) children with gastroesophageal reflux disease often require tube feeding using gastrostomy and fundoplication or gastrojejunostomy (GJ) tube. Although quality of life (QOL) is the most important outcome measure for these interventions, it is unclear how best to measure QOL in this population. The objective of this study was to investigate QOL and its determinants in NI children who have undergone fundoplication or GJ tube insertion.

Methods: Semi-structured interviews were conducted with parents of NI children who had undergone fundoplication (n=8) or GJ tube (n=8). Data included parents' perceptions of QOL, health, caregiving, and family functioning in the context of these two interventions. Data was analyzed using qualitative content analysis.

Results: The QOL of the child and parent were inter-dependent and affected in all spheres: physical, social, emotional and material well being. Physical health concerns and 'the future', social isolation, intense care giving needs, impact on parents and the family unit, and financial strain emerged as themes. Parents found meaning in their child's illness and reset family priorities as coping strategies. Surgical interventions affected QOL by influencing physical, emotional and social wellbeing, caregiving and health care utilization.

Conclusions: The QOL of neurologically impaired children, parents and families are mutually linked and inter-dependent. Both children and parents experience profound and deleterious effects on QOL. The child and parents also exhibit means to adapt and incorporate challenges. Outcome measurement should account for child and family well being, caregiving issues, and health care utilization.

Original Paper

Sponsoring CAPS Member: Jacob C. Langer

Senior Author: Jacob C. Langer

Corresponding to:

Aimee C. Pastor

Hospital for Sick Children

Child Health Evaluative Sciences, Division of General Surgery

123 Edward Street, Suite 401

Toronto, Ontario

Canada

M5G 1E2

tel: 416-813-6542

fax: 416-813-5979

e-mail: aimee.pastor@sickkids.ca

Laparotomy versus peritoneal drain placement for perforated necrotizing enterocolitis: a meta-analysis of randomized trials.

Ahmed Nasr , Ted Gerstle

Department of Paediatric Surgery. The Hospital For Sick Children-Toronto. Canada

Background/Purpose: Perforated necrotizing enterocolitis is a major cause of morbidity and mortality in premature infants. There is considerable controversy regarding the optimal initial management: laparotomy versus peritoneal drain placement (PD). The purpose of this study was to compare laparotomy versus PD in infants with perforated necrotizing enterocolitis using the techniques of systematic review and meta-analysis

Methods: All publications describing randomized or quasi-randomized controlled trials of both interventions were sought through the Cochrane Neonatal Review Group Trials Register, and the Cochrane Central Register of Controlled Trials (CENTRAL) database. The statistical analysis was performed using RevMan 5 software. We applied tests for between-study heterogeneity chi-square (Q test) and the I² statistics to assess the appropriateness of combining studies. If the results of these tests showed heterogeneity, a random effect model was used for meta-analysis.

Results: Two randomized trials were identified and were included in the meta-analysis. Our results showed no significant difference in mortality rates between both approaches (OR 0.92 (0.50-1.68) p=0.79). Also, there was no difference in regards to the length of hospital stay (WMD 0.94 (20.3-18.4) P=0.92). We were not able to pool data from both studies in regards to parenteral nutrition dependency as this outcome was reported at 1 and 6 months in one study and 3 months in the other.

Conclusions: Our results suggest there were no differences between laparotomy versus PD with respect to mortality rates and length of hospital stay in complicated necrotizing enterocolitis. However, further randomized controlled trial is still needed with similar protocols and homogenous samples.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: Dr Ted Gerstle

Senior Author: Dr Ted Gerstle

Corresponding to:

Dr Ted Gerstle

The Hospital for sick children

555 university avenue. Department of general surgery

Toronto, Ontario

Canada

M5G1X8

tel: 4168136405

e-mail: ted.gerstle@sickkids.ca

Insulin-Receptor Is Downregulated In The Nitrofen-Induced Hypoplastic Lung

Elke Ruttenstock MD, Takashi Doi MD, Jens Dingemann MD, Prem Puri FRCS
The Children's Research Centre, Our Lady's Children's Hospital, Dublin, Ireland

Background/Purpose: The pathogenesis of pulmonary hypoplasia in congenital diaphragmatic hernia (CDH) is still poorly understood. During fetal lung development the insulin-receptor (IR) plays an important role by mediating the cellular uptake of glucose, which is a major substrate for the biosynthesis of surfactant phospholipids. In fetal rat lung IR gene expression has been revealed on type II pneumocytes. Recent studies have demonstrated that downregulation of pulmonary IR in late gestation causes pulmonary hypoplasia by inhibition of surfactant synthesis. We hypothesized that pulmonary gene expression of IR is downregulated during the late stages of lung development in the nitrofen-induced CDH model.

Methods: Timed pregnant Sprague-Dawley rats were exposed to either olive oil or nitrofen on day 9.5 of gestation (D9.5). Cesarean sections were performed on D15, D18 and D21. Fetal lungs were divided into three groups: control, nitrofen without CDH (CDH(-)) and nitrofen with CDH (CDH(+)) (n=8 at each time point, respectively). Relative mRNA levels of IR were determined by using real-time reverse transcription-polymerase chain reaction. Immunohistochemistry was performed to evaluate protein expression of IR.

Results: Relative expression levels of IR mRNA on D21 were significantly decreased in CDH(-) and CDH(+) group (3.99 ± 1.50 , 5.14 ± 0.99 , respectively) compared to control (7.45 ± 3.95 ; $p < 0.05$). Immunohistochemistry showed decreased IR expression in the alveolar epithelium on D21 in hypoplastic lungs compared to control lungs.

Conclusions: Downregulation of IR gene and protein expression in hypoplastic lung during late stages of lung development may interfere with normal surfactant synthesis, causing pulmonary hypoplasia in the nitrofen induced CDH model.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Jacob C. Langer

Senior Author: [4] Prem Puri FRCS

Corresponding to:

[1] Elke Ruttenstock MD
Children's Research Centre
Our Lady's Children's Hospital, Crumlin
Dublin -12
Dublin, Other
Ireland 12
tel: (353-1) 409 6420
fax: (353-1) 455 0201
e-mail: elke.ruttenstock@ucd.ie

Appendicitis in Children Transferred from Northern Quebec

Alana Beres, Pramod Puligandla, Saleh Al-Abbad
Montreal Children's Hospital, McGill University Health Centre

Background/Purpose: The treatment of our northern Aboriginal children (NAC) is often complicated by distance from a treating facility. We sought to compare outcomes of children with appendicitis transferred from our NAC to those who presented locally. We hypothesized that our NAC with appendicitis experienced higher rates of perforation and increased length of stay (LOS).

Methods: A retrospective chart review of 210 appendectomies was performed. Charts were reviewed for age, sex, weight, days of symptoms prior to presentation, time of transfer, leukocyte count(WBC), antibiotics prior to transfer, time to operation, type of procedure and findings, pathology, post-operative outcomes and LOS.

Results: Sixty-eight children were NAC, while 142 were local. Average transfer times for NAC was 10 hours (range 4-20 hours). The two groups had similar ages (11.1 vs. 10.7 years), time to presentation (1.64 vs. 1.85 days), and LOS (2.91 vs. 2.90 days). Significantly higher perforation rates (44 vs. 28%; $p=0.02$), higher WBC (17.9 vs. 16.0; $p=0.02$) and longer times to operation after arrival (10.28 vs. 7.0 hours; $p=0.0002$) were noted in NAC. Post-operative complications were similar between groups. Forty-seven (69%) NAC received antibiotics prior to transfer but did not affect rate of rupture.

Conclusions: NAC children with appendicitis experience higher perforation rates that may result from long transfer times and delays to operation after arrival. Pre-transfer antibiotics do not reduce perforation rates, but may impact complications. Further investigations require a larger sample size.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Pramod Puligandla

Senior Author: Pramod Puligandla

Corresponding to:
Pramod Puligandla
2300 rue Tupper
C-840
Montreal, Quebec
Canada
H3H 1P3
tel: (514) 412-4498
fax: (514)412-4341
e-mail: pramod.puligandla@muhc.mcgill.ca

Malrotation and Volvulus in Children: A Retrospective Review of 142 Patients

David Lazar D, Monica E Lopez, David E. Wesson, Mary L Brandt

Michael E. DeBaKey Department of Surgery, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas.

Background/Purpose: Large series of patients with nonsyndromic malrotation have not been reported in the modern era. We were specifically interested in reviewing whether clinical presentation has changed in the modern era.

Methods: A retrospective review was carried out of all patients undergoing Ladd's procedure for isolated malrotation from 1991-2006. Patients with significant associated anomalies (e.g. heterotaxy syndromes, gastroschisis) were excluded.

Results: 142 patients were identified. The median age at operation was 3.1 months. There were 54 neonates (<30 days), 53 infants (31 days – 2 yrs), and 35 children (>2 yrs). There were 95 boys. Patient weight averaged 36th percentile (range 3%-97%), with a median of 24th percentile. Midgut volvulus was present in 56 patients (37 neonates, 13 infants, 6 children) of which 34 were diagnosed preoperatively. The median age of patients with volvulus was 13 days. Ladd's procedures were performed open (n=133), laparoscopically (n=6) and laparoscopically converted to open (n=3). 5 patients (3.5%) required bowel resection. Serious complications occurred in 9 pts (6.3%): small bowel obstruction (4), recurrent volvulus (1), pseudo-obstruction (1), intussusception (1), upper GI bleed (1), dumping syndrome (1), short gut syndrome (1), wound infection (1), wound dehiscence (1). One patient died of sepsis following necrosis of the midgut after volvulus.

Conclusions: Midgut volvulus is present in over 40% of patients undergoing surgery for malrotation. Although more common in neonates, volvulus occurs at all ages. Volvulus is diagnosed preoperatively in approximately 50% of patients. Low weight percentiles in children with malrotation has not previously been reported. The nutritional effects of malrotation warrant further study.

Original Paper

Trainee Presentation

Senior Author: Mary L. Brandt, MD

Corresponding to:

Mary L. Brandt, MD

6621 Fannin St.

CC650.00

Houston, Texas

United States

77030

tel: (832) 822-3135

fax: (832) 825-3141

e-mail: brandt@bcm.tmc.edu

What is the Influence of Ectopic Location of the Papilla of Vater on the Radiological Features of Choledochal Cyst?

Mei DIAO¹, Long LI¹, Hui YE¹, Hai-Lin SUN², Xin-Yu YUAN²

¹ Department of Paediatric Surgery, ² Department of Radiology, Capital Institute of Paediatrics, Beijing, China

Background/Purpose: To evaluate the influence of ectopic location of the papilla of Vater on radiological features of choledochal cyst (CDC).

Methods: Intraoperative cholangiography of 121 children with CDC plus PBMU was reviewed. A length/diameter index (LI/DI) defined as the length/diameter divided by the height of the second lumbar vertebra.

Results: Twenty-one percent of patients had papilla located in descending duodenum (group 1), while 79% had papilla located distal to descending duodenum (group 2). Common channel (CC) in group 2 was significantly longer than group 1 ($p < 0.001$). Mean DI and LI of CDC, mean DI of common hepatic duct (CHD), left/right hepatic duct (L/RHD) and pancreatic duct (PD) in group 2 were significantly higher than group 1 ($p < 0.001$ respectively). Mean DI of CC and distal common bile duct (CBD) in group 2 were significantly lower than group 1 ($p < 0.001$ respectively). There were positive correlations 1) between LI of CC, DI and LI of CDC and DI of CHD, L/RHD and PD ($p < 0.001$ respectively); 2) between DI of CC and distal CBD ($p < 0.001$); and negative correlations 1) between LI of CC and DI of distal CBD ($p < 0.001$); 2) between DI of CC, DI and LI of CDC, and DI of CHD, L/RHD and PD ($p < 0.001$ respectively), i.e. severer dilatation of bile and pancreatic ducts were positively, and severer stenosis of distal CBD was negatively correlated to CC elongation presented by higher LI and lower DI of CC.

Conclusions: A downstream effect of ectopic distal location of papilla of Vater; CC elongation and distal CBD stenosis; bile and pancreatic ducts dilatation is an important etiological factor in CDC.

Original Paper

Senior Author: Mei DIAO

Corresponding to:

Long LI

No.2 Ya Bao Road, Chao Yang District, Beijing, China

Beijing, Other

China

100020

tel: 86-13671268169

e-mail: psps3001_1@hotmail.com

Biliary Atresia in a 27 week premature twin boy: genetic or acquired?

Sara Chang , Akemi Kawaguchi , Megan E Fitch, Mary L Brandt

Michael E. DeBaKey Department of Surgery, Baylor College of Medicine, Texas Children's Hospital, Houston, Texas.

Abstract: Biliary atresia is the most common cause of neonatal cholestasis. Although it is recognized as a progressive inflammatory process, the exact etiology of biliary atresia remains unknown.

The patient is a former 1090 gram, 27-4/7 week monozygotic twin boy. He was treated with phototherapy for unconjugated hyperbilirubinemia on DOL 4. A repeat bilirubin at 2 months of age revealed the presence of conjugated hyperbilirubinemia. Percutaneous liver biopsy demonstrated features consistent with extrahepatic biliary tract obstruction. Laparotomy revealed biliary atresia and the patient underwent a Kasai hepatoportoenterostomy at 107 days of age. At 9-months, he has normal growth and a total bilirubin of 0.2 mg/dl. His identical twin brother has remained well at 10 months of age.

Identical twins provide a unique opportunity to study the role of genetic and environmental factors in the pathogenesis of biliary atresia. Although rare reports of twins with discordant pathology have been reported, this is the first case of monozygotic premature twins where one twin developed biliary atresia. This case puts into question both the role of intra-uterine exposure and genetic predisposition in the etiology of biliary atresia and suggests that, at least in this case, post-natal or epigenetic factors, may have contributed to developing biliary atresia.

Case Report

Trainee Presentation

Senior Author: Mary L. Brandt, MD

Corresponding to:

Mary L. Brandt, MD

6621 Fannin St.

CC650.00

Houston, Texas

United States

77030

tel: (832) 822-3135

fax: (832) 825-3141

e-mail: brandt@bcm.edu

Do Infants with Pyloric Stenosis Benefit from the Presence of a Pre-operative Nasogastric Tube?

Ahmad Elnahas MD¹, Julia Pemberton MSc^{1,2}, Yasmin Yousef MD¹, and Helene Flageole MD, MSc^{1,2}

¹ McMaster Children's Hospital, McMaster University, Hamilton, Ontario, ² McMaster Pediatric Surgery Research Collaborative

Background/Purpose: Literature is lacking regarding the role of nasogastric tubes in patients with pyloric stenosis. There is also no consensus among surgeons. Some believe pyloric stenosis is a form of gastric outlet obstruction and the stomach should be drained until the obstruction is relieved. Others claim that infants can handle their secretions and draining the stomach may further exacerbate the alkalosis. This chart review examines the use of pre-operative nasogastric tubes in a single pediatric institution and its effect on vomiting rates and length of stay.

Methods: After REB approval, a retrospective review was performed on 109 patients admitted between January-01-2007 and December-31-2008 with pyloric stenosis and who underwent pyloromyotomy. Data was collected on presence of a pre-operative nasogastric tube, pre-operative electrolyte levels, ultrasound characteristics, episodes of post-operative vomiting, and length of stay.

Results: 106 patients were used in the final analysis. A nasogastric tube was placed in 77 patients (73%). Patients with a pre-operative nasogastric tube had significantly higher episodes of post-operative vomiting ($p=0.015$, 95% CI 0.29-2.63), and length of stay ($p=0.017$, 95% CI 2.49-25.01). Bicarbonate levels were also significantly higher in patients with a nasogastric tube. There was no difference in the duration of symptoms, ultrasound characteristics or type of operation between the two cohorts.

Conclusions: Our data strongly suggests that pre-operative nasogastric tube placement adversely affects post-operative vomiting and consequently increases length of stay. The lack of consensus about the use of pre-operative nasogastric tubes coupled with our findings indicates the need to evaluate this practice with a prospective randomized controlled trial.

Original Paper
Trainee Presentation

Senior Author: Helene Flageole MD, MSc

Corresponding to:

Helene Flageole MD, MSc
1200 Main Street West, HSC-Room 4E17
Hamilton, Ontario
Canada
L8N 3Z5
tel: (905) 521-2100
fax: (905) 521-9992
e-mail: flageol@mcmaster.ca

Long-term T-Tube Stenting as Treatment for Severe Acquired Subglottic Stenosis

A. Zaima¹, Y. Bitoh², K. Morita³, J. Tsugawa³, T. Ishii³, S. Satoh³, E. Nishijima¹

¹Division of Pediatric Surgery, Kobe Univ. Graduate School of Medicine

²Department of Pediatric Surgery, Kobe Children's Hospital

³Department of Pediatric Surgery, Takatsuki General Hospital

Background/Purpose: We analyzed our results of long-term T-Tube stenting for severe acquired subglottic stenosis (grade 3 and 4 in Cotton's classification) secondary to prolonged endotracheal intubation in a neonatal period.

Methods: Twenty patients (age range: 2-10 years) treated with long-term T-Tube stenting in our hospital since 1999 were retrospectively analyzed. Long-term T-Tube stenting consisted of anterior cricoid splitting (ACS) and placing silicon T-Tube (Koken Inc., Japan) as a stent for expanded subglottic lumen more than 6 months.

Results: All patients left hospital within a week and stayed home after T-Tube stenting, and could produce sound although it was hoarseness. Fourteen of 20 patients were treated as an initial operation and 6 patients as an additional operation after failed another procedures including endoscopic dilatation, ACS and costal cartilage grafting. Decannulation had been achieved in 8 of 14 patients (57.1%) after initial operation and in 4 of 6 patients (66.7%) after additional operation. The average duration of stenting was 16.1 months after as initial operation and 65.8 months after as additional operation. Four of 20 patients still required T-Tube stenting. In the other 4 patients, T-Tubes were converted to ordinary tracheostomy tubes because of progressive tube-tip granulation or failure of decannulation. The voice quality improved gradually after decannulation.

Conclusions: T-Tube stenting for severe acquired subglottic stenosis is appreciated as an alternative treatment in terms of postoperative quality of life. Initial operation should be recommended, since the time to decannulation was shorter compared with additional operation.

Original Paper

Sponsoring CAPS Member: Peter Kim

Senior Author: Eiji Nishijima

Corresponding to:

Azusa Zaima

2-9-21-201 Kitano-cho Chuo-ku

Kobe-city, Other

Japan

650-0002

tel: 81-78-382-5942

fax: 81-78-382-5959

e-mail: azusa@tf6.so-net.ne.jp

A comparison of traditional incision and drainage versus catheter drainage of soft tissue abscesses in children.

Adam C. Alder, MD, Jill Thornton, RN, MSN, CPNP, Kim McHard, RN, MSN, CPNP, Linda Buckins, RN, MSN, CFNP
Robert Barber, RN, Michael A. Skinner, MD

Children's Medical Center Dallas
Department of Surgery
UT Southwestern

Background/Purpose: Soft tissue infections are increasingly being seen for surgical management, which is associated with painful dressing changes, lost days at school, time away from family and scarring, which can have a great impact on both child and caretaker. We postulated that a drainage technique employing a modified Pezzar catheter would be associated with shorter hospital stays and less wound care.

Methods: A consecutive series of 400 children with soft tissue abscesses was evaluated from April 2007 to October 2008. Children were managed according to the operating surgeon's preference. Children remained in the hospital until they were afebrile and the wounds could be adequately managed at home. Drains were removed one week after surgery in clinic.

Results: There were no treatment failures. 322 children were managed with standard incision and drainage (I&D) and 78 patients with catheter drainage. 22 children in the catheter drainage group (28%) required hospitalization of greater than one day compared to 151 children (47%) in the I&D group ($p=0.001$, Fisher's exact test). 34% of the children managed with I&D required packing at home, which was required in none of the patients managed with catheter drainage. Patient age, catheter drainage and site of the lesion were associated independently with shorter hospital stays.

Conclusions: We conclude that catheter drainage of soft tissue abscesses in children is as effective as I&D. However, catheter drainage is associated with less postoperative wound care and decreased hospital stay. Other factors related to shorter hospital stays include age of the patient and the site of soft tissue abscess.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Jacob Langer, MD

Senior Author: Michael Skinner, MD

Corresponding to:
Michael Skinner, MD
5323 Harry Hines Blvd
Dallas, TX 75390-CMCH
Dallas, Texas
United States
75390-CMCH
tel: 214-456-6040
fax: 214-456-6320
e-mail: michael.skinner@childrens.com

Is the need for fascial defect extension a predictor of adverse outcome in gastroschisis?

Butterworth, Sonia A¹, , Brant, Rollin², Skarsgard, Erik D¹ and the Canadian Pediatric Surgery Network ¹Department of Surgery, BC Children's Hospital and the University of British Columbia

²Department of Statistics, University of British Columbia

Background/Purpose: The size of the fascial defect may contribute to antenatal intestinal injury in gastroschisis (GS). We hypothesized that patients who required defect extension during GS closure would experience adverse outcomes.

Methods: Using a national database, GS patients were grouped as follows: Group 1 (no extension), Group 2 (any extension), Group 3 (extension > 2cm). Risk variables included GA, BW, and presence of intestinal necrosis/atresia/perforation. Evaluated outcomes included closure success, closure site infection, bacteremia, additional abdominal surgery, discharge feeding tube/cholestasis, survival, TPN days and LOS. Student's T-tests and Fisher's Exact tests were used for continuous and binary variable comparisons, respectively.

Results: Of 249 patients, 178 had fascial defect extension data: Group 1 (135), Group 2 (43), Group 3 (22). Group 3 patients were of greater GA, had more atresias, were closed less successfully, had more bowel obstructions and required more abdominal surgeries (table 1).

	Group 1 n=135	Group 2 (n=43)	*Group 3 n=22	P-value
GA (weeks)	35.9+/-1.9	36.1+/-2.6	36.8+/-1.9	0.059**
Atresia	5	5	3	0.056¥
Necrosis	9	3	2	--
Perforation	2	2	2	--
Closure success	117	34	15	0.05**
Closure site infection	18	10	5	--
Additional intestinal OR	17	10	7	0.048**
Bowel obstruction	7	5	4	0.069**
LOS	50+/-41	63+/-68	56+/-69	--
Days TPN	38+/-33	47+/-45	46+/-47	--
Mortality	5	0	0	--

• * Group 3 = subgroup of Group 2 • ** group 1 vs 3 • ¥ group 1 vs 2

Conclusions: Fascial extension requirement may reflect worsened antenatal intestinal injury and portend select adverse GS outcomes.

Original Paper

Senior and Corresponding Author: Dr. Sonia Butterworth:

Dr. Sonia Butterworth

K0-113 ACB, BCCH

4480 Oak Street

Vancouver, British Columbia Canada

V6H 3V4

tel: (604) 875-2667 fax: (604) 875-2721

e-mail: sbutterworth@cw.bc.ca

Mediastinal Neurogenic Tumours In Children

José Carlos Fraga¹, Bahattin Aydogdu², Roberto Aufieri², Edward Kiely², Agostino Pierro²

¹ Pediatric Thoracic Surgery Unit, Pediatric Surgery Service, Hospital de Clinicas of Porto Alegre, Brazil;

² Surgery Unit, Institute of Child Health and Great Ormond Street Hospital for Children, London, United Kingdom.

Background/Purpose: To identify clinical spectrum and role of surgical resection in children with mediastinal neurogenic tumours.

Methods: With ethics approval we reviewed the case notes of 33 consecutive children (17 males) operated for mediastinal neurogenic tumour in a single institution from March 1998 to February 2008.

Results: Of the 33 tumours operated: 16 were neuroblastomas (49%), 10 ganglioneuroblastomas (30%) and 7 ganglioneuromas (21%). The median age at diagnosis was 3.4 years (range birth to 14.8 years). Only 5 (15%) of these tumours were discovered incidentally, the remaining 28 (85%) being symptomatic: cough (30%), neurological spinal compression (27%), wheezing (15%), respiratory distress (12%), dyspnea (9%) and dancing eyes syndrome (9%). Tumour resection was undertaken by open operation in 28 cases (85%) and by thoracoscopy in 5 (15%). There were no surgical deaths. Mean volume of tumour removed by thoracoscopy (13.3 ± 6.8 mls) was significantly less than that removed by thoracotomy (63.8 ± 20.5 mls) ($p=0.043$). Postoperative Horner's syndrome was seen in 5 children (15%), 2 thoracoscopic and 3 open. All other complications were observed after open surgery: chylothorax in 2 (6%), pneumothorax in 2 (6%) and thoracic empyema in a further 1 (3%). Tumour recurrence occurred in 3 children (9%) operated by open surgery. The all survival was 96.9% in a mean follow-up of 40.8 months.

Conclusions: Most children with thoracic neurogenic tumours are symptomatic at diagnosis. Surgical resection of these tumours in children is safe and with good long-term survival. The thoracoscopic approach is appropriate for smaller tumours.

Original Paper

Sponsoring CAPS Member: Prof. Agostino Pierro

Senior Author: Prof, Agostino Pierro

Corresponding to:

José Carlos Fraga

Rua Ramiro Barcelos 2350, sala 600.

Bairro Santa Cecília

Porto Alegre, RS, Other

Brazil

90035-903

tel: 55-51-33325450

fax: 55-51-3334 0146

e-mail: jc.fraga@terra.com.br

Left Sided Pediatric Pericardial Cyst: Excision Using Video-Assisted Thoracoscopic Surgery

Shane D. Lewis, MD, Monford D. Custer, III, M.D., Danny C. Little, MD

Division of Pediatric Surgery, Texas A&M Health Science Center College of Medicine at The Children's Hospital at Scott & White, Temple, TX, USA.

Abstract: A 14-year-old boy presented with an incidentally detected intrathoracic mass. CT revealed a cystic structure adjacent to the apex of the left ventricle measuring 5.1x2.7x6.4 cm. A nonoperative approach was discussed with the family; however, the unknown diagnosis caused considerable anxiety for the teenager and his family. They requested formal excision. The cyst was approached with a 4 port (5mm) thoracoscopic technique. The pericardial cyst arose from the mid-pericardium, anterior to the phrenic nerve. Electrocautery and Ligasure facilitated the dissection. Endo-loops secure the narrow stalk. A chest tube was not required. Histologically, the mass was a benign mesothelial lined cyst. The patient was discharged the following day with minimal pain. At 6 month follow-up, there as been no recurrence.

Pericardial cysts occur at the rate of 1:100,000. They result from failure of fusion of the mesenchymal lacunae that form the pericardial sac. Seventy-five percent have no associated symptoms and are usually found incidentally during chest x-ray or echocardiography. While mild symptoms including atypical chest pain, dyspnea, and cough are more often seen; cardiac tamponade, obstruction of the right bronchus, and sudden death have been reported.

CONCLUSION: Thoracoscopic surgery is an effective surgical approach for a variety of diagnosis in children. When compared to open series, advantages include improved pain control, decreased length of stay, and quicker return to normal activities. Furthermore, the diagnostic worries of the parents can be alleviated with minimal morbidity to the patient. We recommend VATS as a preferred method in the treatment of pericardial cyst.

Case Report

Trainee Presentation

Sponsoring CAPS Member: Guy F. Brisseau, MD

Senior Author: Danny C. Little, MD

Corresponding to:

Danny C. Little, MD

Dept of Surgery, Pediatric Surgery

2401 S. 31st Street

Temple, Texas

United States

76508

tel: 254-724-9138

fax: 800-236-2303

e-mail: DLITTLE@swmail.sw.org

Vertebral Fracture Associated With Abdominal Wall Bruising: A Predictive Factor Of Bowel Injury

Catherine Paris, Eva Thiboutot, Mahli Brindamour, Marianne Beaudin, Alain Ouimet, Dickens Saint-Vil
Pediatric Surgery, Hôpital Sainte-Justine, Montreal QC

Background/Purpose: Abdominal wall bruising(AWB) is a frequent finding in children wearing seatbelts involved in motor vehicle collision(MVC) and is highly suspicious, but not indicative of intestinal injury. This study was done to find objective findings that can predict the need for therapeutic laparotomy in these children.

Methods: A retrospective chart review of children admitted from 1998 and 2008 with AWB following MVC was conducted. Demographics, vital signs, physical exams, radiological investigation, associated injuries, management and outcome were extracted. Univariate statistical analyses were done using the Fisher exact test.

Results: Fifty-three children with a median age of 9 years(3-16) were included. 44 patients(83%) had abdominal pain on arrival and 25(47%) had free intra-abdominal fluid on ultrasound/scan. Intra-abdominal injuries were noted in 29 patients(55%) and the most common were mesenteric or bowel injuries 13(25%), splenic injuries 7(13%) and hepatic injuries 4(8%). Ten patients(19%) needed a therapeutic laparotomy and all were victims from collision involving two moving vehicles, had abdominal pain, free intra-abdominal fluid and a higher cardiac pulse (126 vs 104). 5 patients(50%) operated on had lumbar fracture compared to only four patients(9%) in the no-surgery group. Pulse>120(p=0.048), lumbar fracture(p=0.008) and free intra-abdominal fluid(p=< 0.001) were significant predictors for intestinal perforation. Overall survival was 98% with 1 death due to head trauma.

Conclusions: Intra-abdominal injuries in children with AWB following MVC are frequent. Associated lumbar fracture, the presence of free intra-abdominal fluid and tachycardia are highly predictive of intestinal injuries. Diagnostic laparoscopy should be considered in these patients.

Original Paper
Trainee Presentation

Senior Author: Dickens Saint-Vil

Corresponding to:
Dickens Saint-Vil
Hôpital Sainte-Justine
3175 Côte-Sainte-Catherine
Montreal, Quebec
Canada
H3T 1C5
tel: 514 345 4915
fax: 514 345 4964
e-mail: dickens_saint-vil@ssss.gouc.qc.ca

Incidence and Demographics of CNS Injuries in Children

Sultan Al-Habdan, Hala Mandora, Khalid Al-bedah, Saleem Al-enazi, Amro Al-habib, Mohammed Zamakhshary

Division of Pediatric Surgery, King Saud bin Abdulaziz University for Health Sciences
King Abdullah International Medical Research Center
Riyadh, Saudi Arabia

Background/Purpose: Little is known about the incidence of CNS injuries in the Saudi population. Our objectives were to document the incidence childhood CNS injuries in Saudi and to compare this rate to international incidence figures.

Methods: A Retrospective cohort was conducted. We reviewed the trauma database at a level one trauma center in Riyadh for eight-year period (May 2001 to March 2009). This database includes only hospital-admitted individuals following injury. Only patients less than 18 years and those with CNS injury were considered. The incidence of CNS injuries was calculated by dividing the number of patients with CNS injury over the total number of patients under 18. Descriptive statistics were performed.

Results: 3796 patients < 18 presented to our center during the study period. 1220 patients (32.1%) had CNS injuries. Average age was 8.6 yr, 957 (78.4%) were boys.

Etiology of injury included motor vehicle accidents in 417 patients (34.2%), pedestrian injury in 370 patients (30.3%), falls in 347 patients (28.4%), motorcycle accidents in 28 patients (2.3%), Violence in 16 (1.3%), others in 42 (3.4%). Children under 11 comprised (65.9%) of the cohort. Most common mode of CNS injury in the age group of 0 to 5 years was falls (45.6%). MVA was the leading cause of head injury in high school students (74.4%).

Conclusions: CNS injuries are common. Preschoolers and elementary school students are mostly affected. The rate observed in our center is higher than international reports. Further population based studies are required to examine this important public health matter.

Original Paper
Trainee Presentation

Senior Author: Mohammed Zamakhshary

Corresponding to:
Mohammed Zamakhshary
King Abdullah International medical center Mail code 1515
PO box 22490, King Abdulaziz Medical City
Riyadh, Other
Saudi Arabia
11426
tel: 966543427669
e-mail: zamakhshary@gmail.com

Randomized Controlled Trials In The Journal of Pediatric Surgery:
Quality Of Reporting Over A Ten Year Period

Khalid Al-Harbi ^{1,2,3}, Julia Pemberton ^{1,3}, Allyson Ion ¹, Peter Fitzgerald ^{1,2,3}

¹ Department of Surgery, McMaster University

² McMaster Children's Hospital

³ McMaster Pediatric Surgery Research Collaboration

Background/Purpose: The purpose of this study was to determine the quality of reporting of randomized controlled trials (RCTs) published in The Journal of Pediatric Surgery from 1998 to 2008.

Methods: A hand search of The Journal of Pediatric Surgery was conducted in duplicate and an electronic search of indexed articles was completed in PubMed for accuracy. All eligible RCTs were blinded to author, institution and year of publication. Two investigators independently abstracted the data and assessed the quality of reporting.

Results: Of 5374 articles identified, 46 (0.9%) met all study eligibility criteria for an RCT. The mean transformed Detsky score was 74.8% (SD=10.4). The main results were as follows:

- 34.8% stated random sequence generation methodology
- 39.1% stated the method of randomization concealment
- 28.3% stated sample size calculation
- 21.7% included a study flow chart
- 15.2% reported Confidence Intervals
- 10.9% reported Intention-To-Treat analysis
- 82.6% reported ethics approval
- 28.3% disclosed funding
- 10.9% stated the use of a Data Safety Monitoring Board
- 30.4% were multi-center trials

Conclusions: The majority of the 46 RCTs reviewed had multiple deficiencies in the reporting of trial methodology (type of randomization, sample size calculation, etc.). The application of standardized guidelines for the reporting of RCTs has been adopted by several journals and should be utilized in reporting pediatric surgical research.

Original Paper

Senior Author: Peter Fitzgerald

Corresponding to:

Peter Fitzgerald

McMaster Children's Hospital

1200 Main Street W, HSC-Room 4E4

Hamilton, Ontario

Canada

L8N 3Z5

tel: (905) 521-2100

fax: (905) 521-9992

e-mail: alharbik@hotmail.com

Is sonography reliable for the diagnosis of pediatric blunt abdominal trauma?

Tobias Retzlaff ¹, Wolfgang Hirsch ², Holger Till ³, Udo Rolle ⁴

¹ Department of Surgery, Klinikum Bad Salzungen gGmbH, Bad Salzungen Germany

² Department of Pediatric Radiology, University of Leipzig, Leipzig, Germany

³ Department of Pediatric Surgery, University of Leipzig, Leipzig, Germany

⁴ Department of Pediatric Surgery, Goethe-University, Frankfurt/M., Germany

Background/Purpose: Computerized tomography (CT) is considered as the imaging study of choice for blunt abdominal trauma in children. Nevertheless recent investigations clearly indicate an increased risk of cancer in children exposed to radiation during abdominal spiral CT. Therefore alternative strategies should be utilized for the diagnosis and surgical decision making in blunt abdominal trauma in children.

Methods: Retrospective analysis included all children with intraabdominal organ rupture after blunt abdominal trauma. Patients were diagnosed by a standardized emergency protocol which included primary clinical assessment and repeated ultrasound but not routine computerized tomography. Efficacy of abdominal ultrasound was evaluated in regards to safe diagnosis and appropriate surgical decision making.

Results: The study contained 35 children (age 1 4/12 – 16 years, 01/2000 – 12/2007) with intraabdominal organ rupture diagnosed by ultrasound. 7/35 of the patients were polytraumatized, 28/35 had an isolated blunt abdominal trauma. All patients underwent immediate ultrasound scanning of the abdomen and retroperitoneal space. 2/35 patients were immediately operated due to hemodynamically instability. 4/7 polytraumatized patients and 7/28 patients with isolated blunt abdominal trauma were additionally diagnosed by spiral CT. Only 1 patient underwent subsequent surgery due to the findings in the CT. Ultrasound was effective in more than 97% (34/35) of the patients for diagnosis and appropriate surgical decision making.

Conclusions: Ultrasound combined with clinical assessment presents an effective method for safe diagnosis and appropriate surgical decision making in pediatric blunt abdominal trauma. Selected cases with polytrauma and/or unequivocal findings in the ultrasound should undergo abdominal CT.

Original Paper

Sponsoring CAPS Member: Dr. Juan Bass

Senior Author: Udo Rolle

Corresponding to:

Udo Rolle

Theodor-Stern-Kai 7

Frankfurt/M., Ontario

Germany

60590

tel: +49 69 63016659

fax: +49 69 63017936

e-mail: udo.rolle@kgu.de

What is the Significance of Contrast “Blush” in Paediatric Blunt Splenic Trauma?

DA Davies¹, J Traubici¹, SH Ein¹, RH Pearl², JC Langer¹, PW Wales¹

¹ The Hospital for Sick Children, Toronto

² The University of Illinois, Peoria

Background/Purpose: Contrast extravasation (CE) associated with blunt-splenic injuries (BSI) in adults is commonly treated with embolization or splenectomy. Whether this is necessary in children is unclear. We sought to determine if CE on initial computed tomography (CT) is associated with negative outcomes in children with BSI.

Methods: BSIs presenting to our paediatric trauma centre between January 21, 1999 and Dec 31, 2006, were reviewed (minimum follow up=2 years). Those with initial CTs available were reviewed by a paediatric radiologist blinded to outcomes. Descriptive analysis and multivariable logistic regression were performed using SPSS v16.

Results: One hundred eighty-two BSIs were treated at our centre. 129 had available CTs (mean age=10.7 years, %male=70.5%, median injury grade=3, transfusion rate=14.0%, overall mortality=3.1%). 49.6% had associated injuries. No splenectomies/splenorrhaphies were performed. One delayed-splenic bleed occurred.

Eight patients (6%) had CE on initial CT. Multivariable logistic regression controlling for other injuries found no association between CE and need for transfusion, mortality, delayed-splenic bleeding, length of hospitalization, or splenectomy. CE was positively associated with low initial and lowest haemoglobin (<90g/L) (OR 6.45 (1.00, 39.47) p=0.044 and OR 5.63 (1.20, 26.49) p=0.029), respectively.>

Conclusions: Contrast extravasation occurred in 6% of our paediatric patients with blunt splenic injuries. The presence of contrast “blush” on abdominal CT was not associated with negative outcomes after a minimum of 2 years follow-up. Paediatric patients with CE can be treated without surgery and can be managed using the standard APSA guidelines.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Paul W. Wales

Senior Author: Paul W. Wales

Corresponding to:

Dafydd A. Davies

42 Summit St.

Dartmouth, Nova Scotia

Canada

B2Y 3A3

tel: 902-464-1466

fax: 416-813-7477

e-mail: daviesd@dal.ca

Patterns Of Non-Sexual, Non-Obstetric Genital Trauma In Young Females And Indications For Operative Management

Corey W. Iqbal¹, Nicole J. Krumrei¹, Nezar Y. Jrebi¹, Daniel C. Cullinane², Scott P. Zietlow², Christopher R. Moir³, Michael B. Ishitani³

¹Mayo Clinic Rochester Dept. of Surgery,

² Mayo Clinic Rochester Division of Trauma, Critical Care, and General Surgery,

³Mayo Clinic Rochester Division of Pediatric Surgery

Background/Purpose: To define injury patterns of non-sexual, non-obstetric genital trauma (GT) in females and examine the indications and outcomes of operative intervention.

Methods: Review of patients ≤ 16 yrs with GT from 1980 to 2007 excluding sexual- and obstetric-related injuries.

Results: 167 patients met criteria for non-sexual, non-obstetric GT. Mean (\pm SEM) age was 6.9 ± 0.2 yrs. 70.5% were straddle injuries, followed by non-straddle, blunt injuries (23.5%), and penetrating injuries (6.0%). 20 patients (12.1%) required general anesthesia due to inability to obtain a complete physical examination ($n=4$) or the presence of extensive injuries ($n=16$). Penetrating injuries were more likely to require operative management ($p=0.003$) while straddle injuries were more likely to be managed expectantly ($p=0.02$). Hymenal disruption (8% overall) and injuries to the posterior fourchette (8% overall) were more likely in the operative group (30 vs. 5%; 45 vs 3%, respectively, $p \leq 0.02$). The operative group was also more likely to have multiple genital injuries (60 vs 25%, $p < 0.01$). Within the operative group, 11 patients were treated with primary closure alone; 3 patients required external anal sphincter reconstruction; 3 required perineal body reconstruction; 2 required rectal repair. Sphincteric injuries were more common with penetrating trauma ($p=0.04$). There were no post-operative complications, and all patients with sphincter injuries were continent at a mean follow-up of 7 ± 2 yrs.>

Conclusions: Non-sexual, non-obstetric GT is most commonly due to straddle-type injuries and is usually amenable to non-operative management. Hymenal disruption and injuries to the posterior fourchette are uncommon (8% each). Thorough physical examination is necessary to rule out significant genitourinary and rectal injuries especially in penetrating injuries.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Christopher R. Moir

Senior Author: Michael B. Ishitani

Corresponding to:

Corey W. Iqbal

200 1st Street SW

Mayo West-12

Rochester, Minnesota

Canada

55905

tel: 507-284-2644

fax: 507-284-0058

e-mail: iqbal.corey@mayo.edu

Torso Trauma In Children “Run over” By Vehicles: A Surprising Outcome

Kunoor Jain, Charles E. Bagwell
Virginia Commonwealth University Department of Pediatric Surgery

Background/Purpose: Trauma remains the leading cause of death in most childhood age groups, but there is little information regarding pediatric patients who have been “run-over,” i.e. those in which the vehicle traverses the child’s body. After caring for a number of such patients, a retrospective review was undertaken to summarize our experience with pediatric patients following “run over” vehicular trauma.

Methods: Virginia Commonwealth University Medical Center (VCUMC) is the only Level I Trauma Center for children and adults in the central Virginia region. Records of pediatric patients (under 18 years of age) involved in a “run-over” collision from 1992-2006 were reviewed.

Results: In the 14 years spanned by this review 442 pediatric patients were identified as being struck by a vehicle; of this group, 33 were identified as “run-over” trauma- eighteen involving torso injuries. Ages ranged from one to six years, and average length of stay for these patients was six days. No patient required operative intervention for chest or abdominal trauma, though ventilatory support was necessary in 5 patients for a total of 30 days. There were NO deaths, and all were discharged home except one child with severe head injury.

Conclusions: The paucity of serious morbidity and mortality related to “run over” pediatric trauma in this review seem remarkable when faced with the injuries identified. It is surmised that the flexibility of pediatric torso structures with compressive forces may be responsible for the overall favorable outcomes in contrast to devastating injuries from shearing or deceleration injuries.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Charles E. Bagwell

Senior Author: Charles E. Bagwell

Corresponding to:

Kunoor Jain
1200 East Main Street
Department of Surgery
West Hospital, 16th Floor
Richmond, Virginia
United States
23298
tel: 804-301-7594
fax: 804-828-8606
e-mail: kunoor@vcu.edu

Assessment of Guidelines for Termination of Trauma Resuscitation; are children small adults?

Tony R. Capizzani, Robert Drongowski, Peter F. Ehrlich
University of Michigan Cs Mott Children's Hospital

Background/Purpose: Guidelines for termination of resuscitation in traumatic cardiopulmonary arrest (TCPA) have recently been published for adults. Objective criteria for termination of care include: pulselessness, unorganized EKG, fixed pupils- all at the scene, and CPR greater than 15 minutes. The goal of this study was to evaluate these guidelines in a pediatric trauma population.

Methods: Pediatric trauma patients with documented arrest were included in the study. Data assessed were duration of CPR, EKG rhythm, pupil response, transport times and standard injury criteria (e.g. mechanism of injury). Survivors were compared to nonsurvivors using descriptive statistics, chi squared, and Pearson's correlation.

Results: Between January 2000-2009, 38 patients met criteria and had complete data. There were 12 females and 26 males age range (0.1 - 17.9 years old). Seven of 38 survived (18%) The mean duration of CPR was 38 for nonsurvivors and 7 minutes for survivors ($p=0.017$). Ninety-two percent of non-survivors suffered a severe traumatic brain injury compared to 14.3% of survivors ($p=0.001$). Eighty six percent of the non survivors had fixed pupils compared to 43% of survivors ($p=0.027$). EKG rhythm ($p=0.40$), pulselessness ($p=0.17$) and transport time ($p=0.75$) did not distinguish between outcomes. None of the 7 survivors met all four criteria for termination whereas 15 (48 percent) of non survivors met all four criteria.

Conclusions: Criteria for termination of resuscitation correctly predicted 48% of those who died, more importantly no survivors would have had resuscitation stopped. Duration of CPR appears to be a strong predictor of mortality in this study.

Original Paper
Trainee Presentation

Senior Author: Peter Ehrlich

Corresponding to:

Peter Ehrlich
F7822 CS Mott
1500 East Medical Center Drive
Ann Arbor, Michigan
United States
48109
tel: 734 615 3303
fax: 734 647 8111
e-mail: pehrlich@med.umich.edu

A Prospective, Multi-Institutional Study of Pediatric All-Terrain Vehicle Crashes

Brendan T. Campbell¹, Kristine M. Kelliher¹, John M. Corsi¹, Kevin Borrup¹, Hassan Saleheen¹, Michael D. Bourque¹, Paul D. Danielson², Anthony DeRoss³, Daniel Copeland⁴, Allison L. Hester⁴, Donna Parnell-Beasley⁴, Samuel D. Smith⁴, Garry Lapidus¹

¹Connecticut Children's Medical Center, Hartford, Connecticut

²All Children's Hospital, St. Petersburg, Florida

³UMass Memorial Medical Center, Worcester, Massachusetts

⁴Arkansas Children's Hospital, Little Rock, Arkansas

Background/Purpose: Pediatric all-terrain vehicle (ATV) injuries have been increasing annually for more than a decade. Prospectively collected data about ATV crashes are scarce. The purpose of this study is to prospectively investigate the causes of and outcomes resulting from pediatric ATV crashes.

Methods: Four pediatric trauma centers prospectively collected data from patients hospitalized with ATV crash-related injuries from July 2007 through October 2008. Information collected included demographic information, ATV and crash data, safety equipment use, ATV training and experience, and clinical information (injuries, injury severity score [ISS], surgical procedure data, length of stay [LOS], and disposition) were collected during each patient's hospitalization.

Results: Fifty patients were enrolled in the study. Half of the injured children were female (n=25, 50%). Mean age was 14.9±8.2, mean ISS was 11.7±8.0, and average LOS was one week (6.8±8.8 days). Types of injuries included central nervous system (51%), musculoskeletal (32%), thoracic (30%) and abdominal (26%). More than a third of children (36%) had multisystem injuries. Forty-five percent of patients required operative intervention. Most children were riding for fun/recreation (92%), and ignored ATV manufacturers' recommendation that children younger than 16 years ride ATV's with less powerful (≤ 90 cc) engines (68%). Unsafe riding practices are widespread: no adult supervision (58%), not wearing helmet (50%), double riding (48%), riding on paved roads (22%), and nighttime riding (16%). The most common crash scenario was ATV rolled/flipped over (46%).

Conclusions: All-terrain vehicles continue to cause severe injuries in children who ride them. Policy solutions that prevent pediatric all-terrain vehicle crashes are urgently needed.

Original Paper

Sponsoring CAPS Member: Michael D. Bourque

Senior Author: Brendan T. Campbell

Corresponding to:

Brendan T. Campbell

282 Washington Street, #2G

Hartford, Connecticut

United States

06106

tel: 860-545-9654

fax: 860-545-8050

e-mail: bcampbell@ccmckids.org

Urban vs. rural pediatric trauma: Reflection of the times and focus on prevention

Dana Mihalicz, Leah Phillips, Ioana Bratu

University of Alberta, Stollery Childrens Hospital, Division of Pediatric General Surgery

Background/Purpose: Understanding differences between rural and urban pediatric trauma is important in establishing preventative strategies specific to each setting.

Methods: Data was extracted from a Provincial Pediatric Trauma Registry on pediatric patients (0-18 years) with Injury Severity Scores (ISS) >12, treated from 1996-2006 at five major trauma centers in the Province. Urban and rural patients were compared with respect to demographic data, as well as injury type and severity. Statistical analysis was made using SPSS software by Chi-Square, Fisher's exact test, or t-test with $p < 0.05$ considered significant.

Results: Of $N=2660$, rural patients predominating (63.3%). Mean ISS was 22.5, however rural patients had more severe injuries (ISS 23.2 vs. 21.8, $p < 0.0001$). Blunt trauma was the most common mechanism overall (urban 89.6%; rural 93.2%), with the majority being MVAs. Significantly more penetrating trauma occurred in the urban setting (5.4% vs. 2.6%, $p > < 0.0001$). Intent injuries were more common in the urban setting (15.2% vs. 5.5%, $p > < 0.001$). 89.2% of patients survived the trauma, however, urban patients had a higher rate of death than rural ones (13.0% vs 10.5%, $p > < 0.05$).

Conclusions: Despite the finding that rural patients sustained more severe injuries, overall survival was actually better when compared with urban patients. The majority of injuries were blunt trauma, suggesting road safety should be the main target in prevention strategies. Intent injuries were much higher in the urban group, thus, a need to target violence in urban prevention strategies.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr. Ioana Bratu

Senior Author: Dr. Ioana Bratu

Corresponding to:

Dr. Ioana Bratu

2C3.56 WMC

8440-112 St.

Edmonton, Alberta

Canada

T6G 2B7

tel: (780) 407-1182

fax: (780) 407-2004

e-mail: bratu@ualberta.ca

Pulmonary Segmentectomy in Children for Congenital Cystic Adenomatoid Malformation

NJ Krumrei, JL Thompson, CR Moir
Mayo Clinic, Rochester MN

Background/Purpose: Congenital cystic malformation (CCAM) accounts for 95% of congenital cystic lung disease. Most surgeons recommend resection to prevent complications. A variety of resections have been reported, including lobectomy and pneumonectomy, but these resections may remove more lung parenchyma than is necessary. We report resections for CCAM using anatomic pulmonary segments, which is intended to treat the disease while preserving as much parenchyma as possible.

Methods: For the years 1998 – 2006, the charts of children (age <18 years) who underwent pulmonary segmentectomy for CCAM were reviewed.>

Results: Ten children were identified as having undergone a segmentectomy for CCAM. The diagnosis was established prenatally in 3 patients and at an average of 38 months in the remaining seven. The mean age at time of resection was 36 months. None of the patients were operated on emergently. Four patients underwent a trisegmentectomy, 3 had a bi-segmentectomy, two had a segmentectomy, and one had a wedge resection. Purulence was found in two patients who had been asymptomatic. One patient has a postoperative complication of a prolonged air leak requiring additional chest tube placement. Mean followup was 35 months, with 7 patients having CT scans performed at one year postoperatively. Followup is remarkable for one patient with CCAM recurrence who subsequently underwent a completion lobectomy. In all cases of patients with presenting symptoms, those symptoms had resolved.

Conclusions: Segmentectomy for CCAM can be performed safely. Early resection of CCAM can ameliorate recurrent and impending pneumonia. The advantage of performing a segmentectomy is preservation of pulmonary parenchyma.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Dr. CR Moir

Senior Author: Dr. CR Moir

Corresponding to:

Dr. CR Moir

Mayo 12

200 First Street SW

Rochester, Minnesota

United States

55905

tel: 507-284-2623

e-mail: moir.christopher@mayo.edu

The Role Of Transforming Growth Factor-Beta 2 And 3 In Formation Of Ventral Body Wall In The Cadmium Induced Omphalocele Chick Model

Takashi Doi^{1,2}, Jennifer Thompson², John Bannigan², Prem Puri^{1,2}

¹The Children's Research Centre, Our Lady's Children's Hospital, Dublin, Ireland

²School of Medicine and Medical Science and Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Ireland

Background/Purpose: In the chick embryo, administration of cadmium (Cd) at post-gastrulation stage induces ventral body wall defects (VBWD) similar to the human omphalocele with the earliest histological changes observed 4 hours post Cd treatment. Molecular mechanisms of VBWD by which Cd acts remain unclear. Transforming growth factors-beta (TGF- β) are involved in many developmental processes including cellular proliferation, differentiation, adhesion and skeletal development. In the early embryogenesis, Tgf- β 2 and Tgf- β 3 are localized in somites and neural tube and are critical for VBW formation. We designed this study to test the hypothesis that TGF- β 2 and TGF- β 3 are altered during the very early embryogenesis in the Cd induced omphalocele chick model.

Methods: After 60 hours incubation, chick embryos were exposed to either Cd or saline and harvested 1 hour (1H), 4H, and 8H after treatment. Chicks were divided into two groups: control and Cd (n=8 at each time point, respectively). Real-time RT-PCR was performed to evaluate the relative mRNA levels of Tgf- β 2 and Tgf- β 3 expression in the Cd-induced VBWD chick model.

Results: The relative mRNA expression levels of Tgf- β 2 at 1H were significantly decreased in the Cd group (5.72 ± 0.95) compared to controls (7.42 ± 0.62) ($p < 0.05$). There were no differences at the other time points. mRNA levels of Tgf- β 3 were not altered in the Cd group compared to controls at any time points.>

Conclusions: We provide evidence, for the first time, that Tgf- β 2 gene expression is downregulated during a narrow window of early embryogenesis in the Cd chick model, interfering with the ventral body wall formation causing omphalocele.

Original Paper
Trainee Presentation

Sponsoring CAPS Member: Jacob C Langer

Senior Author: Prem Puri

Corresponding to:

Prem Puri

The Children's Research Centre

Our Lady's Children's Hospital

Crumlin

Dublin, Ireland 12

tel: (353) 1-409-6420

fax: (353) 1-455-0201

e-mail: prem.puri@ucd.ie

Management of a Giant Omphalocele with an External Skin Closure System

Robert Baird, Suad Gholoum , Jean-Martin Laberge , Pramod Puligandla

Division of Pediatric Surgery, The Montreal Children's Hospital, McGill University, Montreal, Quebec, Canada

Background/Purpose: The management of neonates with giant omphalocele remains challenging and multiple strategies have been described. We present the case of a 34-week neonate with isolated giant omphalocele managed with an external surgical skin closure system as a component of a staged closure strategy.

Case Presentation: An Inuit boy of 34 weeks gestation was born at a remote hospital with a giant ruptured omphalocele and loss of abdominal domain. He was transferred to our institution and a transparent silo was placed in the operating room. He returned to the OR 15 days after presentation for abdominal wall closure with a combined gore-tex/vicryl inlay mesh. An eschar formed over this temporary closure, and we elected to place a surgical skin closure apparatus (ABRA® device, Canica®, Ont Canada) to begin gradual bedside reduction. The initial abdominal wall defect was 8.5 cm across, and was reduced to 4.5cm over 3 weeks. Complete closure has been achieved without the need for skin grafting.

Discussion: The use of a dynamic reduction skin closure device has not been documented previously in the pediatric population, nor in the context of a congenital defect. We describe the use of an external surgical skin closure device in the context of a staged closure of a giant neonatal omphalocele, and postulate that such a device may prove useful in the treatment of other congenital tissue defects.

Case Report

Trainee Presentation

Sponsoring CAPS Member: Pramod Puligandla

Senior Author: Pramod Puligandla

Corresponding to:

Pramod Puligandla

Montreal Children's Hospital

2300 Tupper

Room C 811

Montreal, Quebec

Canada

H3H 1P3

tel: 514 412-2134

fax: 514 412 -4289

e-mail: pramod.puligandla@muhc.mcgill.ca

Cholecystectomy In Sickle Cell Disease Children; A Series Of 63 Cases

Salim Ghantous, Salam Yazbeck, Nafeesa Al-Faris, Basel Abushullaih, Mohammad Edreesi,
Saad AlMulhim
Saudi Aramco Dahhran Health Center

Background/Purpose: To study the indications and outcome of cholecystectomy in sickle cell disease (SCD) children.

Methods: A retrospective review of SCD children who underwent laparoscopic cholecystectomy between 2003 and 2008. Charts were reviewed for demographics, Hemoglobin electrophoresis, symptoms, blood transfusion history, and perioperative data with emphasis on postoperative complications.

Results: Sixty three patients were included, 28 males and 35 females, with a median age of 10 years. Right upper quadrant pain was the main complaint in 79% of cases. Preoperative vasoocclusive crises (VOC) were reported in 78% of cases and acute chest syndrome (ACS) in 29%.

ACS was noted in 25% of patients post operatively.

Only a history of previous ACS was predictive for post op ACS. 61% of those with a history of ACS developed ACS postoperatively, while only 11% of patients without a history of ACS developed ACS postoperatively.

Age, hydroxyurea treatment, urgency, preoperative transfusion, hemoglobin level, hemoglobin F level, or operative time were not significant predictors of postoperative ACS.

17% of patients had splenectomy.

Conclusions: The indication for cholecystectomy in symptomatic patients is universally accepted while it is still controversial in asymptomatic patients. Since more than 50% of SCD patients will develop a cholelithiasis during their lifetime, and since incidence of ACS after cholecystectomy is significant (25%), it is reasonable to consider cholecystectomy in all cholelithiasis patients undergoing splenectomy. For the same reason it may be advisable to consider cholecystectomy in SCD patients undergoing a splenectomy even if there is no cholelithiasis.

Original Paper

Senior Author: Saad AlMulhim, MD, FRCS(c)

Corresponding to:

Saad AlMulhim, MD, FRCS(c)
Saudi Aramco Dhahran Health Center
P O Box: 76
Dhahran, ZC 31311
Dahran, Other
Saudi Arabia
31311
tel: +99638778139
fax: +96638773695
e-mail: saad.mulhim@aramco.com

Versatility Of One-Trocar Surgery In Children

Cobellis G , Mastroianni L , Cruccetti A , Noviello C ,Torino G, Amici G , Martino A.
Paediatric Surgical Unit, Salesi Children's Hospital, Ancona, Italy.

Background/Purpose: One-trocar surgery (OTS) includes all video-surgical techniques performed using a single 10mm port and an operative laparoscope. These techniques can be completely endoscopic or endoscopic-assisted. Since 1997 OTS has become the approach of choice in our institution for a variety of laparoscopic, retroperitoneoscopic and thoracoscopic operations. We report our experience with this technique.

Methods: Four hundreds and fifty-eight patients (age range from 3 months to 17 years) underwent to OTS from October 1997 to December 2008. The procedures were: transumbilical laparoscopic-assisted appendectomy (182 patients), transumbilical laparoscopic assisted small intestine resection (12 Meckel's diverticulum, 1 ileal duplication, 1 jejunal hemangioma), transumbilical laparoscopic-assisted multiple intestinal biopsies (7 patients), adhesiolysis (6 patients), laparoscopic liver biopsy (5 patients), laparoscopic revision of peritoneal dialysis catheters (3 patients), retroperitoneoscopic varicocelectomies (202 patients), retroperitoneoscopic renal biopsy (4 patients), retroperitoneoscopic drainage of post-traumatic urinoma (1 patient), retroperitoneoscopic- assisted pyeloplasty (15 patients), thoracoscopic debridement and decortication for empyema (19 patients).

Results: The procedure was completed using only one trocar in 405 cases (88,4%). All conversions to multitrocar or open surgery were elective and regarded the retroperitoneoscopic approach during the learning curve (28 out of 222, 12,6 %; 21 varicocelectomies and 7 pyeloplasties) and the transumbilical laparoscopic assisted appendectomy because of lack of mobilization of the appendix (31 out of 182, 17 %). There were no intraoperative or postoperative complications.

Conclusions: According to our experience the OTS is a feasible and versatile technique in pediatric surgery, providing a safe, effective and the least invasive treatment for several different diseases.

Original Paper

Sponsoring CAPS Member: Prof. Agostino Pierro

Senior Author: Cobellis G

Corresponding to:

Cobellis G

Via Corridoni, 11, 60123 Ancona (Italy)

Ancona,

Italy

60123

tel: 003907133633

fax: 003907136281

e-mail: giovannicobellis@tiscali.it

Comparison of the Nuss versus the Ravitch procedure for pectus excavatum repair: A meta-analysis

Ahmed Nasr, Annie Fecteau , Paul Wales

Department of Paediatric Surgery. The Hospital For Sick Children. Toronto

Background/Purpose: Pectus excavatum is the most common chest wall deformity in children. Two procedures are widely applied - the Nuss and the Ravitch. Several comparative studies are published evaluating both procedures with inconsistent results. Our Objective was to compare the Nuss procedure to the Ravitch procedure using systematic review and meta-analysis methodology

Methods: All publications describing both interventions were sought through Cochrane Central Register of Controlled Trials (CENTRAL) database, MEDLINE and EMBASE. The statistical analysis was performed using RevMan 5 software. Odds Ratios and weighted mean differences with 95% confidence intervals are presented.

Results: No randomized trials were identified. Eight prospective and retrospective studies were identified and were included in this study. There was no significant difference in overall complication rates between both techniques (OR 2.5 (0.73-3.6) $p=0.46$). Looking at specific complications, the rate of reoperation due to bar migration or persistent deformity was significantly higher in the Nuss group (OR 4.7 (1.87-11.85) $p=0.001$). Duration of surgery was longer with the Ravitch (WMD 87.1 (144-29) $P=0.003$). There was no difference in length of hospital stay (WMD 1.18 (3.1-5.5) $P=0.59$) or time to ambulation after surgery (WMD 0.33 (0.89-0.23) $P=0.24$). Among studies looking at patient's satisfaction, there was no difference between both techniques.

Conclusions: Our results suggest no differences between the Nuss procedure versus the Ravitch procedure with respect to overall complications, the length of hospital stay and time to ambulation. However, the rate of reoperation after the Nuss procedure was higher compared to the Ravitch procedure. No studies showed a difference in patient's satisfaction.

Original Paper

Trainee Presentation

Sponsoring CAPS Member: Dr Paul Wales

Senior Author: Dr Paul Wales

Corresponding to:

Dr Paul Wales

The Hospital for sick children.555 university avenue

Toronto, Ontario

Canada

M5G1X8

tel: 4168137500

e-mail: paul.wales@sickkids.ca

The sixteen golden hours for conservative treatment in children with post operative small bowel obstruction

Elad Feigin, Dragan Kravarusic, Ittai Goldrat, Ran Steinberg, Elena Dlugy, Arthur Baazov, Michael Zer, Enrique Freud
Department Of Pediatric Surgery,
Schneider Children's Medical Center of Israel and Sackler Medical School

Background/Purpose: : Conservative treatment for post operative small bowel obstruction POSBO in children, as long as no clinical signs of bowel strangulation appear, is a widely accepted . Nevertheless, no limit has been set, to the time length of safe observation.

This study was designed in search of a safe time limit to the length of observant treatment in cases of POSBO in children.

Methods: This study was designed in search of a safe time limit to the length of observant treatment in cases of POSBO in children.

Results: Spontaneous resolution following non-surgical treatment was observed in 63% of admissions. Of the operated patients, rate of bowel compromise was 31% , of whom half underwent bowel resection accounting for 6% of all admissions.

No bowel strangulation was observed, nor bowel resection necessary in patients operated within the first 16 hours of admission. Spontaneous resolution was observed in over 85% of episodes within 48 hours of observant treatment.

Conclusions: While prolonging observant treatment after the first 48 hours has only a small benefit in terms of spontaneous resolution, Bowel strangulation starts after 16 hours from admission.

It seems reasonable to raise the index of suspicion for compromised bowel after 16 hours on one hand, and make the decision for necessary surgery around the 48 hours mark.

Original Paper

Sponsoring CAPS Member: Andrew L Wong

Senior Author: Enrique Freud

Corresponding to:

Elad Feigin
Dept of Pediatric surgery Schneider Children
Medical Center of Israel
14 Kaplan St
Petah Tikva,
Israel

tel: 972-3-9253735
fax: 972-3-9253930
e-mail: eladf@clalit.org.il

Adhesive small bowel obstruction in children: markers of outcome

Gareth Eeson¹, Paul Wales², James Murphy³

¹ Department of General Surgery, University of British Columbia

² Hospital for Sick Children, University of Toronto

³ BC Children's Hospital, University of British Columbia, Vancouver

Background/Purpose: Adhesive small bowel obstruction (ASBO) is a significant cause of morbidity in children. Our aim was to review our experience with ASBO to identify markers of outcome.

Methods: A review of admissions for ASBO at BC Children's Hospital was performed. Demographics, presenting signs and symptoms, past medico-surgical history, investigations and details of management were recorded.

Results: 165 patients (114 male, 51 female, 2 weeks to 17 years) over 10 years were identified. 32 (19%) were managed with immediate operation while 133 were initially managed conservatively. 107 patients went on to laparotomy. 26 patients (16%) were successfully managed conservatively. Factors associated with need for laparotomy included elevated WBC count and young age. Classic predictive findings (fever, tachycardia, leukocytosis, localized tenderness) did not independently predict need for operation. Complete obstruction on x-ray was present in 27% of patients receiving a laparotomy vs. 12% managed conservatively. Tachycardia, low bicarbonate, younger age and the presence of 2 or more classic predictors were associated with the need for bowel resection in operative patients. Delayed surgery or conservative management did not cause an increase in complications.

Conclusions: Children with ASBO required surgery in 84% of cases, differing markedly from reported laparotomy rates in adults (26-40%). Age was associated with both need for laparotomy and need for bowel resection, pointing to ASBO as a distinct disease entity in younger patients. Clinical findings and investigations are unreliable predictors of outcome in ASBO. Tachycardia, acidosis and 2 or more classic predictors are associated with advanced disease. Triage of patients with ASBO remains a challenging clinical decision.

**Original Paper
Trainee Presentation**

Sponsoring CAPS Member: James Murphy

Senior Author: James Murphy

Corresponding to:

Gareth Eeson

2002-1225 Richards St.

Vancouver, British Columbia

Canada

V6B1E6

tel: 604-688-2526

e-mail: eeson@interchange.ubc.ca

