Canadian Association of Paediatric Surgeons

34th Annual Meeting

Vancouver
September 19-22, 2002
Thirty-fourth Annual Meeting

CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS

September 19-22, 2002

Westin Bayshore Resort & Marina
Vancouver (British Columbia)
CANADA
This event is approved as an accredited group learning activity as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada

The Royal College of Physicians and Surgeons of Canada has contributed to the sponsorship of our meeting through a National Specialty Society Annual Meeting Grant
# SCIENTIFIC AND SOCIAL PROGRAM

## Thursday, September 19, 2002

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:00 - 17:00</td>
<td>Meeting of CAPS Council (Executive) - Chairman’s Room</td>
</tr>
<tr>
<td>17:00</td>
<td>Registration</td>
</tr>
<tr>
<td>18:00 - 22:00</td>
<td>Welcoming Reception – Marine Room</td>
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## Friday, September 20, 2002

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<tr>
<td>07:00 - 12:00</td>
<td>Registration</td>
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<tr>
<td>07:00 - 07:30</td>
<td>Continental Breakfast</td>
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<tr>
<td>07:30 - 07:40</td>
<td>President’s Welcome</td>
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<tr>
<td>07:40 - 09:40</td>
<td>Scientific Session ONE</td>
</tr>
<tr>
<td>09:40 - 10:10</td>
<td>Refreshment Break</td>
</tr>
<tr>
<td>10:10 - 11:15</td>
<td>Scientific Session TWO</td>
</tr>
<tr>
<td>11:15 - 12:00</td>
<td>Fred MacLeod Lecture, Dr. Birabwe-Male</td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td>Lunch Break</td>
</tr>
<tr>
<td>13:00 - 14:20</td>
<td>Scientific Session THREE</td>
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## Saturday, September 21, 2002

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<tr>
<td>06:00 - 08:00</td>
<td>Specialty Committee in Pediatric General Surgery Meeting (Chairman’s Room)</td>
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<tr>
<td>06:00 - 08:00</td>
<td>Publications Committee Meeting</td>
</tr>
<tr>
<td>07:00 - 12:00</td>
<td>Registration</td>
</tr>
<tr>
<td>07:00 - 07:30</td>
<td>Continental Breakfast</td>
</tr>
<tr>
<td>07:30 - 09:30</td>
<td>Scientific Session FOUR</td>
</tr>
<tr>
<td>09:30 - 10:00</td>
<td>Refreshment Break</td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td>Scientific Session FIVE</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>“2 minutes / 2 slides”</td>
</tr>
<tr>
<td>12:00 - 14:00</td>
<td>CAPS Members Business Meeting (Luncheon) -- Marine Room</td>
</tr>
<tr>
<td>18:00</td>
<td>Presidential Reception – Capilano Suspension Bridge Park</td>
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<tr>
<td>19:00</td>
<td>Presidential Potlatch (Banquet) -- Capilano Suspension Bridge Park</td>
</tr>
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## Sunday, September 22, 2002

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>07:00 - 09:00</td>
<td>Registration</td>
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<tr>
<td>07:00 - 07:30</td>
<td>Continental Breakfast</td>
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<tr>
<td>07:30 - 09:00</td>
<td>Scientific Session SIX</td>
</tr>
<tr>
<td>09:00 - 09:30</td>
<td>Refreshment Break</td>
</tr>
<tr>
<td>09:30 - 09:40</td>
<td>Resident prizes for excellence in clinical and research presentations</td>
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<tr>
<td>09:40 - 10:40</td>
<td>Scientific Session SEVEN</td>
</tr>
<tr>
<td>10:40</td>
<td>President’s Closing Remarks</td>
</tr>
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</table>
Activities available during CAPS 2002

The Westin-Bayshore Resort & Marina is a premier venue and has every amenity. Located on Coal Harbour and overlooking and adjacent to beautiful Stanley Park, it is a short walk to Vancouver’s downtown business district, shopping and entertainment. Stanley Park is laced with a network of 20 kilometres of walking trails through giant trees of the West Coast rainforest, and 10 kilometres of the Sea Wall trail that circles the park beside the lapping waters of Burrard Inlet and the Strait of Georgia. The resort is nestled within the quiet waters of the Coal Harbour Marina. A brief stroll from the hotel brings you to great harbour-side cafes and bistros. I warn you – you’ll want to move here!

The following “tourist info” should be of interest:

- Although some visitors may wish to rent a vehicle for their stay in the Vancouver area, it is not necessary. There are efficient and easy ways to get from the airport to the Westin-Bayshore (the “AirPorter” being the most often used). Taxis are reasonable. The resort has regular half-hourly “shuttles” to the downtown shopping district (Pacific Centre) for those who don’t want to walk.

- And consider:

  ✓ A trip to Whistler- a year-round resort destination for hiking, sightseeing and general holidaying. There is a Westin Whistler Resort. A pre- or post meeting stay there could be easily booked by the Westin-Bayshore staff.
  ✓ A West Coast sailing trip – Coal Harbour has a full range of sailing and motorized yachts for hire.
  ✓ Golfing – tour some of the finest courses in the region.
  ✓ Hiking – from really rugged to really not-so-rugged. Consider applying for membership in the Black Tusk Paediatric Surgery Society.
  ✓ See Vancouver Island and all it has to offer.
  ✓ A trip up the coast where you’ll hop from road to ferry and back again.
  ✓ A Bed & Breakfast tour of the romantic Pacific Northwest – time to get re-acquainted with your life-partner!
  ✓ Hit the riding trails of the arid interior of beautiful B.C. – Release that rootin’ tootin’ cowboy that’s deep inside you.
  ✓ Or just stay in Vancouver for a few extra days – there’s a lot to do, such as:
    ✓ Take the Skyride Gondola to the Peak of Vancouver on Grouse Mountain overlooking the city.
    ✓ Gardens, gardens, gardens – there everywhere! Tours of traditional Chinese gardens and other horticultural delights.
    ✓ Chinatown.
    ✓ Restaurants of all sorts – with an emphasis on West Coast cuisine.
    ✓ Gastown – a walk will provide you with a glimpse of Vancouver’s history and the Steam Clock.
    ✓ Have some real coffee on Commercial Drive (warning: you may never be satisfied with Tim Horton’s again!)
    ✓ The Grouse Grind – a near vertical trail in North Vancouver – 6:00 a.m. is the time to do it. They say that one should be able to complete it in as many minutes as your age in years. Qualified people at the top who know CPR, and a rewarding gondola ride back down – just in time for the Scientific Session.
    ✓ Shop till you drop.
    ✓ Theatres big and small, professional and avant garde.
    ✓ Wreck Beach – leave your clothes in the car!
    ✓ Science World – for kids of all ages.
    ✓ Granville Island Market – one of my favourite places.
    ✓ Just explore – find a movie set, get lost in the hectares of wilderness around UBC known as the University Endowment Lands, or just kick back in one of the cafes in or near the hotel.

In summary, we’ll have a “whale” of a time this September in Vancouver. Bring the family, extend your stay, (but bring an umbrella – it might rain), plan some extra activities and get to know Vancouver. We’re looking forward to having all of you out here for CAPS 2002!
PRESIDENT'S WELCOME

Welcome to the 34th annual meeting of the Canadian Association of Pediatric Surgeons. Last year’s cancellation of the CAPS meeting in Winnipeg is now a footnote of a major turning point in modern history. The events of September 11 past are not but a memory, but a very real part of our new reality.

Nonetheless, we go on. The meeting this year in Vancouver offers promise of a great opportunity to enjoy and share in something that hasn’t changed, a constant in our lives. That is the opportunity to gather as participants in the world of Canadian Pediatric Surgery to share in a tradition that is dear to all of us. Dr. Geoff Blair and his colleagues in Vancouver have put together as great a venue and opportunity to re-immense in this tradition as we can find. Dr. Ken Shaw and his Program Committee have a program that assures those who participate will enjoy the confidence of being current in the subject matter offered.

I look forward to this meeting and anticipate enjoying all this booklet promises. I don’t think you will be disappointed.

All the best.

Mike Giacomantonio, M.D., F.R.C.S.(C)
President, Canadian Association of Pediatric Surgeons
ABOUT THE CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS

The Canadian Association of Paediatric Surgeons was granted its charter in 1967. Its main aim is to improve the surgical care of infants and children in Canada.

There are three main areas, diagnosis, treatment and research, which are of special concern to the members.

Infants Born with Congenital Abnormalities

Even though the majority of newborn infants who have severe congenital abnormalities can be treated successfully by a surgical operation, often the condition is either not recognized, or if it is diagnosed, the local physician may be unaware of the possibilities for surgical cure. In this situation most of these babies die, or some survive to live a life crippled by their deformity.

Malignancy in Childhood

Cancer is the second most common cause of death in childhood. Surgical removal of the tumor, combined with X-radiation and chemotherapy provided by an aggressive team utilizing new techniques can achieve a cure in over 50% of these patients.

Trauma

Finally, the number one killer of children in North America is accidents. Here again, with modern methods of first aid, transportation, resuscitation, intensive care, and specialized surgical team effort, many of these seriously injured children can be saved.

Education Program

To accomplish an improvement in surgical care for babies and children, the Canadian Association of Paediatric Surgeons has launched an educational program for doctors, nurses and others working in the paediatric health field. To support this program, an educational fund has been established.
The role of the Education Fund is to promote continuing medical education of the members of the Canadian Association of Pediatric Surgeons, education of medical and surgical specialists, of trainees and of the public about pediatric surgical illnesses and their prevention. Financing for the Education Fund has been obtained from individuals and groups, both medical and non-medical, interested in the surgical care of children, and from foundations. It is the intent of the Association to increase the capital funding to a level where the annual interest will fully support the Education Program.

The Education Fund of the Canadian Association of Paediatric Surgeons is registered with the Federal Government and all contributions are fully tax deductible. The Fund is audited annually.

Donations may be sent to:

Peter Fitzgerald, M.D.
CAPS Secretary-Treasurer
McMaster Children’s Hospital
1200 Main St. W., Rm 4E2
Hamilton, Ontario, H3T 1C5

Telephone (905) 521-2100 ext 75231
Fax (905) 521-9992
E-mail: fitzger@mcmaster.ca
PRESIDENTS

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  Montréal
1981-1983  Barry Shandling  Toronto
1983-1985  Gordon Cameron  Hamilton
1985-1987  Stanley Mercer  Ottawa
1987-1989  Alex Gillis  Halifax
1991-1993  Sigmund H. Ein  Toronto
1993-1995  Angus Jackes  Regina
1995-1997  Jean G. Desjardins  Montreal
1997-1999  David P. Girvan  London
1999-2001  Ray Postuma  Winnipeg
2001-2003  Mike Giacomantonio  Halifax

* indicates deceased

SECRETARY-TREASURERS

1967-1974  Barry Shandling  Toronto
1974-1978  Gordon Cameron  Hamilton
1978-1983  Frank M. Guttman  Montreal
1989-1995  Ray Postuma  Winnipeg
1995-2002  Salam Yazbeck  Montréal
2002 -  Peter G. Fitzgerald  Hamilton
FOUNDING MEMBERS

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
TURCOT*                 Jacques

*indicates deceased

1st ANNUAL MEETING was held January 22, 1969 in VANCOUVER
THE COATS OF ARMS
OF THE
CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS

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 guarit”.

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”.
The Hamilton and Toronto pediatric surgeons invite you to join us next year in scenic Niagara-on-the-Lake. Often called the loveliest town in Ontario, it is the home of the Shaw Theatre Festival and is nearby the world-famous Niagara wineries and Niagara Falls.

We will be meeting at the Queen’s Landing Inn & Conference Resort - a stately Georgian mansion with marble flooring, a sweeping spiral staircase and brilliant stained glass ceilings. Enjoy fine dining, a quiet stroll through town, a night at the Theatre, or a visit to the Falls when you’re not at the meeting!

Located within 1-2 hours of Toronto, Hamilton and Buffalo airports, Niagara-on-the-Lake is easily accessible by road or air.
GUEST LECTURER

DOCTOR BIRABWE-MALE

The visit by Doctor Birabwe-Male is made possible with the financial support of the Royal College of Physicians and Surgeons of Canada.

Dr. Birabwe-Male graduated from Mkerere University, Kampala, in 1984. In 1989 she completed a masters Degree in Surgery, then joined the Department of Paediatric Surgery at Mulago Hospital, a national and teaching hospital of Uganda.

In 1994 she trained for a year at Great Ormond Street Hospital and obtained a Diploma in Paediatric Surgery. In 1995 she returned to Kampala where she established a paediatric surgical unit and she has been in charge of this unit since that time.

Dr. Birabwe-Male is a member of the Ugandan and Eastern African Associations of Surgery, as well as the Pan African Association of Paediatric Surgeons. She is also a member of the Executive Committee of the Uganda Gastroenterology Society.

Dr. Birabwe-Male is currently a consultant Paediatric Surgeon and an honorary lecturer at Makerere University.

The Canadian Association of Pediatric Surgery is pleased to invite

DOCTOR BIRABWE-MALE

As a speaker of the Royal College of Physicians and Surgeons of Canada to give the Fred MacLeod Annual Lecture.
RESIDENTS' PAPERS

The papers presented by Surgical Residents are adjudicated by a panel of members from the Publication Committee. There are two award categories: the best Clinical paper and the best Experimental paper. Selection will be made only from the Original Papers Category. Each award is $500. The Program Committee normally tries to schedule the Residents papers during the first two days of the meeting to enable the awarding of the Residents Prizes during the Presidential Dinner. Due to the events of September 11, 2001 there were no Resident awards for the papers submitted for the 33rd Annual Meeting.

WINNERS OF THE 2000 RESIDENT BEST PAPER AWARDS

BEST CLINICAL RESEARCH PAPER

Dr. David J. HACKAM

“Mechanism of pediatric trauma deaths in Canada and the United States: The role of firearms”
D.J. Hackam, M.V. Mazziotti, R.H. Pearl, A.L. Winthrop, M. Krellex, J.C. Langer
The Hospital for Sick Children, Toronto (Ontario) CANADA
St.Louis Children’s Hospital, St.Louis MO U.S.A.

BEST BASIC SCIENCE RESEARCH PAPER

Dr. Ioana BRATU

“Pulmonary artery remodeling after reversible tracheal occlusion in diaphragmatic hernia”
I. Bratu, H. Flageole, J.M. Laberge, M.F. Chen, B. Piedboeuf
McGill University Health Center, The Montreal Children’s Hospital
Montreal (Quebec) CANADA

CONGRATULATIONS DR. HACKAM AND BRATU!
WINNERS OF THE 2000
RESIDENT BEST PAPER AWARDS

BOOK PRIZE – ASHCRAFT TEXTBOOK

Dr. Adriana S. CONDELLLO

"Pediatric trauma registries: The foundation of quality care"
A.S. Condello, H.J. Hancock, M. Hoppensack, M. Tenenbein,
T. Charky-Stewart, D. Kirwin, J. Williamson, C. Findlay,
M. Moffatt, N. Wiseman, R. Postuma
University of Manitoba, Winnipeg (Manitoba) CANADA

SUBSCRIPTION TO JOURNAL OF
PEDIATRIC SURGERY

Dr. John GILLICK

"Intestinal neuronal dysplasia: Results of treatment in 33 patients"
J. Gillick, H. Tazawa, P. Puri
Children’s Research Centre, Our Lady’s Hospital for Sick Children
Crumlin, Dublin IRELAND

SUBSCRIPTION TO SEMINARS IN
PEDIATRIC SURGERY

Dr. Paul WALES

"Long-term outcome after nonoperative management
of complete traumatic pancreatic transection in children"
P. Wales, B. Schuckett, P.C.W. Kim
The Hospital for Sick Children, Toronto (Ontario) CANADA

CONGRATULATIONS DR. CONDELLLO, GILLICK AND WALES!
THE CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS WOULD LIKE TO ACKNOWLEDGE THE FINANCIAL SUPPORT OF THE FOLLOWING SPONSORS

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PROGRAM SCHEDULE
PROGRAMME DÉTAILLÉ

ABBREVIATIONS

O       original 8-minute paper
R       resident’s paper
C/T     4 minute case/technique report

O,R     Adjudicated
C/T     Not adjudicated
THURSDAY, SEPTEMBER 19, 2002

WESTIN BAYSHORE RESORT & MARINA

12:00 - 17:00  Meeting of CAPS Council (Executive)
               Chairman’s Room

17:00          Registration
               Stanley Park Ballroom Foyer

18:00 - 22:00  Welcoming Reception
               Marine Room,
               Westin Bayshore Resort & Marina
FRIDAY, SEPTEMBER 20, 2002

Westin Bayshore Resort & Marina
Stanley Park Ballroom

07:00 - 12:00  Registration
              Stanley Park Ballroom Foyer

07:00 - 07:30  Continental Breakfast
              Stanley Park Ballroom Foyer

07:30 - 07:40  Welcome and Opening Ceremony
              President, Dr. Michael Giacomantonio
              Stanley Park Ballroom

07:40 - 09:40  Scientific Session I
              Stanley Park Ballroom

09:40 - 10:10  Refreshment Break
              Stanley Park Ballroom Foyer

10:10 - 11:15  Scientific Session II
              Stanley Park Ballroom

11:15 - 12:00  Fred Mac Leod Lecture
                Doctor Birabwa-Male

12:00 - 13:00  Lunch

13:00 - 14:20  Scientific Session III
                Stanley Park Ballroom
Friday, September 20, 2002
Scientific Session I
Stanley Park Ballroom

7:30-7:40  President’s Welcome
Dr. Michael Giacomantonio

7:40-7:48  1  OR  Complicated Gastrochisis and Maternal Smoking-A Causal Association?
M. Zamakhshary, N.L. Yanchar
IWK Health Centre-Halifax (Nova Scotia)
CANADA
4 minute discussion

7:52-8:00  2  OR  Gastrochisis- A Fifteen Year Review
G. Kaban, J. Baerg, J. Tonita, D. Reid
Regina General Hospital and
University of Saskatchewan
Regina (Saskatchewan) CANADA
4 minute discussion

8:04-8:08  3  TR  Management of Giant Omphalocele in a Premature Low Birth-Weight Neonate Utilizing a Bedside Sequential Clamping Technique Without Synthetic Material
R.J. Hendrickson, D.A. Partrick, J.S. Janik
The Children’s Hospital and
University of Colorado School of Medicine
Denver, Colorado USA
4 minute discussion

8:12-8:16  4  TR  Absorbable Mesh and Skin Flaps/Grafts in the Management of Ruptured Giant Omphaloceles
D. Sigalet, O.A. Bawazir, A. Al-Otabi, A. Wong
Alberta Children’s Hospital
Calgary (Alberta) CANADA
4 minute discussion

8:20-8:28  5  OR  Is Contralateral Exploration Necessary in Girls with Unilateral Inguinal Hernia?
D. DeCaluwe, B. Chertín, G. Mahendran,
A. Piaseczna-Piotrowska, P. Puri
Children’s Research Centre and Our Lady’s Hospital for Sick Children
Dublin, IRELAND
4 minute discussion
8:32-8:40 6 OR  
Gastrointestinal Duplications  
P. Puligandla, L. Nguyen, D. St. Vil,  
A. Bensoussan, J-M. Laberge  
Montreal Children's Hospital and  
Hôpital Ste-Justine  
Montreal (Quebec) CANADA  
4 minute discussion

8:44-8:52 7 O  
Anal Canal Duplication in Infants  
S-O. Choi, W-H Park  
Keimyung University School of Medicine  
Daegu, KOREA  
4 minute discussion

8:56-9:04 8 O  
Endoscopic Follow-Up of Esophageal Atresia-How Long Is It Necessary?  
J. Schalamon, H. Lindhal, H. Saarikoski, R. Rintala  
Children's Hospital, University of Helsinki  
Helsinki, FINLAND  
4 minute discussion

9:08-9:12 9 TR  
Can "Long-Gap" Esophageal Atresia Be Safely Managed at Home While Awaiting Anastomosis?  
D. Aziz, D. Schiller, J. Gerstle, J. Langer  
Hospital for Sick Children  
Toronto (Ontario) CANADA  
4 minute discussion

9:16-9:20 10 TR  
Lengthening Technique for Long-Gap Esophageal Atresia and Early Anastomosis  
A. Al-Qahtani, S. Yazbeck, S. Youssef,  
N. Rosen, S. Mayer  
Hôpital Ste-Justine  
Montreal (Quebec) CANADA  
4 minute discussion

9:24-9:32 11 OR  
Aggressive Conservative Treatment Remain the Best Option for Oesophageal Perforation in Children  
L. Martinez, S. Rivas, F. Hernandez, L. Avila,  
L. Lassaletta, J. Murcia, P. Olivares, A. Queizan,  
M. Lopez-Santamaria, J. Tovar  
Hospital Universitario La Paz  
Madrid, SPAIN  
4 minute discussion

9:40-10:10  
BREAK
Scientific Session II
Stanley Park Ballroom

10:10-10:18  12  OR  Outcome of Pediatric Live-Donor Liver Transplantation
I. Diamond, S. Borenstein, D. Grant, P. Greig,
N. Jones, V. NG, E. Roberts, A. Fecteau
Hospital for Sick Children and
University of Toronto
Toronto (Ontario) CANADA
4 minute discussion

10:22-10:26  13  CR  Successful Treatment of a Hepatic Yolk Sac Tumor by Liver Transplantation
L. Abramson, S. Pillai, R. Acton, R. Superina
Children's Memorial Hospital
Chicago, Illinois USA
4 minute discussion

10:30-10:38  14  OR  Cut It Out: Managing Hepatic Abscesses in Patients with Chronic Granulomatous Disease
L. Chen, R. Minkes, P. Shackelford,
S. Strasberg, E. Kuo, J. Langer
St Louis Children’s Hospital and Barnes-Jewish Hospital and Washington University School of Medicine
St. Louis, Missouri USA
4 minute discussion

10:42-10:50  15  O  DPC-4 (SMAD-4) and K-Ras Gene Mutations in Biliary Tract Epithelium in Children with Anomalous Pancreaticobiliary Ductal Union
T. Shimotake, H. Tomiyama, K. Tokiwa, N. Iwai
Children’s Research Hospital and
Kyoto Prefectural University of Medicine
Kyoto JAPAN
4 minute discussion
10:54-10:58  16  CR  Spleenic Artery Embolization in the Management of Intracranial Hemorrhage Due to Immune Thrombocytopenic Purpura
D. Puapong, M. Lacerna, K. Terasaki, H. Applebaum
Kaiser Permanente Medical Center
Los Angeles California  USA
4 minute discussion

11:02-11:06  17  CR  The Need of an Accurate Diagnosis in Congenital Vascular Tumors
L. Martinez, J. Lopea-Gutierrez, Z. Ros, M. Diaz, M. Martin, J. Tovar
Hospital Universitario La Paz
Madrid, SPAIN
4 minute discussion

11:15-12:00  FRED MACLEOD LECTURE
– DR. BIRABWE-MALE

12:00-13:00  LUNCH
Friday, September 20, 2002

Scientific Session III
Stanley Park Ballroom

13:00-13:08 18 OR *Analysis of an Improved Survival Rate for Congenital Diaphragmatic Hernia*
C. Downard, T. Jaksie, J. Garza, A. Dzakovic, L. Pelosi, R. Jennings, J. Wilson
Children’s Hospital, Harvard Medical School
Boston, Massachusetts USA
4 minute discussion

L. Martinez, M. Rodriguez-Matas, S. Gonzalez-Reyes, J. Rodriguez, J. Diez-Pardo, J. Tovar
Hospital Universitario La Paz
Madrid, SPAIN
4 minute discussion

13:24-13:32 20 OR *Expression of Heme Oxygenase and Endothelial Nitric Oxide Synthase in the Lung of Newborns with Congenital Diaphragmatic Hernia and Persistent Pulmonary Hypertension*
V. Solari, A. Piasiecza-Piotrowska, P. Puri
Children’s Research Centre and Our Lady’s Hospital for Sick Children
Dublin, IRELAND
4-minute discussion

13:36-13:40 21 TR *Trapdoor Thoracotomy-Its Application in Pediatric Surgery*
N. Ade-Ajayi, D. Drake, A. Pierro, E. Kiely, L. Spitz
Institute of Child Health and Great Ormond Street Hospital for Children
London, UNITED KINGDOM
4 minute discussion

13:44-13:52 22 OR *Image Guided Percutaneous Approach is Superior to Thorascopic Procedure in the Diagnosis of Pulmonary Nodules in Children*
University of Toronto and Hospital for Sick Children
Toronto (Ontario) CANADA
4 minute discussion
P. Puligandla, S. Kay, L. Morin, L. Jutras, D. Shum-Tim, H. Flageole
Montreal Children's Hospital, McGill University Health Centre
Montreal (Quebec) CANADA
4 minute discussion

14:00-14:08  24  OR  Endobronchial tumors in Children: Institutional Experience and Literature Review
A. Al-Qahtani, M. DiLorenzo, S. Yazbeck
Hôpital Ste-Justine
Montreal (Quebec) CANADA
4 minute discussion
Saturdays, September 21, 2002
Westin Bayshore Resort & Marina
Stanley Park Ballroom

06:00 - 08:00    Specialty Committee in Pediatric General Surgery Meeting
                 Chairman's Room

06:00 - 08:00    Publications Committee Meeting

07:00 - 12:00    Registration
                 Stanley Park Ballroom Foyer

07:00 - 07:30    Continental Breakfast
                 Stanley Park Ballroom Foyer

07:30 - 09:30    Scientific Session IV
                 Stanley Park Ballroom

09:30 - 10:00    Refreshment Break
                 Stanley Park Ballroom Foyer

10:00 - 11:00    Scientific Session V
                 Stanley Park Ballroom

11:00 - 12:00    "2 minutes / 2 slides"
                 Stanley Park Ballroom

12:00 - 14:00    CAPS Members Business Meeting
                 Marine Room

18:00            Presidential Reception –
                 Capilano Suspension Bridge Park

19:00            Presidential Potlatch (Banquet) –
                 Capilano Suspension Bridge Park
Scientific Session IV
Stanley Park Ballroom

7:30-7:38 25 OR  *Analysis of Pediatric Surgical Emergencies Following an Earthquake: Gujarat, India, 2001*
V. Jain, R. Noponen, B. Smith
Lucile Salter Packard Children' Hospital, Packard University and Finnish Red Cross and Department of Health Studies, Laurea Polytechnic Palo Alto, California USA and FINLAND
4 minute discussion

7:42-7:50 26 OR  *Trauma Stat and Trauma Minor: Are We Making the Call Appropriately?*
L. Chen, A. Snyder, R. Foglia
St. Louis Children's Hospital and Washington University School of Medicine St. Louis, Missouri USA
4 minute discussion

7:54-8:02 27 OR  *Should Helical CT Scanning of the Thoracic Cavity Replace the Conventional Chest X-ray as a Primary Assessment Tool in Pediatric Trauma? An Efficacy and Cost Analysis.*
J. Renton, S. Kincaid, P. Ehrlich
West Virginia University School of Medicine and Jon Michael Moor Trauma Center Morgantown, West Virginia USA
4 minute discussion

8:06-8:14 28 O  *Snowmobile Injuries and Fatalities in Children*
J. DeCou, L. Fagerman, D. Ropele, N. Uitvlugt, M. Schlatter, R. Connors
DeVos Children's Hospital Grand Rapids, Michigan USA
4 minute discussion

8:18-8:26 29 OR  *Life on the Farm- Children at Risk*
D. Little, E. Dikis, M. Custer, D. Cooney
Texas A & M Health Science Center Temple, Texas USA
4 minute discussion
8:30-8:38 30 OR  Endotracheal Intubations in Rural Pediatric Trauma Patients
O. Atallah, P. Seidman, S. Kincaid, P. Ehrlich
West Virginia University School of Medicine and Jon Michael Moor Trauma Center
Morgantown, West Virginia USA
4 minute discussion

8:42-8:50 31 OR  Getting Down to the Bottom of Perineal Injuries
S. Joerger, L. Chen, E. Kuo, R. Foglia
St. Louis Children’s Hospital and Washington University School of Medicine
St. Louis, Missouri USA
4 minute discussion

8:54-9:02 32 OR  Are Localized Intestinal Perforations Distinct from Typical Necrotizing Enterocolitis in Neonates?
H. Hwang, K. Gow, J. Magee, J. Murphy
British Columbia Children’s Hospital
Vancouver (British Columbia) CANADA
4 minute discussion

9:06-9:14 33 OR  Moderate Hypothermia Reduces Plasma Cytokines and Endotoxin After Intestinal Ischemia-Reperfusion
S. Williams, M. Allen, S. Williams, N. Klein, A. Pierro
Institute of Child Health
London UNITED KINGDOM
4 minute discussion

9:18-9:26 34 OR  Neonatal Endotoxemia Affects Heart but Not Kidney Bioenergetics
K. Fukumoto, A. Pierro, L. Spitz, S. Eaton
Institute of Child Health and Great Ormond Street Hospital for Sick Children
London UNITED KINGDOM
4 minute discussion

9:30–10:00 BREAK
Scientific Session V
Stanley Park Ballroom

10:00-10:08  35  OR  Correlation Between Radiographic Transition Zone and Level of Aganglionosis in Hirschsprung Disease: Implications for Surgical Approach
M. Proctor, J. Traubici, J. Langer, G. Gibbs, S. Ein, P. Kim
Hospital for Sick Children
Toronto (Ontario) CANADA
4 minute discussion

10:12-10:20  36  O  Discrepancy Between Macroscopic and Microscopic Transitional Zones in Hirschsprung's Disease with Reference To the Type of RET/GDNF/SOX10 Gene Mutation
T. Shimotake, H. Tomiyama, N. Iwai
Children's Research Hospital and Kyoto Prefectural University of Medicine
Kyoto JAPAN
4 minute discussion

10:24-10:28  37  CR  Management of Spontaneous Colonic Perforation in Ehlers-Danlos Syndrome Type IV
J. Fuchs, S. Fishman
Children's Hospital
Boston, Massachusetts USA
4 minute discussion

10:32-10:40  38  OR  Alteration in Smooth Muscle Contractile and Cytoskeleton Proteins and Interstitial Cells of Cajal in Megacystis Microcolon Intestinal Hypoperistalsis Syndrome
A. Piasczczka-Piotrowska, U. Rolle, D. Decaluwe, B. Chertin, A. Bianchi, P. Puri
Children's Research Center, Our Lady's Hospital for Sick Children and St. Mary's Hospital Dublin IRELAND and Manchester
UNITED KINGDOM
4 minute discussion
Increased CT Scan Utilization Does Not Improve the Diagnostic Accuracy of Appendicitis in Children
A. Partrick, J.E. Janik, J.S. Janik, D. Bernard, F. Karrer
The Children’s Hospital, University of Colorado
Denver, Colorado USA
4 minute discussion

11:00-12:00  2 MINUTES – 2 SLIDES

12:00-14:00  CAPS BUSINESS MEETING
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<td>07:00 - 09:00</td>
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<td>Resident prizes for excellence</td>
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<td>10:40</td>
<td>President's Closing Remarks</td>
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Sunday, September 22, 2002

Scientific Session VI
Stanley Park Ballroom

7:30-7:38  40  OR  Laparoscopic Resection of Ileocolic Crohn’s Disease in Children
S. Dutta, S. Rothenberg, J. Chang, J. Bealer
Presbyterian/St. Luke’s Hospital for Woman and Child
Denver, Colorado USA
4 minute discussion

7:42-7:46  41  C  A Simple Technique of Laparoscopic Full-Thickness Anterior Abdominal Wall Repair of Retrosternal (Morgagni) Hernias
G. Azzie, K. Maoate, S. Beasley
Christchurch Hospital
Christchurch NEW ZEALAND
4 minute discussion

7:50-7:58  42  O  Reduction in Visceral Slide is a Good Sign of Underlying Post-Operative Viscero-Parietal Adhesions in Children
Women’s and Children’s Hospital and Great Ormond Street Hospital for Children North Adelaide AUSTRALIA and London UNITED KINGDOM
4 minute discussion

8:02-8:10  43  OR  When Can I Be Proficient in Laparoscopic Surgery? A Systematic Review of Evidence.
H. Dagash, M. Chowdhury, A. Pierro
Institute of Child Health and Great Ormond Street Hospital
London UNITED KINGDOM
4 minute discussion

G. di Abriola, P. De Angelis, L. Dall’Oglio
Bambino Gesù Children’s Hospital
Rome ITALY
4 minute discussion
8:26-8:34  45  OR  Delayed Complications of Central Venous Catheters Placed Surgically or Radiologically in Pediatric Patients
T. Basford, D. Poenaru, M. Silva
Queen's University School of Medicine
Kingston (Ontario) CANADA
4 minute discussion

8:38-8:42  46  C  Spontaneous Involution of Intra-Abdominal Pulmonary Sequestration
A. Pierro, M. Samuel, J. Constantinou,
M. Chowdhury
Institute of Child Health and Great Ormond Street Hospital
London UNITED KINGDOM
4 minute discussion

8:46-8:54  47  OR  Surgical Implications of Urachal Remnants: Presentation and Management
M. McCollum, G. Blair
British Columbia Children's Hospital
Vancouver (British Columbia) CANADA
4 minute discussion

9:00-9:30  BREAK

9:30-9:40  RESIDENT PRIZES
Sunday, September 22, 2002

Scientific Session VII
Stanley Park Ballroom

9:40-9:48 48 O  
*Towards Evidence-Based Best Practices in Neonatal Surgical Care*
A. Skarsgard, G. Blair, S. Lee
University of British Columbia and Centre for Health Care Innovation and Improvement
Vancouver (British Columbia) CANADA
4 minute discussion

9:52-10:00 49 O  
*Quality of Life of Children Who Have Undergone the Nuss Procedure for Pectus Excavatum*
J. Roberts, A. Hayashi
University of Victoria and Vancouver Island Health Authority
Victoria (British Columbia) CANADA
4 minute discussion

10:04-10:12 50 O  
*Cost-Effectiveness of Laparoscopic Appendectomy in Children*
H. Lintula, K. Vanamo, M. Mattila, H. Kokki
Kuopio University Hospital
Kuopio FINLAND
4 minute discussion

10:16-10:24 51 O  
*A Chicken Model For Studying the Embryology of Clonal Extrophy*
J. Manner, D. Kluth
Georg-August-University Göttingen and UKE Hamburg
Hamburg GERMANY
4 minute discussion

10:28-10:32 52 O  
*Combined Approach to Functional Constipation in Children*
S. Amendola, P. De Angelis, K. Dall’Oglio, G. Federici di-Abrilia
Bambino Gesu Children’s Hospital
Rome ITALY
4 minute discussion

10:40
PRESIDENT’S CLOSING REMARKS
ABSTRACTS

RÉSUMÉS

ABBREVIATIONS

O  original 8-minute paper
R  resident’s paper
C/T  4 minute case/technique report

O,R  Adjudicated
C/T  Not adjudicated
1. Session One  Friday  7:40  OR

**COMPLICATED GASTROSCHISIS AND MATERNAL SMOKING – A CAUSAL ASSOCIATION?**

M. Zamakhshary, N.L. Yanchar
The Division of Pediatric General Surgery, IWK Health Centre, Halifax, Nova Scotia

**Background/Purpose:** The incidence of gastroschisis appears to be rising in developed nations, with epidemiological studies indicating association with young maternal age and smoking. Mortality with current advances in treatment is very low. However, gastroschisis still carries considerable morbidity, especially if associated with complications such as intestinal atresia, vascular compromise and intestinal dysfunction, which are, in part, felt to result from intrauterine vascular insults. The relationships between gastroschisis on one side and smoking, its vasoactive properties and its increased incidence amongst young women are intriguing. Is there an association between maternal smoking and the development of complicated gastroschisis?

**Method:** A retrospective chart review of all cases of gastroschisis treated at our institution, over the past 11 years, was conducted. Complicated cases were those with an associated intestinal atresia or other vascular compromise of the bowel, those requiring a prolonged time to full enteral feeding (>42 days) or those who died. Univariate and multivariate regression analyses were used to look at the relationship between various maternal and perinatal factors, and the development of these complications. Subgroup analyses was performed on cases involving intestinal atresias and vascular compromise. Odds ratios (OR) were obtained with 95% confidence intervals (CI) not spanning 1.00 considered statistically significant.

**Results:** Fifty-four cases of gastroschisis were treated, of which 8 had associated intestinal atresias and 4 others had evidence of vascular compromise. Nine infants required a prolonged time to reach full enteral feeds. Four patients died as a result of TPN-induced liver failure (2) and sepsis (2). On Univariate analysis statistically significant associations with complicated cases were young maternal age (<19 years) (OR= 6.80, CI: 1.44,32.19), low birth weight (<2400g), (OR=10.63, CI: 2.53, 44.79), and gestational age under 35 weeks (OR=14.0, CI: 2.47, 79.20). There was no significant association with maternal weight gain, mode of delivery, Apgar scores, degree of intrauterine growth restriction, time to primary closure, and primary versus staged closure. Seven of 24 cases involving maternal smoking developed atresias or vascular intestinal compromise versus 4 of 27 cases with no maternal smoking, with an odds ratio of 2.37. This, however, did not reach statistical significance (CI:0.60,9.40). On multivariate analysis, atresias and vascular compromise remained significantly associated with young maternal age, low gestational age and low one-minute Apgar score. Maternal smoking, however, was still not statistically significant.

**Conclusion:** Young maternal age, low birth weight and young gestational age are independent risk factors for the development of complicated gastroschisis, most notably cases involving intestinal atresias and vascular compromise. In our study, maternal smoking was not statistically related. Epidemiological and basic science findings, however, suggest that nicotine’s vasoactive properties may play a role in the pathogenesis of complicated gastroschisis. This warrants further prospective, multicenter studies to investigate this potential relationship.

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GASTROSCHISIS - A FIFTEEN YEAR REVIEW

Dr. G. Kaban, Dr. J. Baerg, J. Tonita, Dr. D. Reid
Regina General Hospital, University of Saskatchewan
Regina, Saskatchewan

PURPOSE: We propose to examine the incidence of gastroschisis, correlate any association with geography, perform outcome analysis and identify risk factors for mortality.

METHODS: Information was obtained by retrospective review of all infant and maternal charts at the only two provincial tertiary care centers between 1985 – 2000.

Maternal factors recorded were race, location, age, smoking, drug use, prenatal diagnosis, and mode of delivery. Neonatal factors were gestational age, weight, sex, apgar score, other anomalies, time to OR, method of closure, time to full feeds, sepsis and length of stay. Live birth data for the province was obtained and the incidence per 1000 live births for each five-year interval was calculated. Outcome analysis was performed with survival as the dependent variable.

RESULTS: 72 infants were identified. There was an increase in the incidence of gastroschisis from 0.185 in 1985-1990, 0.366 in 1991-1995, and 0.406 in 1996-2000.

No geographical association was identified. Mortality was 7% (5/72). Regression analysis revealed intestinal atresia, (OR=12+/−1.8) necrotising enterocolitis (OR=10.3+/−2.1) and positive blood cultures (OR=7.5+/−2.2) were associated with poor outcome.

CONCLUSION: The incidence of gastroschisis is increasing. No geographical association was identified. Intestinal atresia, NEC and positive blood cultures may predict poor outcome.

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MANAGEMENT OF GIANT OMPHALOCELE IN A PREMATURE LOW BIRTH-WEIGHT NEONATE UTILIZING A BEDSIDE SEQUENTIAL CLAMPING TECHNIQUE WITHOUT SYNTHETIC MATERIAL

Richard J Hendrickson, MD, David A Partrick, MD
and Joseph S. Janik, MD,
The Children’s Hospital and The University of Colorado
School of Medicine
Department of Pediatric Surgery
Denver, Colorado 80218

BACKGROUND: Management of giant omphalocele is a challenging clinical situation. Closure of large defects in critically ill premature low birth-weight neonates is even more complex. We describe a staged noninvasive technique for the gradual reduction of a large omphalocele in a premature, low birth weight neonate, until primary closure could be attempted.

METHODS: A 30 week 1470 gram neonate was born with a giant omphalocele (12 x 7 centimeters). An external vascular clamp was applied to the intact omphalocele sac with gradual reduction of the contents at the bedside. This clamping technique was advanced sequentially every 48-72 hours based upon hemodynamic, pulmonary and renal parameters. An antibiotic ointment was utilized to prevent the sac from desiccating.

RESULTS: Successful sac removal and primary repair was achieved at four weeks without hemodynamic or pulmonary compromise. Patient was extubated two weeks post operatively and was on ad lib feeds within four weeks.

CONCLUSION: We report the successful noninvasive management of a low birth-weight preemie with a large omphalocele utilizing the native omphalocele sac as a “Hemosilo” until gradual bedside reduction brought the fascial edges close enough for primary closure without undue tension.

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4. Session one  Friday  8:12  TR

ABSORBABLE MESH AND SKIN FLAPS/GRAFTS IN THE MANAGEMENT OF RUPTURED GIANT OMPHALOCELES

David L. Sigalet MD, PhD, FRCSC, FACS,
Osama Abdullah Bawazir, M.D.,
Abdullah Al Otaibi M.D., Andrew Wong M.D.
Alberta Children’s Hospital, Calgary, Alberta

PURPOSE: We report the use of absorbable mesh closure with skin graft/skin flap coverage for giant ruptured omphalocele.

METHODS: Retrospective review of a single surgeon’s experience, 1996 - 2001. RESULTS: Four infants were identified. They were premature (36 +/- 2 weeks)(data:median +/- range), with large defects (9 +/- 1 cm). Silo reduction was attempted in three for 14 days +/- 1 days; all developed respiratory compromise with attempted reduction. In these 3 patients, the silo was removed and the defect bridged with Vicryl (R) (Johnson and Johnson, Cincinnati, Ohio) mesh; in the remaining patient mesh coverage was used initially. In two patients direct skin flap coverage, in the other two patients after 10 days maturation a split thickness skin graft was applied. After skin coverage, all patients were extubatable within 5 days. Although no patients had abnormal compliance or lung volumes, all had a distinct narrow contour on chest x-ray (“greyhound chest”). Despite adequate initial ventilation, 2 patients developed respiratory failure with tracheostomies at age 3 and 7 months; both were subsequently decannulated. All children have required multiple reoperations (3.5 +/- 1.5, after 4.5 +/- 3 years).

CONCLUSIONS: Infants with giant omphalocele have significant pulmonary morbidity, limiting the use of silo closure of the abdominal wall. Absorbable Vicryl (R) mesh with skin flap/skin graft coverage provides durable closure with good long-term outcome; this option could also be applied to nonruptured giant omphaloceles.

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IS CONTRALATERAL EXPLORATION NECESSARY IN GIRLS WITH UNILATERAL INGUINAL HERNIA?

De Caluwé D., Chertin B., Mahendran G., Piaseczna-Piotrowska A., Puri P.
Children’s Research Centre of Our Lady’s Hospital for Sick Children
Dublin, Ireland

BACKGROUND/PURPOSE Routine contralateral groin exploration in girls with unilateral inguinal hernia (UIH) continues to be controversial. The aim of this study was to determine the incidence of contralateral hernia development in girls following UIH repair.

METHODS Between 1972-2000, 391 girls underwent repair of UIH. Ninety-one (23%) of the 391 girls underwent routine contralateral exploration during UIH repair and were excluded from the study. The median age at operation in the remaining 300 girls was 3.3 years (range 1 month-14 years). Two hundred and ten (70%) girls had right sided and 90 (30%) had left sided UIH respectively. Familial history of hernia was identified in 8 (3%) patients. The followup ranged from 1 to 14 years. Mann-Whitney test was employed for intergroup comparison.

RESULTS A contralateral hernia developed in 24 (8%) of the 300 patients who had unilateral repair only. Median time from operation to occurrence of the contralateral hernia was 3 years (range 1-4 years). Age at operation, side of hernia, and familial history did not influence the development of contralateral hernia.

CONCLUSIONS Our data suggest that the low incidence of contralateral hernia development in girls undergoing UIH repair does not justify routine contralateral groin exploration.

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GASTROINTESTINAL DUPLICATIONS

P.S. Puligandla¹, L.T. Nguyen¹, D. St.Vil², A.L. Bensoussan², and J-M. Laberge¹
Divisions of Pediatric Surgery, Montreal Children’s Hospital¹ and Hôpital Ste. Justine², Montreal, Quebec, Canada

Background/Purpose: To review the presentations of gastrointestinal duplication (GID) and assess the influence of prenatal diagnosis on treatment.


Results: Seventy-two patients (M43:F29) were identified: 21 neonates; 25 infants (1-12 months); 17 children (1-10 years); 9 adolescents (≥11 years). GID location by frequency was: ileum (30.5%); ileocecal valve (30.5%); duodenum (9.7%); stomach (8.3%); jejunum (8.3%); colon (5.5%); rectum (5.5%). In neonates and infants, vomiting and distension were most common. Volvulus, due to a duplication, occurred in 23.8% of neonates, and caused the death of 1 patient. Intussusception was identified in 9.7% of patients. In older children/adolescents, pain and vomiting were the most common associations. Six of these patients were being treated for Crohn’s disease (CD), with the diagnosis of duplication made at laparotomy. Eighteen patients had a prenatal diagnosis by ultrasound (US), with 72.2% of these being asymptomatic after birth. Most prenatal diagnoses occurred after 1990 (87.5%). When comparing the earlier period (1980-89; 20 patients) to the current (≥1990; 54 patients), a greater proportion of the latter patients were asymptomatic (65% vs 90%), although the incidence of complications (volvulus/intussusception) was similar.

Conclusions: GID can lead to life-threatening complications. Prenatal diagnosis should lead to postnatal investigation and treatment, even in asymptomatic patients. GID in older children can mimic CD. Laparoscopy/laparotomy should be considered in patients with atypical CD.

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ANAL CANAL Duplications IN INFANTS

Soon-Ok Choi, Woo-Hyun Park
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Background/Purpose: Anal canal duplication (ACD) is the most distal and the least frequent digestive duplication. ACD should be restricted to cases of sagittally located single duplication of the anal canal without communicating to rectum and accompanying duplication or other anomalies of the urinary tract or external genitalia, but including some cases with sacral dysgenesis or congenital anorectal malformations. A review of the English literature revealed less than 20 cases reported in the pediatric age group.

Methods: A retrospective review was performed for our experience of 6 patients who presented with postanal opening from 1999 to 2001.

Results: All patient were female and mother noted a small opening posterior to anus. There was no history of erythematous swelling or fluctuation suggesting perianal abscess and there was no discharge from the opening. The anal canal duplication was clearly shown by contrast study of the tract. Ultrasonography or pelvic CT was used to evaluate the associated other anomalies. All patient had a normal sacrum, normal anal sphincter tone, and normal anal function. The ages of patients ranged from 3 months to 9 months at the diagnosis. In all cases except one, operation was undertaken between 3 months to 8 months of age. Excision of the ACD was accomplished through the posterior sagittal approach without difficulty. The ACD was keep in midline and ended blindly 0.5 cm above the dentate line without luminal communication.

The histology revealed a squamous epithelium with smooth muscle bundle in two cases and pseudostratified columnar epithelium with focally squamous epithelial lining and adjacent smooth muscle bundles in 3 cases. Anal glands were noted in all cases. The postoperative courses were uneventful with satisfactory anal function.

Conclusions: On the basis of our own cases and those described in the literature, the diagnosis of ACD should be restricted to limited cases with a single duplication of the anal canal and differentiated from the duplication of the hindgut with or without GU involvement. Early excision is recommended through the posterior sagittal incision because it may infect and delayed presentation with infection may confused to have perianal abscess or fistula which led to multiple recurrence.

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ENDOSCOPIC FOLLOW UP OF OESOPHAGEAL ATRESIA – HOW LONG IS IT NECESSARY?

Schalamon J., Lindahl H., Saarikoski H., Rintala R.J.
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Background/Purpose: Gastro-oesophageal reflux and oesophagitis are frequent long-term problems of oesophageal atresia. It is unknown for how long oesophageal atresia patients are susceptible to develop these complications. The aim of this study was to find out the time period of endoscopic follow-up required to prevent irreversible mucosal changes in oesophageal atresia patients.

Patients and methods: Seventy-four (94%) of 79 long-term survivors with oesophageal atresia and primary anastomosis underwent a total of 322 oesophagogastroduodenoscopies with biopsy samples during a 0.5 - 19 years follow-up. For analysis, the biopsy findings were divided into two groups: Good - histologically normal or only mildly inflamed mucosa; Unfavourable - moderate or severe oesophagitis or gastric metaplasia. Fundoplication irrespective of indications was considered unfavourable. The results were analysed using actuarial survival analysis, the turning point being when good turned into unfavourable.

Results: Forty-five patients (61%) stayed good throughout the study period. Ten patients (14%) had moderate or severe oesophagitis, and 13 patients (18%) developed gastric metaplasia. Fundoplication was performed on 21 patients (28%).

Conclusions: About 40% of oesophageal atresia patients develop significant oesophageal mucosal pathology or need fundoplication. Most of the changes appear before the age of three years. Routine follow-up endoscopy is recommended at least to the age of three years.

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CAN "LONG-GAP" ESOPHAGEAL ATRESIA BE SAFELY MANAGED AT HOME WHILE AWAITING ANASTOMOSIS?

Dan Schiller, Justin T. Gerstle, Jacob C. Langer
Hospital for Sick Children,
Toronto, Ontario

**Background:** Neonates with “long-gap” esophageal atresia (EA) are often managed with a gastrostomy and tube drainage of the proximal pouch for a number of months while awaiting definitive repair. Because of the risk of aspiration and need for complex nursing care, most remain hospitalized during this time. However, prolonged hospitalization utilizes scarce resources and may be difficult for many families.

**Methods:** We report four patients who were successfully managed at home while awaiting esophageal anastomosis.

**Results:** Three had pure EA (one also had duodenal atresia) and one had a distal fistula. Gestational ages ranged from 31-41 wks. All had a gastrostomy within days of birth. Age at definitive repair ranged from 6.3-11.5 mo. Time at home while awaiting anastomosis ranged from 83-120 days. Care at home included home nursing (24 hours initially and then home visits), suction equipment and training, gastrostomy feeding, and ability to perform CPR. No child had an episode of pneumonia while at home, and the only complication consisted of an ear infection in one patient.

**Conclusions:** Selected patients with “long-gap” esophageal atresia can be safely managed at home while awaiting esophageal anastomosis. Success of this approach depends on a motivated, reliable family, and adequate support from community health care providers.

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LENGTHENING TECHNIQUE FOR LONG-GAP ESOPHAGEAL ATRESIA AND EARLY ANASTOMOSIS

Aayed R. Al-Qahtani, Salam Yazbeck, Sami Youssef,
Nelson Rosen, Sandeep Mayer
Département of Surgery, Hôpital Sainte-Justine,
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Background: While many operative techniques have been described for long-gap esophageal atresia, none are ideal. We applied a technique originally described by Dr. John E. Foker, and accomplished primary repair within 10-19 days in three infants with long-gap atresia.

Methods: Three infants with esophageal atresia underwent thoracotomy within 36h of birth and had a long gap. External traction sutures were placed on each esophageal pouch, marked with radiopaque clips and exteriorized through the thoracic wall. The esophageal ends were approximated 1-2 millimeters daily by traction on the sutures. Primary anastomosis was performed when the two ends came together.

Results: Three infants were included (mean gestation 34 weeks, mean weight 1.8 kg). All had long gaps of 3, 4.5 and 5 cm. respectively. Delayed primary repair was successful at 10, 14, and 19 days respectively. Two patients developed leaks that were managed conservatively with esophageal stenosis that required balloon dilatation in one.

Conclusion: This technique allowed rapid esophageal growth and lengthening in these three cases that led to early primary repair of long-gap esophageal atresia, avoiding the need for a prolonged course or eventual esophageal replacement.

Index words: Esophageal atresia, long gap, lengthening technique, external traction.

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AGGRESSIVE CONSERVATIVE TREATMENT REMAINS THE BEST OPTION FOR ESOPHAGEAL PERFORATION IN CHILDREN

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Background/aims: Oesophageal perforation (OP) requires prompt and vigorous treatment. In contrast with adult patients in whom surgical closure of perforation is preferred, non-operative treatment has been the usual approach in children. The present report aims at assessing whether this strategy stands the passage of time.

Material and Methods: We studied retrospectively the charts of patients treated at our institution for OP between 1991 and 2001 with a combination of: 1) wide spectrum antibiotics, 2) nasopharyngeal aspiration, 3) parenteral or infra-oesophageal nutritional support, 4) drainage of purulent exudates and 5) direct surgery only if it is unavoidable.

Results: We treated 19 episodes of OP in 17 patients aged 5.3±0.94 years. In 9 cases (4 lye burns, 3 oesophageal atresias, 1 bullous epidermolysis and 1 mucocutaneous candidiasis) OP occurred during dilatation of strictures. Foreign body extraction was the cause in 3 cases, and blunt trauma and sclerosis of varices were the causes in 2 cases each. The last child had multiple gastrointestinal perforations during treatment for leukaemia. Subcutaneous emphysema was seen in 7 instances, pneumomediastinum/pneumothorax in 14, pleural effusion in 9, dyspnoea in 9, severe pain in 1 and pericardial effusion in 1. The diagnosis was intraoperative in only 2 children but the symptoms and imaging signs prompted vigorous treatment within the first 24 hours in 15 instances. One or more pleural tubes were inserted in 11 cases and pericardial drainage was required once. Perforations closed without direct surgery in 18/19 episodes (16/17 children). Five gastrostomies and 2 jejunostomies were performed and several major abdominal operations were necessary to repair concurrent lesions in a child who sustained severe blunt abdominal trauma and in the one with leukaemic perforations. All these patients survive and all recovered oesophageal function although 2 with intractable lye strictures ultimately required oesophageal replacement 6 and 10 months after OP. The only patient in whom direct approach for oesophageal necrosis after variceal endosclerosis was unavoidable lost her organ and had a replacement after a successful porto-systemic shunt.

Conclusions: Prompt and aggressive non-operative approach of oesophageal perforations in children allows survival and conservation of the organ and its function in most cases and should remain the first therapeutic choice at this age.

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OUTCOME OF PEDIATRIC LIVE-DONOR LIVER
TRANSPLANTATION

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Background: Live-donor liver transplantation (LDLT) developed to address the
critical shortage of cadaveric organs that accounts for 20% of children dying
awaiting a liver transplant in Ontario each year. This paper reviews the outcome
of the pediatric recipients of LDLT at our centre.
Methods: Retrospective chart review of all children who received a LDLT between
Results: 13 children received a LDLT. All but one of the donors were the child’s
parent. Average age at transplant was 3.6 years. Graft type was left-lobe in 1, left-
lateral segment in 10 and right-lobe in 2 patients. Three patients required a silastic
patch for delayed abdominal wall closure. Patient and graft survival were 100%
with mean follow-up of 453 days. Per patient rate of complications was 1.08
major and 2.54 minor. Incidence of biliary tract complications was 23% (leak
15%, stricture 8%), hepatic venous complications 8%, and portal complications
8%. There were no cases of hepatic artery thrombosis. Ten of the 12 patients
initially EBV seronegative seroconverted, and 3 of these patients developed readily
treatable post-transplant lymphoproliferative disease.
Conclusions: LDLT is an excellent alternative to cadaveric transplantation for
children with end-stage liver disease.

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SUCCESSFUL TREATMENT OF A HEPATIC YOLK SAC TUMOR BY LIVER TRANSPLANTATION

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Background/Purpose: Liver transplantation has been used to treat children with unresectable liver tumors. We present the first case of an unresectable hepatic yolk sac tumor treated successfully with liver transplantation.

Method: A previously healthy 2-year old boy was referred to our institution for possible transplantation of an unresectable hepatic mass initially thought to be a hepatoblastoma unresponsive to chemotherapy. Computed tomography demonstrated multiple tumor nodules in every hepatic segment. Metastatic work-up was negative and exploratory laparotomy revealed no extra-hepatic disease. Biopsy demonstrated a hepatic yolk sac tumor. The child's pre-operative liver function tests were normal and peak alpha-fetoprotein level was greater than 150,000 ng/ml. The child subsequently underwent a cadaveric orthotopic liver transplant with complete resection of his tumor.

Results: After an unremarkable hospital course, the patient was discharged home on post-operative day 19 on standard immunosuppressive therapy. He underwent post-operative chemotherapy with a cisplatin based regimen. He is currently six months post-transplantation with no evidence of recurrent disease. His most recent alpha-fetoprotein level was 3.3 ng/ml.

Conclusion: Due to the rarity of these lesions, there is no standard treatment for hepatic yolk sac tumors. This case represents the first successful treatment of a hepatic yolk sac tumor with transplantation.

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CUT IT OUT: MANAGING HEPATIC ABSCESSES IN PATIENTS WITH CHRONIC GRANULOMATOUS DISEASE

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Background: Patients with chronic granulomatous disease (CGD) develop hepatic abscesses because the liver is a site of constant bacterial challenge. We investigated the roles of drainage and hepatic resection in the management of liver abscesses in CGD patients.

Methods: Medical records of CGD patients with hepatic abscesses from 1990–2001 were reviewed.

Results: There were six patients. Mean age of initial abscess was 7.2 yrs (3wks-18.9yrs). All abscesses involved the right liver lobe (2 single, 4 multiple). All patients received appropriate antibiotics. Four patients were managed with 1-6 drainage procedures over 1-4 admissions before ultimately undergoing resection. The other 2 patients underwent primary resection without preliminary drainage. Of the six resections, 4 were non-anatomic and 2 were anatomic. There was one major postoperative complication (bleeding) requiring reoperation. There were no recurrences following resection (mean followup=4.3yrs). Mean total days in hospital for the treatment of liver abscess was 58.5 in the preliminary drainage group and 8.5 in the primary resection group. Three patients required ICU admission, one after a drainage procedure and two after resection.

Conclusions: For CGD patients with hepatic abscesses, drainage procedures are associated with recurrence and prolonged hospitalization. Primary hepatic resection, removing all involved tissue, is safe and definitive for the management of this problem.

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DPC-4 (SMAD-4) AND K-RAS GENE MUTATIONS IN BILIARY TRACT EPITHELIUM IN CHILDREN WITH ANOMALOUS PANCREATICOBILIARY DUCTAL UNION

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Background/Purpose: Recent studies have shown that anomalous pancreaticobiliary ductal union (APBDU) is a substantial risk factor for biliary tract cancer in younger age. DPC-4 (Smad-4) is a new tumor suppressor gene frequently inactivated in pancreatic and bile duct adenocarcinoma. To clarify carcinogenesis in APBDU, we investigated possible DPC-4 and K-ras mutations in 35 pediatric patients.

Methods: DNA was extracted from biliary tract epithelial cells which were surgically resected and histologically purified using microdissection. Polymerase chain reaction (PCR) primers were specifically designed for exons 8-11 of DPC-4 (18q21.1) and exons 1-2 of K-ras oncogene (12p12.1). DNA sequences were determined using the direct DyeDeoxy Terminator Cycle method.

Results: Of 35 children, 30 had wild-type DPC-4 and K-ras genes. K-ras mutations (codon 12; GGT to GAT or GTT) were detected in 5 patients, 4 of whom showed epithelial hyperplasia/metaplasia. In a 12-year-old girl with adenocarcinoma arising from a choledochal cyst, K-ras and DPC-4 (homozygous deletion) mutations were simultaneously identified.

Conclusions: These results suggest that carcinogenesis in the biliary tract epithelium in APBDU is accompanied by multistep genetic mutational events; K-ras gene mutation occurs early in epithelial hyperplasia/metaplasia, whereas inactivation of the DPC-4 gene accumulates late in the progression of biliary tract adenocarcinoma.

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SPLENIC ARTERY EMBOLIZATION IN THE MANAGEMENT OF INTRACRANIAL HEMORRHAGE DUE TO IMMUNE THROMBOCYTOPENIC PURPURA (ITP)

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Background/Purpose: Patients with intracranial hemorrhage due to ITP often present a management dilemma because of their low platelet counts and their need for craniotomy. Traditionally, the pediatric surgeon has been called upon to perform an emergent splenectomy in this situation. Two problems with this approach are delay of neurosurgical intervention and operative complications. We present a scenario in which splenic artery embolization was used to minimize the time before neurosurgical intervention could be safely undertaken.

Case Report: An 11 year old female with a 3 month history of ITP refractory to medical therapy presented with increasing lethargy, headache, nausea and vomiting. The platelet count was 3,000 and a head CT showed a large right-sided bleed with a midline shift. The splenic artery was embolized in approximately 30 minutes and the platelet count rose to 230,000. The patient’s hematoma was then evacuated and a ventriculostomy placed. This was followed by removal of the infarcted spleen. The patient has since made a nearly full recovery, with only minimal residual neurologic disability.

Conclusion: Our experience suggests that splenic artery embolization may be a fast, safe, and effective alternative to emergent splenectomy in ITP patients with intracranial bleeding or other acute hemorrhagic complications.

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THE NEED OF AN ACCURATE DIAGNOSIS IN CONGENITAL VASCULAR TUMORS

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Background/aims: Accurate prenatal identification of congenital tumors is difficult and at least 30% of them receive an incorrect diagnosis. Hemangiomas and lymphatic malformations are often discovered upon ultrasound examination during pregnancy. Even if in a high percentage of cases they are of vascular origin, other etiologies, including the rarest ones have to be taken into consideration. We present herein the pitfalls of prenatal diagnosis in cases with presumptive diagnosis hemangiomas or lymphatic malformations.

Material and Methods: We reviewed the charts and the pathology slides of patients with congenital vascular tumors prenatally diagnosed as hemangiomas or lymphatic malformations in the last 5 years.

Results: Fourteen newborns with these features were managed between 1997 and 2001. Their final diagnosis was congenital hemangioma in 4 cases, congenital fibrosarcoma in 2, teratoma in 2 and epignatus, lymphatic malformation, choroidal plexus ectopia, encephalocele, phacomatosis pigmento-vascularis and hemangiopericytoma in 1 case each. All patients, except that with encephalocele, underwent surgical excision with complete recovery and good cosmetic and functional results.

Conclusions: When facing prenatal diagnosis of any vascular lesion, any etiology has to be ruled out. An exhaustive diagnostic assessment and a prompt surgical treatment when indicated are the best management for these rare cases.

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ANALYSIS OF AN IMPROVED SURVIVAL RATE FOR CONGENITAL DIAPHRAGMATIC HERNIA

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Purpose: Congenital diaphragmatic hernia (CDH) is a condition associated with significant mortality. This study examines the survival rate of neonates with CDH treated by a surgically led multidisciplinary team in a single pediatric hospital. Actual survival is compared to predicted outcome based on severity of illness.

Methods: A consecutive series of neonates with CDH was evaluated beginning January 1, 2000. There were no excluded patients. A treatment protocol emphasizing minimal barotrauma and control of pulmonary hypertension was employed. Predicted survival was estimated using birth weight and APGAR at five minutes per the logistic regression equation published by the CDH Study Group. Actual survival rates were calculated and compared to predicted values using a one sample binomial test with significance deemed to be present at P < .05.

Results: 36 of 39 (93%) neonates with CDH survived while the predicted survival rate for this cohort was 68% (P < .001). 12 of 14 (86%) neonates requiring ECMO survived, despite a predicted survival of 52% for this subset (P< .01). 25% of survivors required supplemental oxygen at home.

Conclusions: Using a simple analysis, centers may now objectively compare their CDH survival rates to predicted outcomes adjusted for disease severity. This technique confirmed that a consecutive series of neonates with CDH, treated in one hospital, had a significantly higher than predicted survival rate. It may thus be possible to identify other centers with higher than expected survival rates and to define common therapeutic strategies associated with decreased mortality.

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THE ADRENAL GLANDS IN EXPERIMENTAL CONGENITAL DIAPHRAGMATIC HERNIA

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Background/aim: Adrenal cortical malfunction has been recently found in patients with severe congenital diaphragmatic hernia (CDH). The present study aims at assessing the development of adrenals in an experimental model of CDH.

Methods: Pregnant rats were exposed on day 9.5 of gestation to 100 mg of 2,4-dichlorophenyl-p-nitrophenyl ether (nitrofen) diluted in olive oil. The sham group was treated only with oil. Fetuses were recovered in 21 day and the presence or absence of CDH were sought. Adrenal glands from sham and CDH(+) animals were dissected, weighed and prepared for histological, biochemical and immunohistochemical studies (ki-67) in order to evaluate the total DNA, total protein and the proportion of proliferating cells. For comparison among groups we used non-parametric tests.

Results: The weight of the glands was smaller (although non-significantly) in CDH animals in comparison with controls (0.049±0.014 vs 0.052±0.012% of body weigh). Total DNA was significantly reduced (1.180±0.481 vs 1.909±0.893μg, p<0.05) with unchanged DNA/protein ratio. Proliferation index in both groups was 20.1±3.1% and 26.5±7.5% respectively. Proliferating cells were located mainly in the peripheric areas of the glands.

Conclusions: Nitrofen, besides of CDH, induces in fetal rats changes in the development of adrenal glans, impairing the cell proliferation specially in periferic areas, demonstrated by reduced DNA, similar cell sizes (constant DNA/protein relation) and reduced cell proliferation index. Any functional consequences of these alterations could contribute to the severity of the illness.

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EXPRESSION OF HEME OXYGENASE (HO) AND ENDOTHELIAL NITRIC OXIDE SYNTHASE (eNOS) IN THE LUNG OF NEWBORNS WITH CONGENITAL DIAPHRAGMATIC HERNIA (CDH) AND PERSISTENT PULMONARY HYPERTENSION (PPH)

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Background/Purpose: HO-1, an inducible isoform of HO is a regulator of vascular tone and cell proliferation through the production of endogenous carbon monoxide (CO). Endothelium derived nitric oxide (NO) occurs in the endothelial layers of blood vessels and mediates vasorelaxation. Both CO and NO have similar properties and are potent vasodilators. The aim of this study was to examine the expression of HO-1 and eNOS in the CDH lung.

Methods: RNA was extracted from archival formalin fixed paraffin embedded lung tissue from 11 patients with CDH complicated by PPH. Five age-matched newborns served as control. Reverse transcription polymerase chain reaction (RT-PCR) was performed using specific primers for human HO-1 and eNOS. Immunohistochemistry using HO-1 and eNOS antibodies was performed and examined using laser scanning microscope.

Results: HO-1 and eNOS mRNA expression was significantly decreased in CDH lung compared to controls (p< 0.05). HO-1 and eNOS immunoreactivity was markedly reduced in the endothelium and arterial wall in the CDH samples compared to normal lung.

Conclusion: Decreased expression of HO-1 and eNOS in the CDH lung suggests deficiency of endogenous NO and CO, which may contribute to altered vascular tone causing PPH.

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TRAPDOOR THORACOTOMY – ITS APPLICATION
IN PAEDIATRIC SURGERY

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**Background:** Access to the superior mediastinum via the cervical approach or
from a lateral thoracotomy is often restricted, rendering surgical procedures
difficult and potentially hazardous.

**Purpose:** To report our experience with the trapdoor antero-lateral thoracotomy
(TT) for surgical procedures in the superior mediastinum.

**Materials and methods:** A review of children undergoing TT with particular
reference to demography of the patients, indications for the exposure, surgical
procedures performed and outcome.

**Results:** Five children, ages 3-17 years underwent surgery via a TT. Three
procedures were carried out electively and two as an emergency. The indication
for surgery was haemorrhage following gastric transposition, central venous access,
oesophageal perforation and, in two, to gain additional length of the stomach
following prior gastric transposition for oesophageal replacement.

**Conclusions:** Excellent exposure was achieved in all cases and the surgical
procedures were performed without difficulty. All wounds healed well but one
girl who underwent emergency TT for haemorrhage, remains with a thoracic
deformity.

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IMAGE GUIDED PERCUTANEOUS APPROACH IS SUPERIOR TO THORACOSCOPIC PROCEDURE IN THE DIAGNOSIS OF PULMONARY NODULES IN CHILDREN

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Purpose: Image guided percutaneous techniques are increasingly used for diagnosis of pulmonary disease in children. The aim of this study was to determine the diagnostic accuracy and clinical outcomes of thoracoscopic versus percutaneous lung biopsy in children.

Methods: Sixty-three consecutive patients from January 1996 to December 2000 who had a thoracoscopic lung biopsy or a percutaneous image guided lung biopsy for well defined and ill defined lesions were analyzed.

Results: Twenty-eight patients had a thoracoscopic lung biopsy (TLB) and 35 patients had a percutaneous image guided lung biopsy (PLB). Age ranged from 6 months to 17 years (median 8 years). There was no significant difference between groups with regard to age, depth of lesion biopsied, or pre-biopsy diagnoses. Seventeen patients (60%) of TLB and 23 (65%) of PLB had well defined pulmonary nodules suspicious for malignancy at the time of biopsy. Adequate tissue for pathologic diagnosis was obtained in 28 (100%) of TLB versus 26 (80%) of PLB patients. However, 8, (28%) thoracoscopic cases needed to be converted to an open procedure. In 3 (8.5%) of PLB cases the percutaneous biopsy was insufficient and a thoracoscopic or open biopsy was required. The median hospital stay was 3 days for TLB and 4-6 hours for PLB. There were no complications in the PLB group. Five (18%) of TLB patients suffered a persistent air leak treated with continued chest tube drainage, and one patient died from other causes with a persistent air leak (p=0.023).

Conclusion: Percutaneous lung biopsy has a significantly shorter hospital stay and a lower complications rate, than thoracoscopic lung biopsy. We propose that the percutaneous technique should be considered as the initial approach for children with pulmonary nodules.
PERICARDIAL HEMANGIOMA PRESENTING AS A THORACIC MASS IN UTERO

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Pericardial hemangiomas are rare lesions. We present the case of an infant who was referred for the presence of a left thoracic mass, pleural effusion, and mediastinal shift on fetal ultrasound. The characteristics of the lesion suggested the presence of a pulmonary sequestration. The remainder of the pregnancy and delivery were uneventful, and the baby was asymptomatic at birth. A chest radiograph done at that time was normal. A CT chest performed at 2 weeks of age did not demonstrate any pulmonary pathology. Rather, an enhancing lesion of the left pericardium was identified. An echocardiogram demonstrated that this lesion was separate from the thymus. A cardiac MRI demonstrated enhancement of the mass on T2-weighted images, and possible involvement of the contralateral pericardium and the chest wall. The patient underwent thoracoscopic assessment of the mass. Multiple lesions were identified along the left pericardium and diaphragm. A frozen section biopsy revealed a hemangioma. The natural history for hemangiomas is gradual regression; however, they may increase acutely in size and cause symptoms prior to involution. Investigations should be performed to identify the involvement of other organs. This case illustrates the need to closely follow all patients with pre-natally diagnosed thoracic masses with CT imaging, even when they are asymptomatic and have a normal chest radiograph.

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ENDOBRONCHIAL TUMORS IN CHILDREN: INSTITUTIONAL EXPERIENCE AND LITERATURE REVIEW

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Background: Endobronchial tumors are rare in children and often misdiagnosed as benign conditions resulting in delayed definitive treatment. We reviewed our experience in order to highlight pertinent aspects of diagnosis and treatment.

Methods: Retrospective chart review of children diagnosed with endobronchial tumors between 1980 and 2002. Results: Nine patients had endobronchial tumors, (5 girls, 4 boys) with average age of 13 years (range: 8.5 to 15 years). There were 5 carcinoid tumors, 3 mucoepidermoid carcinomas and one pseudotumor. Preoperative bronchoscopic biopsy confirmed the diagnosis in 6 patients, was inconclusive in one and not done in two. All except one (pseudotumor) underwent surgical resection. Laser ablation was performed in two cases with complete cure in one. All had an uneventful postoperative course except one who developed ipsilateral pneumonia. Long term follow-up was obtained with clinical exam, pulmonary X-ray, abdominal ultrasound, chest CT-scan and serum 5 HIAA in those with carcinoid tumor. Bronchoscopy was performed twice yearly for the first 2 years, then yearly. No evidence of local or distant recurrence was reported.

Conclusion: Endobronchial lesions should be considered in children with persistent pneumonia despite adequate treatment or with undiagnosed respiratory symptoms. Prognosis is excellent with surgical resection. Specific follow-up protocol is recommended.

Index words: endobronchial tumors, pediatric tumors, carcinoid, mucoepidermoid.

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ANALYSIS OF PEDIATRIC SURGICAL EMERGENCIES  
FOLLOWING AN EARTHQUAKE: 
GUJARAT, INDIA 2001 

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Background/Purpose: Approximately 30,000 people died and 250,000 were injured in January 2001, when a 7.9 Richter earthquake struck Gujarat, India.  
Methods: We report 62 pediatric surgeries performed at the Nor-Finn Hospital (a tent-based mobile facility established near the epicenter) during the first 4 weeks after the earthquake including age, date of presentation, injury, and surgery performed.  
Results: Twenty-two patients were under 6 years old; 40 were aged 6-17. Twenty-six presented with orthopedic injuries, 26 with wounds/lacerations, and 6 with burns. Four had miscellaneous injuries. Common operations included casting, external fixation, wound closure/debridement, and skin grafting. Thirteen of the 17 injuries in week #1 were orthopedic. In 21 patients during week #2 there were 8 orthopedic injuries and 10 lacerations/wounds. In week #3 there were 15 injuries; in week #4 there were 9. Of 6 burn victims, 5 were treated in weeks #3 and #4.  
Conclusions: Of earthquake survivors requiring hospitalization, 25% were children—of whom more than 20% needed surgery. Orthopedic injuries predominated early on, infected wounds and lacerations occurred at a steady rate; skin grafting for burn injury was performed toward the end of the month. This information may be useful in planning pediatric disaster relief services following future earthquakes. 

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TRAUMA STAT AND TRAUMA MINOR: ARE WE MAKING THE CALL APPROPRIATELY?

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Background/Purpose: Pediatric trauma centers utilize protocols to mobilize personnel to treat significantly injured patients. We reviewed our experience at a level-one pediatric trauma center, where a graded trauma activation protocol is utilized [trauma stat (TS—full trauma team, 16 members), trauma minor(TM—partial trauma team, 7 members)].

Methods: We analyzed data in our trauma registry of the 470 patients (1994-1999) with ISS≥9 in whom trauma activations were called. Trauma activations were based on standard protocols (mechanism of injury, vital signs).

Results

<table>
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<tr>
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<th>TS(n=220)</th>
<th>TM(n=250)</th>
<th>p-value</th>
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<tbody>
<tr>
<td>Injury severity score(ISS)</td>
<td></td>
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<tr>
<td>Survivors</td>
<td>20.5±13.0</td>
<td>14.1±5.9</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Deaths</td>
<td>16.6±7.9</td>
<td>14.1±5.9</td>
<td>&lt;.005</td>
</tr>
<tr>
<td></td>
<td>36.4±16.9</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Hemodynamic instability</td>
<td>16%</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>GCS</td>
<td>10.2±5.1</td>
<td>13.8±2.5</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Emergency Unit disposition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>7%</td>
<td>0%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Admission</td>
<td>91%(n=200)</td>
<td>97%(n=243)</td>
<td>&lt;NS</td>
</tr>
<tr>
<td>OR</td>
<td>20%</td>
<td>16%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>PICU</td>
<td>47%</td>
<td>34%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Surgical Ward</td>
<td>24%</td>
<td>47%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Transfer</td>
<td>2%</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>Discharge from EU</td>
<td>&lt;1%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Deaths(Admitted patients)</td>
<td>15%</td>
<td>0%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Deaths(Total)</td>
<td>20%</td>
<td>0%</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>LOS(Survivors), days</td>
<td>13.1±17.6</td>
<td>6.5±8.7</td>
<td>&lt;.005</td>
</tr>
</tbody>
</table>

Conclusion: Trauma activations result in heavy resource utilization and must be made appropriately. TS and TM activations were associated with significant differences in injury severity, medical resource utilization and outcome. This study validates the current protocol; it is neither too conservative (no deaths in TM) nor too liberal (20% mortality in the TS).

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SHOULD HELICAL CT SCANNING OF THE THORACIC CAVITY REPLACE THE CONVENTIONAL CHEST X-RAY AS A PRIMARY ASSESSMENT TOOL IN PEDIATRIC TRAUMA? AN EFFICACY AND COST ANALYSIS.

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Background/ Purpose. Studies in the trauma literature suggest that thoracic CT (TCT) scanning should replace conventional radiographs as an initial imaging modality. Limited data exists on the clinical utility and cost of TCT scans in pediatric trauma. Our current practice is to obtain TCT scans in those children at risk for thoracic injuries. The purpose of this study is to examine what additional information TCT provides, how frequently it results in a change in clinical management and a cost/benefit analysis.

Methods. Children 18 years old and younger that both had a CXR and TCT scan in their initial work up were included. Indications for TCT scan were (1) any sign of thoracic injury on CXR. (2) Pathologic findings on physical exam of the chest and (3) high impact force to chest wall. A child may have had one or more indication for a TCT scan.

Results. Between 1996 and 2000, 48 of 1638 trauma patients met study criteria. Indications for TCT included thoracic injury on CXR (27), findings on physical exam (8) and high impact force (33). In 18 of the 48, injuries were detected TCT imaging but not on CXR. These included contusions (12), hemothorax (6) pneumothorax (5), widened mediastinum (4) rib fractures (2), diaphragmatic rupture (1) and aortic injury (1). In 9 patients TCT imaging resulted in a change in clinical management. These included insertion of a chest tube (5) aortography (2) and operation (2). Age, sex, injury severity score, mechanism, and indication for TCT could not predict differences between TCT and CXR (p>0.05). In our institution the cost of a TCT is $200 and the patient charge is $906 ($94/CXR). Based on our study data 200 TCT would need to be done for each clinically significant change, increasing patient ($180,000) and hospital ($39,600) costs.

Conclusions: Helical TCT is highly sensitive imaging modality the thoracic cavity, however routine CXR still provides clinically valuable information for the initial trauma evaluation at minimal cost. TCT should be reserved for selected cases not as a primary imaging tool. (This study was approved by the University's Institutional Review Board)

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SNOWMOBILE INJURIES AND FATALITIES IN CHILDREN

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Purpose: This study was undertaken to evaluate childhood snowmobile injuries and fatalities in order to identify possible prevention strategies.

Methods: Records were reviewed of children injured in snowmobile collisions admitted to a trauma center over a ten-year period. Regional insurance data were reviewed on childhood snowmobile fatalities during the same period.

Results: 32 children (7-17 years old, 22 males) were admitted to our trauma center following snowmobile collisions. Helmets were worn by 17 of 23 patients (74%) with available data. The most common mechanisms were collision with a fixed object (41%) and collision with a motor vehicle (38%). Speeds as high as 110 kilometers/hour were reported. The average Injury Severity Score was 15 (range 4-38). The head was the most commonly injured area (n=21). One child died from a massive head injury. From six years of insurance data, 10 children (10-17 years old) were killed in snowmobile collisions. The majority of these children were drivers, and most collisions occurred at night.

Conclusions: Every winter, snowmobile collisions cause serious morbidity and mortality. Strategies to reduce injuries and fatalities in children include universal helmet usage, reduced speeds, limited nighttime driving, and improved safety training and parental supervision for young drivers.

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LIFE ON THE FARM - CHILDREN AT RISK

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Background: 1.3 million children live, play, and work on farms, surrounded by animals and machinery. This symbiotic relationship between work and home exposes children to unique risks.

Methods: Children presenting with a farm-related injury (November 1994 to August 2001, 82 months) were included. Trauma registry parameters included: ISS, GCS, time to presentation, season and day of injury, ER, ICU, and total LOS, type and mechanism of injury, and operations.

Results: 1832 pediatric trauma patients were evaluated. 94 children were identified with farm-related injuries. Mean age - 10.75 yrs. Mean ISS - 7.38. Three children died. Four children wore protective equipment. 44% of injuries occurred during summer, 31% during spring, and 55% on weekends. Average time to initial presentation - 39 minutes. 177 minutes elapsed before transfer to regional trauma center. 72 children required admission. LOS was 0-28 days, mean - 2.76 days. 26 children (28%) required operations. Injuries included: dislocations/fractures (52%), lacerations/avulsions (38%), concussions (31%), contusions (30%), burns (14%).

Mechanism included: animals (41%), falls (34%), motor vehicles (28%), ATVs (20%), firearms (4%).

Conclusions: Farm injuries occur most commonly during weekends, summer and spring months, resulting in significant morbidity. Most injuries (77%) required hospitalization. Unless the child is unstable, initial transfer to a regional pediatric trauma center should result in the most cost-effective, prompt, and highest quality of care.

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ENDOTRACHEAL INTUBATIONS IN RURAL PEDIATRIC TRAUMA PATIENTS

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Background/Purpose: Evidence from urban trauma centers questions efficacy of pediatric field endotracheal intubations (ETI's). It is recognized that in the rural environment discover, transport delays combined with a paucity of pediatric expertise contribute to higher pediatric trauma mortality rates compared to urban environments. The purpose of this study was to determine the effectiveness and associated problems of ETI in the rural pediatric trauma.

Materials and Methods: ETI attempts (field, referring hospital, trauma center [TC]) in trauma patients under 19 years old were included. Prehospital and TC charts including demographics, injury mechanism, indication, location, person performing, number of attempts, Glasgow Coma Scale (GCS) complications from ETI, and outcomes were assessed. Results: Between 1991 and 2000, 105 of 2907 patients met study criteria. Paramedics, trauma flight nurses (field ETI's), emergency physicians, surgeons and anesthesiologists performed the ETI. 155 ETI's (1-6/patient) were attempted in 105 children. Fifty-seven percent of the ETI's were attempted in the field, 22% in transferring hospital and 21% at the TC. Successful intubation upon first attempt was 67% (field), 69% (referring hospital) and 95% (TC). Subsequent ETI attempts had failure rates of 50% (field), 0% (referring hospital, TC). Indication for ETI included; fear of losing airway control (37%), closed head injury (36.1%) respiratory rate <10 or >40 (11.2%), cardiopulmonary arrest (6.5%) respiratory arrest (4.6%) and airway obstruction 4.6%. Only 9.3% of children could not be oxygenated or ventilated by bag valve mask (BVM) prior to ETI. Twenty-three percent had complications directly related to ETI (e.g. aspiration). The relative risk of an airway complication was 2.5x higher with more than one ETI attempt (p<0.05). Four percent of the airway complications occurred in TC, 29% (transferring hospital) and 66% (field, p<0.05) respectively. Airway complications and multiple ETI's were associated with transport delay, lower GCS, longer hospital stay and lower discharge GCS (p<0.001), but independent of injury severity score, sex, age, and survival (p>0.05).

Conclusion: Multiple ETI attempts are associated with significant complications and may offer limited advantage over BVM and possibly affect outcome. Indications for field intubations may require review especially in rural pediatric trauma.

(This study was approved by the University’s Institutional Review Board)

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GETTING DOWN TO THE BOTTOM OF PERINEAL INJURIES

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Background/Purpose: Significant perineal injuries are uncommon in children. We investigated the etiology, treatment and outcome of such injuries at a children’s hospital.

Methods: Records of the 42 patients admitted for perineal injuries from 1990 through 2001 were reviewed.

Results: Girls (n=29, 5.5 ±3.0yrs) were more likely to be injured and were younger than boys (n=13, 9.6 ±4.9yrs). Accidents caused 31 (74%) injuries, 9 (21%) were due to sexual abuse, and 2 were of indeterminate cause. All abuse victims were girls <8yrs, representing 29% of patients <8yrs of age. Isolated injuries occurred in 23 children (5 rectal, 11 genitalia, 7 perineal), while 19 had multiple injuries. 33 (79%) patients required operative treatment. 13 had clear indications for surgery. Despite the availability of procedural sedation, 20 patients underwent evaluation under anesthesia (EUA) in the OR, of whom 19 required operative intervention. Treatment included laceration repair (n=17), colostomy formation (n=7) and other procedures (visceral repair, hemorrhage control) (n=8). 5 patients had minor complications and 9 required multiple operations. No patient suffered rectal or urinary incontinence.

Conclusions: We identified that: 1) abuse accounts for 21% of perineal trauma; 2) EUA was necessary for diagnosis in half of the patients; 3) 97% of patients undergoing a general anesthetic required operative treatment; 4) repair of injuries resulted in low morbidity, no mortality, and no incontinence.

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ARE LOCALIZED INTESTINAL PERFORATIONS DISTINCT FROM TYPICAL NECROTIZING ENTEROCOLITIS IN NEONATES?

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Objective: We tested whether localized intestinal perforations in premature neonates are not only histologic but clinical entities that are distinct from necrotizing enterocolitis.

Methods: We reviewed forty neonates diagnosed with gastrointestinal perforations between January 1990 and May 1998, all with histologic specimens.

Results: Twenty-one neonates had necrotizing enterocolitis (NEC) and nineteen had localized perforation (LP) based on histologic criteria. More neonates with LP were exposed to pre-natal indomethacin (37% vs. 5%, p < 0.05), received intravenous dexamethasone (42% vs. 10%, p < 0.05) and had umbilical artery catheters (63% vs. 14%, p < 0.05). No significant differences existed in enteral feeding (16% LP vs. 38% NEC) or overall mortality (37% LP vs. 38% NEC). We found no statistical differences in clinical presentation. Neonates with NEC had a lower white blood cell (WBC) count (14.3 ± 11.5 vs. 27.1 ± 23.1, p < 0.05) and more neonates with NEC had pneumatosis intestinalis (47% vs. 11%, p < 0.05).

Conclusions: NEC perforation can be clinically distinguished from histologically confirmed LP only by a lower WBC count and an association with pneumatosis on plain films. Risk factors are similar in general but we noted that LP was associated with intravenous dexamethasone, umbilical artery catheters and pre-natal indomethacin. Mortality and outcome are equivalent.

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MODERATE HYPOTHERMIA REDUCES PLASMA CYTOKINES AND ENDOTOXIN AFTER INTESTINAL ISCHAEMIA-REPERFUSION

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Background/Purpose: Intestinal ischaemia-reperfusion injury (IIRI) is associated with remote organ damage. Moderate hypothermia during IIRI protects the liver. We investigated the effects of IIRI and moderate hypothermia on cytokines and endotoxin.

Methods: Rats were studied. Groups 1-4 had intestinal ischaemia via superior mesenteric artery occlusion for 90min, then four periods of intestinal reperfusion (2, 10, 30, 60min) at normothermia (NT: 37±0.5°C). Groups 5-8 had identical treatment at moderate hypothermia (HT: 32±0.5°C). Groups 9-11 had sham operation (92, 120 or 150min) at normothermia. Blood samples were taken from the superior mesenteric vein (SMV) and aorta. N = 6 - 12 per group.

Results: mean ± SEM

Endotoxin levels were higher in normothermic IIRI than moderately hypothermic IIRI and sham at 60min reperfusion (19.73±0.90 vs. 13.86±2.56 and 9.08±0.38; p<0.05) in the SMV. Aortic endotoxin was higher in normothermic IIRI than sham at 60min reperfusion (28.65±7.52 vs. 9.56±0.24; p<0.05).

Conclusion: The protective mechanism of moderate hypothermia may be mediated partly by a reduction in inflammatory mediators and/or suppression of endotoxin release from damaged gut.

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NEONATAL ENDOXOXAEMIA AFFECTS HEART
BUT NOT KIDNEY BIOENERGETICS

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Background/Purpose: The aim was to determine the effects of early and late endotoxaemia on neonatal cardiac and renal mitochondrial energetics.

Methods: Suckling rats received intraperitoneal 300μg/kg lipopolysaccharide; controls received saline. Heart and kidney mitochondria were isolated after 2h (early) or 6h (late sepsis). State 3 (maximum mitochondrial flux) and 4 O₂-consumption and complex I activity were measured. Results, expressed as mean±SEM normalised to citrate synthase (CS), were compared using paired t-tests.

Results: Mortality was zero within 2h, 2.7% between 2-6h of endotoxaemia and 100% 6-8h; we consider that 2 and 6h represent early and late endotoxaemia respectively. Endotoxic heart mitochondria had unaltered O₂-consumption at 2h but significantly decreased state 3 after 6h (0.099±0.011 μmol O₂/min/U CS, n=15) versus control (0.126±0.013, n=15, p=0.003), resulting in significantly decreased respiratory control ratio (control 3.6±0.3 n=15 vs. 6h endotoxaemia 2.4±1.4, n=15, p=0.0005). Complex I activity, which could affect O₂-consumption, was significantly decreased at 6h (9.8±0.6 mU/U CS, n=15) versus controls (11.3±0.8 n=15; p=0.04), but not at 2h. There were no differences in these measurements at either 2h or 6h in kidney mitochondria.

Conclusions: The respiratory chain is affected late in endotoxaemia. Neither early nor late endotoxaemia affects oxidative function of kidney mitochondria.

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CORRELATION BETWEEN RADIOGRAPHIC TRANSITION ZONE AND LEVEL OF AGANGLIONOSIS IN HIRSCHSPRUNG DISEASE: IMPLICATIONS FOR SURGICAL APPROACH

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Purpose: The anticipated level of aganglionosis can influence the surgical approach to Hirschsprung disease. Our aim was to determine the accuracy of the barium enema in predicting this level.

Methods: Over a six-year period (1995-2000), 88 patients with Hirschsprung disease underwent repair. Pre-operative barium enema findings were available for 75 of these patients and were compared with operative and pathology reports. Data were analyzed by chi-square.

Results: The barium enema demonstrated a transition zone suggestive of Hirschsprung disease in 67 of 75 patients (89%). In 59/67 (88%), the pathologic and radiographic transition zones were concordant. Seven of the 8 patients with discordant studies had total colonic (5) or long-segment (2) disease. Barium enema correctly predicted the level of aganglionosis in 55/62 (89%) patients with rectosigmoid disease but only 4/13 (31%) of those with long-segment or total colonic disease (p<0.01). Of the patients with a radiographic transition zone in the rectosigmoid, 54/60 (90%) had a matching level of aganglionosis.

Conclusions: In rectosigmoid Hirschsprung disease, the location of the radiographic transition zone correlates well with the level of aganglionosis. However, the small incidence of discordance between anticipated level of aganglionosis and operative findings should be recognized, particularly when planning a one-stage transanal pullthrough.

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DISCREPANCY BETWEEN MACROSCOPIC AND MICROSCOPIC TRANSITIONAL ZONES IN HIRSCHSPRUNG’S DISEASE WITH REFERENCE TO THE TYPE OF RET/GDNF/SOX10 GENE MUTATION

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Background/Purpose: Recent studies have shown that Hirschsprung’s disease is caused by diverse genomic abnormalities affecting RET, EDN/EDNRB, and SOX10-related signal transduction during embryogenesis. To discover whether these pathogenic variations influence the pathophysiology of intestinal aganglionosis, we studied the possible correlation between the morphology of the ganglionic/aganglionic transitional zone and the type of gene mutation.

Methods: In 120 patients with Hirschsprung’s disease, the location and morphology of gut caliber change were recorded, based on their medical charts and the enteric nervous system was histologically investigated using surgically resected bowel specimens. DNA sequences of all the RET/GDNF/NTN and SOX10 coding regions were determined using the direct DyeDeoxy Terminator Cycle method.

Results: In RET gene mutation carriers, the gut caliber was almost identical to histologic transition in cases with short segment aganglionosis, while these were markedly dissociated in cases exhibiting extensive involvement of intestinal aganglionosis. In contrast, SOX10 gene mutation carriers had a very long histologic transition and exhibited no caliber change.

Conclusions: These results suggest that the type of genetic mutation responsible for Hirschsprung’s disease influences the postnatal distribution and function of enteric ganglia, which may reflect the disparate pathogenesis of enteric nervous system development induced by an impaired RET and SOX10-related signaling pathway.

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MANAGEMENT OF SPONTANEOUS COLONIC PERFORATION IN
EHLERS-DANLOWS SYNDROME TYPE IV

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Background/Purpose: Ehlers-Danlos Syndrome Type IV (EDS-IV) is a rare autosomal dominant disease of collagen type III, often manifested by spontaneous bowel or arterial rupture. A consensus on the surgical management of spontaneous colonic perforation in EDS-IV has yet to be determined.

Methods: We report our management of spontaneous bowel rupture in EDS-IV.

Results: A 14-year-old female with a family history of fatal colonic rupture, presented with a 2-day history of abdominal pain and signs of peritonitis. At laparotomy, a full thickness perforation of the sigmoid colon was found, which was exteriorized as a loop colostomy. Molecular studies of the patient’s cultured fibroblasts revealed a point mutation in the COL3A1 gene, confirming EDS-IV. Nearly 4 years later, a total abdominal colectomy and ileoproctostomy were performed to restore intestinal continuity. 4.5 years following anastomosis, the patient has had no further complications.

Conclusions: Given the high rate of reperforation in EDS-IV when the colon is left in situ, and the low incidence of reported small bowel and rectal perforations, subtotal colectomy is a reasonable treatment to avoid a permanent stoma. Avoidance of a permanent end-ileostomy was possible in this young patient, without anastomotic leakage, nor reperforation to date. Life-long close follow-up should be continued in these patients, as the natural history of ileoproctostomy in EDS-IV is not known.

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ALTERATION IN SMOOTH MUSCLE CONTRACTILE AND CYTOSKELETON PROTEINS AND INTERSTITIAL CELLS OF CAJAL (ICC) IN MEGACYSTIS MICROCOLON INTESTINAL HYPOPERISTALSIS SYNDROME (MMIHS)

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Background/Purpose: MMIHS is characterised by decreased or absent peristalsis. Gastrointestinal motility depends on the enteric nervous system, smooth muscle cells (SMCs) and the pacemaker cells, ICCs. SMCs are composed of the contractile and cytoskeleton proteins. The aim of study was to examine the expression of contractile and cytoskeleton proteins in SMCs and distribution of ICCs in MMIHS bowel.

Methods: Full thickness bowel specimens were obtained from 4 infants with MMIHS and 4 controls. Specimens were processed as whole-mount preparation, frozen and paraffin sections. Combined staining of NADPH-d histochemistry/c-kit immunochemistry, single and double immunohistochemistry using α-smooth muscle actin (n-SMA), calponin (CALP), caldesmon (CALD), desmin (DES), protein gene product 9.5 (PGP 9.5) and c-kit antibodies were performed and examined using light and confocal scanning microscopy.

Results: n-SMA, CALP, CALD and DES immunoreactivity was absent or markedly reduced in MMIHS compared to controls. Combined NADPH/c-kit staining showed dense network of ICCs around myenteric plexus in MMIHS bowel. In contrast the intramuscular ICCs were either absent or reduced in MMIHS.

Conclusion: Absent or marked reduction of contractile and cytoskeleton proteins in SMCs combined with reduced expression of intramuscular ICCs in the gut may be responsible for the motility dysfunction in MMIHS

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INCREASED CT SCAN UTILIZATION DOES NOT IMPROVE THE DIAGNOSTIC ACCURACY OF APPENDICITIS IN CHILDREN

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Background/Purpose: Appendicitis continues to present a diagnostic challenge. The purpose of this study was to critically evaluate the use of radiographic studies for the evaluation of acute appendicitis in children and determine if diagnostic accuracy has improved with increased use of CT.

Methods: Children undergoing appendectomy for acute appendicitis were reviewed from 1997 to 2001. Diagnostic work up was recorded, as were the final pathology results.

Results: 616 appendectomies were performed over the five-year study period. Mean age was 10.4 ± 4.1 years and 60% were male. Overall, 202 children (33%) underwent CT scanning, 104 (17%) had ultrasound (US) performed and 310 (50%) had an appendectomy without a preoperative radiographic study. A normal appendix was removed in 7% (14/202) of CT patients, 12% (12/104) of US patients, and 8% (26/310) of patients without a study. The frequency of CT increased from 1.3% of all children in 1997 to 58% in 2001 while utilization of US decreased from 40% to 7%. Over the same time period, the overall negative appendectomy rate did not significantly change (8% to 7%).

Conclusions: Although CT scanning is now utilized in the majority of children with appendicitis, the negative appendectomy rate has remained unchanged.

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LAPAROSCOPIC RESECTION OF ILEOCOLIC CROHN’S
DISEASE IN CHILDREN

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Background: The benefits of laparoscopic resection for Crohn’s disease has been established in the adult literature. We report our experience in the pediatric age group.

Methods: A prospective series of all pediatric Crohn’s patients treated laparoscopically in one surgical practice was studied for demographic data, operative details and outcome.

Results: Fifteen patients with diagnosis of Crohn’s disease, ages 9 to 17 years, underwent laparoscopic ileocolic resection between February of 1998 and 2002. Patients’ weights ranged from 42 to 80 kg. All patients had fixed strictures involving the terminal ileum and ileocecal valve, and had failed medical therapy. A four port approach (one 12-mm and three 5-mm) was utilized in all cases. Resection and anastomosis was performed intracorporeally and the specimen was retrieved through the 12-mm port site. The average operative time was 110 minutes (range 90 to 180 minutes). Oral feeds were started after 24 hrs of NG suction. Hospital stay averaged 4 days (range 3 to 8 days). One patient developed a fever on post-op day 3. Contrast study showed a small anastomotic leak with no associated collection and the patient responded to conservative management. One other patient whose pathologic diagnosis questioned the initial Crohn’s diagnosis presented with an anastomotic stricture and was re-resected laparoscopically with good outcome. No other complications were noted and all patients were symptom free at follow-up.

Conclusion: Laparoscopic resection of Crohn’s disease in children is safe and effective.

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A SIMPLE TECHNIQUE OF LAPAROSCOPIC FULL-THICKNESS ANTERIOR ABDOMINAL WALL REPAIR OF RETROSTERNAL (MORGAGNI) HERNIAS

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Background: Previous reports of laparoscopic repair of Morgagni hernias in children have involved relatively complex laparoscopic techniques. This paper describes a simpler method of repair that we have applied to two children.

Technique: Two children with retrosternal (Morgagni) hernias underwent primary laparoscopic repair by placement of interrupted synthetic non-absorbable sutures through the full thickness of the anterior abdominal wall, incorporating the posterior rim of the defect and returning back out through the anterior abdominal wall, with the sutures tied in the subcutaneous tissue.

Results: The children, aged 11 and 14 months, underwent laparoscopic repair of their Morgagni hernias and had an uneventful post operative recovery, apart from a port site hernia in one.

Conclusion: This technique for primary laparoscopic repair of Morgagni hernia is easy to perform, well tolerated by the patient and gives excellent cosmetic results. Laparoscopic closure of the defect by suturing the posterior rim of the hernia to the full thickness of the anterior abdominal wall would appear to provide a safe and effective means of repairing this type of hernia.
REDUCTION IN VISCERAL SLIDE IS A GOOD SIGN OF UNDERLYING POST-OPERATIVE VISCERO-PARIETAL ADHESIONS IN CHILDREN


Department of Paediatric Surgery and Paediatric Radiology, Women’s and Children’s Hospital, Adelaide, South Australia and Great Ormond Street Hospital for Children, London, UK.

Background / Purpose: Viscera normally slide freely under the anterior abdominal wall. The aim of the study was to establish whether reduced visceral slide detected by ultrasound could predict the presence of viscero-parietal adhesions in children.

Methods: Patients undergoing laparoscopy after a previous laparotomy were examined by pre-operative real time ultrasound. Abdominal wall adhesions were mapped by determining areas of reduced visceral slide. The findings were correlated during laparoscopy.

Results: Fifteen anterior abdominal wall scans were performed on 14 children. Reduced visceral slide was demonstrated in 9 patients. Significant viscero-parietal adhesions were detected in all 9 patients at laparoscopy. Extensive adhesions were found in 4/9 where mapping demonstrated large areas of reduced slide. In 5 children with localised reduction in slide a single loop of bowel was stuck to the abdominal wall in 4 while the anterior edge of the liver was adherent in one. Of the 6 patients with normal visceral slide, 5 had no abdominal wall adhesions. The remaining child had a flimsy omental adhesion.

Conclusions: Real time abdominal wall ultrasound mapping is a good method of demonstrating post-operative viscero-parietal adhesions. This may be useful in selecting site for trocar insertion during subsequent laparoscopic procedures.

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WHEN CAN I BE PROFICIENT IN LAPAROSCOPIC SURGERY?
A SYSTEMATIC REVIEW OF THE EVIDENCE.

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Purpose: To determine the threshold of proficiency in laparoscopic surgery.
Methods: Systematic review of the evidence using a defined search strategy (PubMed/Medline/OVID/Cochrane Database). Studies without statistical evaluation of learning curve and opinion articles were excluded.
Results: We reviewed 3,461 articles of which 23 (15,027 patients) fulfilled the review criteria (2 randomised; 3 in children). Proficiency was defined as plateauing of operative time (OT), complications and conversion rate (CR).
Fundoplication (6 studies; 1,037 patients): proficiency was reached after 12-60 (mean 38) procedures, reducing OT from 194±73 to 128±26 min, CR from 18±10% to 4±4% and complications from 15±4% to 4±4%.
Cholecystectomy (7 studies; 12,529 patients): proficiency after 10-200 (mean 57) procedures; OT from 107±44 to 65±20 min; CR 12±3% to 7±1%; complications 9±6% to 5±5%.
Colecctomy (7 studies; 1,264 patients): proficiency after 11-70 (mean 41) procedures; OT 204±32 to 153±9 min; hospital stay 7.3±1 to 5±1 days; CR 9±7% to 6±5%; complications 9±7% to 6±5%.
Learning curve was also reviewed in herniorrhaphy and splenectomy; proficiency demonstrated after 50 and 20 procedures respectively.
Conclusions: Number of procedures required for proficiency in laparoscopic surgery is greatly variable and dependent on type of procedure. These findings are important for training, ethical and medico-legal issues.

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STRICTUROPLASTY: AN ALTERNATIVE APPROACH IN LONG SEGMENT BOWEL STENOSES IN PEDIATRIC CROHN’S DISEASE

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Background: Intestinal resection is the most frequent surgical procedure for bowel stenoses in Crohn’s disease (CD). Recurrence of strictures, particularly with ileo-colic disease, often requires resection of long bowel segments, potentially resulting in short bowel syndrome. Different techniques of stricturoplasty such as those described by Mikulicz, Finney and Michelassi are used in adults. However, these procedures are uncommon in paediatric surgery.

Purpose: We report our experience with a modified Michelassi technique for the surgical treatment of long intestinal strictures due to CD.

Methods: Four adolescents (1 male, 20 years old; 3 females: 17, 15 and 14 years old) with severe ileo-colic stenoses (20, 25, 35 and 30 cm of length) and intestinal obstruction, not responsive to medical and nutritional therapy, were treated with the modified Michelassi side to side stricturoplasty technique.

Results: No postoperative complications occurred. Patients are free of symptoms, with good nutritional status, and off corticotherapy, after a mean follow-up of 20.5 months (range 6-28 months).

Conclusions: The modified Michelassi stricturoplasty, compared with intestinal resection, is a good surgical option for sparing bowel length in CD patients with extensive intestinal structures.

Sponsorship: APS member: Dr. Maria Di Lorenzo

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DEVELOPMENT COMPLICATIONS OF CENTRAL VENOUS CATHETERS PLACED SURGICALLY OR RADIOLOGICALLY IN PEDIATRIC PATIENTS

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Purpose: to compare the incidence of delayed complications of surgically placed pediatric central venous catheters (CVCs) versus radiologically inserted CVCs.

Methods: All pediatric chemotherapy CVCs in one institution over 10 years were retrospectively analyzed. Outcomes included: infectious complications (sepsisemia, site/tunnel infection, colonization), mechanical complications (breakage, occlusion, dislodgement), and premature removal.

Results: 64 lines (38 catheters and 26 ports) have been analyzed to date in 40 patients, out of 130 final number of CVCs expected. Mean age was 8.4 years for ports and 7.0 years for catheters. Preliminary complication data follow. (RPC = radiologically placed CVCs; SPC = surgically placed CVCs)

<table>
<thead>
<tr>
<th></th>
<th>Subcutaneous Ports</th>
<th>Tunnneled Catheters</th>
<th>All</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Infec tious</td>
<td>Mechan anical</td>
<td>Infec tious</td>
</tr>
<tr>
<td>RPC (%)</td>
<td>3 (30.0)</td>
<td>2 (20.0)</td>
<td>9 (64.3)</td>
</tr>
<tr>
<td>SPC (%)</td>
<td>6 (37.5)</td>
<td>2 (12.5)</td>
<td>15 (62.5)</td>
</tr>
</tbody>
</table>

Mean infectious complications per 1000 catheter days was 17.1 for RPCs and 9.8 for SPCs. No trends so far have reached statistical significance.

Conclusion: Pediatric CVCs, especially tunneled catheters, have frequent delayed complications. Radiological placement of CVCs appears to be equally safe to surgical placement, without requiring general anesthesia. Availability of a pediatric interventional radiology service can be a significant asset in the care of children with cancer.

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SPONTANEOUS INVOLUTION OF INTRA-ABDOMINAL PULMONARY SEQUESTRATION

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Purpose: To describe the natural history of intra-abdominal pulmonary sequestration detected pre-natally on fetal US.

Methods: Two patients with intra-abdominal pulmonary sequestrations detected pre-natally on fetal US are reported.

Results: Fetal US scans (20 and 22 weeks) revealed left suprarenal echogenic masses (differential diagnoses adrenal tumour and lung sequestration). Neonates were born at 39 and 38 weeks gestation (weight 2600 and 2700 g). Post-natal US confirmed the presence of both masses. In both patients urinary catecholamines, serum alpha-feto protein and beta-HCG were normal. Lung sequestration was diagnosed by percutaneous needle biopsy (patient 1) and MRI scan (patient 2). Both masses did not changed in size during the first 6 months of life. Thereafter in both patients the lesions started to involute. In one patient, the lesion was not evident on CT scan at 18 months and in the other it had regressed to 0.5 x 0.8 x 0.5 cm in size on US scan done at 13 months. Both patients remained asymptomatic throughout their postnatal history.

Conclusions: We report the spontaneous involution after 6 months of age of intra-abdominal pulmonary sequestration. After confirming the diagnosis we recommend serial US scanning to avoid unnecessary surgery.

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SURGICAL IMPLICATIONS OF URACHAL REMNANTS:
PRESENTATION AND MANAGEMENT

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Background/Purpose: The abdominal manifestations of the persistent urachus
often prompt referral to the pediatric general surgeon. The purpose of this study
was to critically evaluate the management of this anomaly.

Methods: This series describes 26 patients with urachal remnants treated between
1984-2001. Data was gathered by retrospective chart review, including clinical
and radiographic details of presentation, management and outcomes.

Results: Twenty-six patients presented at an average age of 4 years (range 2
days-12 years), 16 were male, and 18 required inpatient care. Eleven presented
with infection, seven with clear drainage, three with umbilical polyps/granulation,
three with pain and one with recurrent UTIs and one with an asymptomatic
punctum. Two had associated anomalies (hypospadias and vesico-ureteral reflux).
Urine analysis and urine cultures did not correlate with infection. Ultrasound was
diagnostic in 95% of cases. Twenty patients underwent primary cyst excision,
and six underwent incision and drainage (I&D) with delayed excision. Five
patients underwent primary excision while infected and two developed post-
operative complications (wound infection and urine leak). All six patients who
underwent two-stage procedure were infected, none had complications.

Conclusions: Persistent urachal remnants can present at any age with a variety of
clinical manifestations. Ultrasound is a reliable diagnostic tool. Simple excision
of non-infected lesions is appropriate. In cases of acute infection, initial I&D and
delayed cyst excision is indicated.

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TOWARDS EVIDENCE-BASED BEST PRACTICES IN NEONATAL SURGICAL CARE

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Background and Purpose: Neonatal surgical practice is subject to regional variations resulting from local biases; hence single institution case series seldom generate meaningful outcomes data. The Canadian Neonatal Network, established in 1995, collects clinical data prospectively, on every admission to each of its 17 tertiary level units (accounting for 75% of neonatal intensive care unit (NICU) beds) in Canada. The purpose of this study was to interrogate the network database to determine national and regional case volumes, outcomes and resource utilization for several neonatal surgical conditions.

Methods: The Canadian Neonatal Network database was used to measure a population-based, profile of incidence, outcome and resource utilization over a 22 month period (January 8, 1996-October 31, 1997; 20,488 total admissions) for the following International Classification of Diseases, Ninth Revision (ICD-9) diagnostic codes: 741-spina bifida; 748.4-congenital cystic lung disease; 750.3-tracheoesophageal fistula; 751.1- atresia/stenosis of small intestine; 751.2- atresia/ stenosis of large intestine/ imperforate anus; 751.3-Hirschsprung’s disease; 756.6-anomalies of the diaphragm; 756.7-anomalies of the abdominal wall. Also, all infants receiving extracorporeal membrane oxygenation (ECMO) during the study period were identified.

Results: Case volumes corresponding to each diagnostic code were as follows: 741 (104), 748.4 (12), 750.3 (124), 751.1 (142), 751.2 (121), 751.3 (67), 756.6 (88), 756.7 (151), ECMO cases (28). There were expected distributions in case volume by site reflecting bed capacities, as well as unexplained distributions reflecting either incidence variations or regional termination practices. National survival for congenital diaphragmatic hernia (CDH) was unexpectedly high at 83%.

Conclusion: A national database is a powerful analytical tool that enables population-based outcomes analysis for specific diagnoses. Consideration should be given to the development of a perinatal database with surgical outcome fields that would permit regional comparisons and best practice conclusions.

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THE QUALITY OF LIFE OF CHILDREN WHO HAVE UNDERGONE
THE NUSS PROCEDURE FOR PECTUS EXCAVATUM

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Purpose: The purpose of this project is to better understand the quality of life experiences of children who have undergone the Nuss procedure for Pectus Excavatum. More specifically the aim is to:

- Better understand what life is like for these children after the surgical procedure
- Identify changes in quality of life from the perspective of the children and their parents

Methods: This research constitutes the first segment in a mixed-method longitudinal design. Four children with severe pectus deformities (Haller index >3.25) underwent the Nuss repair. After adequate time for recovery, semi-structured interviews with each patient and parent(s) were conducted based on the Keith and Schalock’s (1994) quality of life model. Textual analysis was carried out using Atlas.ti, a qualitative data analysis program that facilitates such activities as selecting, coding and comparing textual segments.

Results: Results indicate that the children interviewed (and their parents) experienced significant improvement in overall quality of life as a result of the surgery. These children experienced heightened levels of self-confidence and renewed interest in physical activity.

Conclusions: Children with severe pectus excavatum deformities experienced significant improvement in overall quality of life following the minimally invasive Nuss repair. The children and their parents who were interviewed expressed satisfaction with both the physical results of the surgery and with how the corrected deformity improves overall quality of life.

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COST-EFFECTIVENESS OF LAPAROSCOPIC APPENDECTOMY IN CHILDREN

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Purpose: The aim of the study was to look at the cost-effectiveness of laparoscopic appendicectomy in relation to open appendicectomy.

Methods: Eighty-seven children aged 4-15 years undergoing appendicectomy for suspected appendicitis were studied. Study was prospective, randomised and single-blinded, with parallel groups. Laparoscopic procedures were performed with a core set of reusable instruments. While the wage costs of anaesthetic and operating staff were the same irrespective of whether there was any activity on duty, we constructed a chronological profile of the usage of the operating rooms to discriminate the real expenses between the two surgeries. Cosmetic results of the two surgical techniques were evaluated at one month after the operation.

Results: Children returned earlier to school (P=0.08) and to their sport activities (P=0.02) after laparoscopic compared with open appendicectomy. Laparoscopic appendicectomy resulted in shorter duration of pain at home: mean (s.d.) 3.0 (1.6) versus 4.1 (3.0) days (mean difference 1.1 days, 95 per cent c.i. 0.1-2.1 days; P=0.05). The cosmetic results was good in all children in the laparoscopic group compared with 37 children (84.1%) in the open group (P=0.03). Although the total procedure time was significantly longer in the laparoscopic group (89.5 (35.3) versus 62.3 (16.6) min (mean difference 27 min, 95 per cent c.i. 15.5-38.9 min; P=0.01), laparoscopic procedures were not associated with increased surgical or anaesthesia cost in the public hospital. There were no differences between the two groups for age, surgical diagnosis, complications, or length of hospital stay.

Conclusion: Laparoscopic appendicectomy in children was associated with earlier return to normal activities, less postoperative pain and better cosmesis. LA was not a more expensive alternative to OA in our hospital system.

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A CHICKEN MODEL FOR STUDYING THE EMBRYOLOGY OF CLOACAL EXSTROPHY

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\textsuperscript{1} Dept. of Embryology, Georg-August-University Göttingen, 2 Dept. of Pediatric Surgery, UKE Hamburg, Germany

**Background:** The embryology of bladder- and cloacal exstrophy is a mystery. Reasons for this are the lack of human embryos showing these rare malformations as well as the scarcity of appropriate animal models. Here, we present cases of cloacal exstrophy found in chick embryos subsequent to the application of the antitrypanosomal drug suramin. Our animal model might facilitate insight into the embryology of bladder- and cloacal exstrophy. **Methods:** Fertilized White Leghorn eggs were incubated at 38° C and 75% humidity. Embryos were treated in ovo at incubation day 3 (stages 13 (n=50) and 14 (n=50) according to Hamburger and Hamilton). The egg shell was windowed and solutions of suramin (stage 13, 40?l / 0.2%; stage 14, 80?l / 0.3%) were injected into the coelomic cavity. The window was closed and the embryos were reincubated until examination at incubation day 8. **Results:** Treatment with suramin caused a wide range of malformations. Cloacal exstrophy was noted in 6.9% (n=2) and 4% (n=1) of the survivors (n=29/25). **Conclusions:** Suramin can induce cloacal exstrophy in chick embryos. We are actually modifying our experimental protocols to increase the incidence of this malformation. Our model might facilitate studies on the morphogenesis of cloacal exstrophy.
COMBINED APPROACH TO FUNCTIONAL CONSTIPATION IN CHILDREN

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Roma, ITALY

**Background:** Our fifteen-year experience with children shows a high percentage of recurrence of functional constipation with conventional treatment. These data, confirmed in the international literature, incited us to develop a new therapeutic approach.

**Purpose:** Use of medical-psychological treatment to achieve intestinal control and avoid recurrence of constipation in children.

**Methods:** We studied 25 children (18 males; mean 4.7 years; range 2.10 – 7) with 20% anal fissure, 30% encopresis, 55% pain on defecation, 90% fecal retention due to functional constipation. Children and parents were questioned about eating and sleeping habits, school, toilet-training, daily routine. Treatment: increasing water and fibre intake, laxatives, and family therapy including making rules and working on autonomy and paternal role.

**Results:** Mean onset was 3.5 years following “stressful events” (88%). Our questionnaire shows 71% lacked parental autonomy and authority; 86% of children decided on their own about eating habits and sleeping; 71% had a “peripheral” father with a mother-child symbiotic relationship. After one month of therapy, 95% of children showed a modification of at least two behavioural patterns; after three months, 90% had regular bowel movements. During follow-up (6 – 28 months) 50% had two or three recurrent episodes. After one year, 70% had reinforced the new behavioural patterns with resolution of pathological aspects.

**Conclusions:** A multidisciplinary approach in the treatment of childhood functional constipation demonstrated consistent therapeutic results by making rules and by equalizing family roles.

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ASSOCIATION CANADIENNE de CHIRURGIE PÉDIATRIQUE

34ième

Réunion Annuelle

VANCOUVER

19-22 Septembre, 2002
Trente-quatrième Congrès Annuel

ASSOCIATION CANADIENNE de
CHIRURGIE PÉDIATRIQUE

19-22 Septembre, 2002

Westin Bayshore Resort & Marina
Vancouver (British Columbia)
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

Le Collège Royal des Médecins et Chirurgiens du Canada commandite la présente réunion par l'octroi d'une subvention pour la réunion annuelle d'associations nationales de spécialistes
PROGRAMME SCIENTIFIQUE ET SOCIAL

Jeudi, le 19 septembre 2001

12:00 - 17:00 Réunion du Conseil de l'ACCP
17:00 Inscription
18:00 - 22:00 Réception de Bienvenue – Hôtel Fort Garry

Vendredi, le 20 septembre 2001

07:00 - 12:00 Inscription
07:00 - 07:30 Petit Déjeuner
07:30 - 07:40 Mot de Bienvenue et Ouverture du Congrès
07:40 - 09:40 PREMIÈRE Session Scientifique
09:40 - 10:10 Pause-Santé
10:10 - 11:15 DEUXIÈME Session Scientifique
11:15 - 12:00 Fred MacLeod Lecture, Dr. Birahwe-Male
12:00 - 13:00 Lunch avec les membres de la tribune
13:00 - 14:20 TROISIÈME Session Scientifique

Samedi, le 21 septembre 2001

06:00 - 08:00 Réunion du Comité de Spécialité en chirurgie générale pédiatrique
06:00 - 08:00 Réunion du Comité de Publications
07:00 - 12:00 Inscription
07:00 - 07:30 Petit Déjeuner
07:30 - 09:30 QUATRIÈME Session Scientifique
09:30 - 10:00 Pause-Santé
10:00 - 11:00 CINQUIÈME Session Scientifique
11:00 - 12:00 "2 minutes / 2 diapos"
12:00 - 14:00 Déjeuner d'affaire des Membres
18:00 Réception du Président –
19:00 Capilano Suspension Bridge Park
19:00 Banquet du Président (Potlatch) – Capilano Suspension Bridge Park

Dimanche, le 22 septembre 2001

07:00 - 09:00 Inscription
07:00 - 07:30 Petit Déjeuner
07:30 - 09:00 SIXIÈME Session Scientifique
09:00 - 09:30 Pause-Santé
09:30 - 09:40 Prix du résident pour la meilleure présentation clinique et expérimentale
09:40 - 10:40 SEPTIÈME Session Scientifique
10:40 Mot d'adieu du président
MOT DE BIENVENUE DU PRÉSIDENT

Bienvenue à la 34e réunion annuelle de l’Association canadienne de chirurgie pédiatrique. L’annulation, l’an dernier, de la réunion de l’Association à Winnipeg, n’est plus aujourd’hui que le rappel d’un important point tournant de l’histoire moderne. Les événements du 11 septembre ne sont pas seulement un souvenir, mais ils constituent aussi un aspect très concret de notre nouvelle réalité.

Néanmoins, la vie continue. La réunion qui se tient cette année à Vancouver promet d’offrir une grande opportunité pour apprécier et partager quelque chose qui n’a pas changé et qui est une constante dans notre vie. Il s’agit de l’opportunité de se réunir, en tant qu’acteurs du monde de la chirurgie pédiatrique du Canada, pour partager une tradition qui nous est chère à tous. Le docteur Geoff Blair et ses collègues de Vancouver ont créé le meilleur cadre et la meilleure opportunité qui puissent exister, pour nous permettre de nous replonger dans cette tradition. Le docteur Ken Shaw et son comité de programmes ont élaboré une programmation qui permettra aux participants d’avoir l’assurance d’être bien informés sur les sujets proposés.

Je me réjouis à la perspective de prendre part à cette réunion et je savoure à l’avance tout ce que promet cette brochure. Je crois que vous ne serez pas déçus.

Veuillez agréer mes salutations cordiales.

Mike Giacomantonio, MD, FRCS (C)
Président, Association canadienne de chirurgie pédiatrique
À PROPOS DE L’ASSOCIATION CANADIENNE DE CHIRURGIE PÉDIATRIQUE

L’Association Canadienne de Chirurgie Pédiatrique fut fondée en 1967. Son principal but est d’améliorer la qualité des soins chirurgicaux offerts aux enfants au Canada.

Il existe trois secteurs d’intérêt principaux pour les membres. Ce sont les méthodes diagnostiques, les traitements ainsi que la recherche.

Les Nouveau-Nés Porteurs de Malformations Congénitales
Bien que la majorité des nouveau-nés porteurs de malformations congénitales graves puissent être opérés avec succès, il arrive souvent que la malformation ne soit pas reconnue ou, si elle est diagnostiquée, que le médecin de première ligne ne soit pas au courant des possibilités chirurgicales. Dans ces conditions, la plupart de ces enfants meurent ou, s’ils survivent, la qualité de leur vie est fortement diminuée par leur malformation.

Les Néoplasies de l’Enfant
Le cancer constitue la deuxième cause de mortalité chez les enfants. Actuellement, l’exérèse chirurgicale des tumeurs associée à la chimiothérapie et la radiothérapie permet de guérir la majorité de ces enfants.

Les Traumatismes
Les traumatismes représentent la première cause de mortalité infantile en Amérique du Nord. Grâce aux méthodes modernes de premiers soins, de transport, de réanimation et de soins intensifs, ainsi qu’à la disponibilité des équipes chirurgicales spécialisées, il est devenu possible de sauver un grand nombre de ces enfants.

Programme d’Éducation Médicale Continue
Afin de réussir à améliorer la qualité des soins chirurgicaux pédiatrique, l’Association Canadienne de Chirurgie Pédiatrique a lancé un programme d’éducation médicale continue pour les médecins, le personnel infirmier ainsi que pour les autres travailleurs du domaine de la santé de l’enfant. Un fonds d’éducation fut créé afin de pouvoir soutenir ce programme.

Le Fonds d’Éducation de l’Association Canadienne de Chirurgie Pédiatrique est inscrit auprès du gouvernement fédéral et tous les dons qu’il reçoit sont entièrement déductibles d’impôt. Une vérification comptable est faite tous les ans.

Les dons peuvent être adressés à:
Peter Fitzgerald, M.D.
Secrétaire-Trésorier de l’ACCP
McMaster Children’s Hospital
1200 Main St. W., Rm 4E2
Hamilton, Ontario, CANADA
L8N 3Z5

Téléphone (905) 521-2100 Ext 75231
Fax (905) 521-9992
E-mail fitzger@mcmaster.ca
PRÉSIDENTS

1967-1973  Harvey Beardmore  Montréal
1973-1975  Colin Ferguson*  Winnipeg
1975-1977  Jim Simpson*  Toronto
1977-1979  Sam Kling  Edmonton
1979-1981  Pierre-Paul Collin  Montréal
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  Montréal
1991-1993  Sigmund H. Ein  Toronto
1993-1995  Angus Juckes  Regina
1995-1997  Jean G. Desjardins  Montréal
1997-1999  David P. Girvan  London
1999-2001  Ray Postuma  Winnipeg
2001-2003  Mike Giacomantonio  Halifax

* décédé

SECRÉTAIRES-TRÉSORIERS

1967-1974  Barry Shandling  Toronto
1974-1978  Gordon Cameron  Hamilton
1978-1983  Frank M. Guttman  Montréal
1989-1995  Ray Postuma  Winnipeg
1995-2002  Salam Yazbeck  Montréal
2002 -  Peter G. Fitzgerald  Hamilton
## MEMBRES FONDATEURS

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<td>TURCOT*</td>
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*décedé

Le premier CONGRÈS ANNUEL eut lieu le 22 janvier, 1969 à VANCOUVER
LES ARMOIRIES
DE
L’ASSOCIATION CANADIENNE DE CHIRURGIE PÉDIATRIQUE

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 guarit”.

Description

Le rouge et le violet des armoiries sont les couleurs du Collège Royal des Médecins et Chirurges 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.
PRÉSENTATIONS DES RÉSIDENTS

Les présentations faites par les résidents en chirurgie sont jugées par un panel constitué des membres du Comité de Publication. Il y a deux catégories: celui du meilleur travail clinique et celui du meilleur travail expérimental. Chaque prix est de 500$. Le comité du Programme essaie normalement de placer ces communications durant les deux premiers jours du programme afin que la remise des prix puisse avoir lieu au cours du Banquet de Président.

PRIX POUR LES MEILLEURES COMMUNICATIONS DES RÉSIDENTS 2000

MEILLEUR TRAVAIL CLINIQUE

Dr. David J. HACkAM

“Mechanism of pediatric trauma deaths in Canada and the United States: The role of firearms”
D.J. Hackam, M.V. Mazziotti, R.H. Pearl, A.L. Winthrop, M. Kreller, J.C. Langer
The Hospital for Sick Children, Toronto (Ontario) CANADA
St.Louis Children’s Hospital, St.Louis MO U.S.A.

MEILLEUR TRAVAIL EXPÉRIMENTAL

Dr. Ioana BRATU

“Pulmonary artery remodeling after reversible tracheal occlusion in diaphragmatic hernia”
I. Bratu, H. Flageole, J.M. Laberge, M.F. Chen, B. Piedboeuf
McGill University Health Center, The Montreal Children’s Hospital Montreal (Quebec) CANADA

FÉLICITATIONS AUX DRS. HACKAM ET BRATU !
ATTRIBUTION DES PRIX

LIVRE – ASHCRAFT TEXTBOOK

Dr. Adriana S. CONDELLLO
“Pediatric trauma registries: The foundation of quality care”
A.S. Condello, H.J. Hancock, M. Hoppensack, M. Tenenbein,
T. Charkyk-Stewart, D. Kirwin, J. Williamson, C. Findlay,
M. Moffatt, N. Wiseman, R. Postuma
University of Manitoba, Winnipeg (Manitoba) CANADA

ABONNEMENT AU JOURNAL OF PEDIATRIC SURGERY

Dr. John GILLICK
“Intestinal neuronal dysplasia: Results of treatment in 33 patients”
J. Gillick, H. Tazawa, P. Puri
Children’s Research Centre, Our Lady’s Hospital for Sick Children
Crumlin, Dublin IRELAND

ABONNEMENT AU SEMINARS IN PEDIATRIC SURGERY

Dr. Paul WALES
“Longterm outcome after nonoperative management of complete traumatic pancreatic transection in children”
P. Wales, B. Schuckett, P.C.W. Kim
The Hospital for Sick Children, Toronto (Ontario) CANADA

FÉLICITATIONS AUX DR. CONDELLLO, GILLICK AND WALES!
La visite du Docteur Birabwe-Male a été rendue possible grâce au support financier du Collège Royal des Médecins et Chirurgiens du Canada.


En 1994 elle passa un an à Great Ormond Street Hospital et obtint un diplôme en chirurgie pédiatrique. De retour à Kampala en 1995, elle a monté une unité de chirurgie pédiatrique dont elle est en charge depuis.

Le Dr Birabwe-Male est membre des associations de chirurgie de l’Ouganda et de l’Afrique de l’Est ainsi que de l’association panafricaine de des chirurgiens pédiatriques. Elle siège également sur l’exécutif de la société ougandaise de gastro-entérologie.

Le Dr Birabwe-Male est actuellement Chirurgienne pédiatrique et conférencière honoraire à l’Université Makerere.

L’Association Canadienne de Chirurgie Pédiatrique est honorée d’inviter le

DOCTEUR BIRABWE-MALE

à titre de conférencier du Collège Royal des Médecins et Chirurgiens du Canada

à donner la conférence annuel le Fred MacLeod
Association Canadienne de Chirurgie Pédiatrique
35ème Congrès Annuel
18-21 septembre 2003
Queen’s Landing Inn and Conference Resort,

Niagara-on-the-Lake, Ontario

Les chirurgiens pédiatriques de Hamilton et de Toronto vous invitent à vous joindre à eux l’an prochain dans le site enchanteur de Niagara-on-the-Lake. Souvent surnommée la ville la plus charmante de l’Ontario, elle est le siège du Shaw Theatre Festival et se situe tout près des célèbres vignobles de la vallée du Niagara et des Chutes de Niagara.

Le congrès aura lieu au Queen’s Landing Inn & Conference Resort – un manoir géorgien avec des planchers de marbre, un magnifique escalier en colimaçon et de superbes vitraux aux plafonds. Vous pourrez profiter de la gastronomie locale, faire une promenade tranquille en ville, passer une soirée au théâtre ou visiter les chutes, tout cela en dehors des heures de congrès.

Située à 1-2 heures des aéroports de Toronto, Hamilton et Buffalo, Niagara-on-the-Lake est facilement accessible par la route ou par avio
VISITEZ NOTRE SITE INTERNET

www.caps.ca