CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS

32nd

Annual Meeting

MONTEBELLO

September 15-18, 2000
Thirty-second Annual Meeting

CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS

September 15-18, 2000

Le Château Montebello
392 Notre-Dame
Montebello (Quebec) CANADA
J0V 1L0

(819) 423-6341
SCIENTIFIC AND SOCIAL PROGRAM

Friday, September 15, 2000
09:00 - 17:00  Meeting of CAPS Council (Executive)
17:00         Registration
19:00 - 22:00 Welcoming Reception – Le Château Montebello

Saturday, September 16, 2000
07:00 - 13:00 Registration
07:00 - 07:55 Continental Breakfast
07:30 - 13:00 Exhibits
07:55 - 08:00 Welcome and Opening Ceremony
08:00 - 09:54 Scientific Session ONE
09:54 - 10:30 Refreshment Break
10:30 - 11:30 Fred MacLeod Lecture, Dr. James O’Neill, Jr.
11:30 - 12:15 Panel Discussion on Manpower
12:15 - 13:30 Lunch (free)
13:30 - 14:54 Scientific Session TWO
14:54 - 15:30 Refreshment Break
15:30 - 17:30 Scientific Session THREE

Sunday, September 17, 2000
06:00 - 08:00 Specialty Committee in Pediatric General Surgery Meeting
06:00 - 08:00 Publication Committee Meeting
07:00 - 12:00 Registration
07:00 - 08:00 Continental Breakfast
07:30 - 13:00 Exhibits
08:00 - 09:48 Scientific Session FOUR
09:48 - 10:30 Refreshment Break
10:30 - 12:00 Scientific Session FIVE
12:00 - 13:00 "2 minutes / 2 slides"
13:00         CAPS Members Business Meeting
18:00         Presidential Reception – Le Château Montebello
19:00         Presidential Banquet – Le Château Montebello

Monday, September 18, 2000
07:00 - 09:00 Registration
07:00 - 08:00 Continental Breakfast
07:00 - 09:30 Exhibits
08:00 - 09:06 Scientific Session SIX
09:06         Annual Meeting Adjourn
Bienvenue! Welcome! Recepción! Willkommen! Benvenuto! Kangei!

The 32nd annual CAPS meeting traces the footsteps of world leaders to Montebello. Host to the G7 meeting in 1981 (and the NATO Nuclear Planning Group (NPG) in 1983!), Montebello is a most appropriate meeting place for CAPS members and it's many international friends and guests. On behalf of CAPS I extend a warm welcome, expressed in the five G7 languages, to all delegates attending this CAPS annual meeting.

This is a time of special fellowship, of renewing acquaintances, welcoming new members and guests, enjoying the social events and strengthening our friendships. CAPS is a relatively small association which gives us the opportunity to exchange views in a frank and amiable manner. The scientific program is always the highlight of the meeting, where experienced and "developing" pediatric surgeons and non-surgeons participate in a varied and stimulating program. After all, Pediatric Surgeons speak the universal language of dedication and care in the surgical needs of all children.

We are pleased to welcome Dr. James O'Neill Jr. as this year's guest lecturer. Besides a stellar career in Pediatric Surgery, Dr O'Neill brings an important perspective to workforce issues in surgery, a theme at this year's meeting. A number of "dark clouds" are forming on the horizon of our specialty. We need to interpret them to better plan and manage the children under our surgical care.

Dr. Pierre Soucy and the local Ottawa planning group have planned a wonderful meeting in this memorable setting. Dr. Ken Shaw and the program committee have organized a top notch and varied scientific program. Dr. Maria Di Lorenzo and the publication committee will again be working hard during the meeting to assure that the papers get into print. They also participate in the adjudication of the residents' best papers and presentations for the "CAPS Cup", or should that be the "CAPS Cap" award?

Last, but certainly not least, I want to acknowledge the hard work of our faithful Secretary Treasurer Dr. Salam Yarbeck and his staff. Just one more year Salam and your task will be well done, but only as the "S-T"!

Bon congrès! Enjoy! Goce! Genießen Sie! Godere! Tanoshimi!

Ray Postuma, M.D.
President
Canadian Association of Paediatric 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:

Salam Yazbeck, M.D.
CAPS Secretary-Treasurer
Hôpital Sainte-Justine
3175 Côte Ste. Catherine
Montreal (Quebec) CANADA
H3T 1C5

Telephone (514) 345-4688
Fax (514) 345-4964
E-mail Secretary@caps.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    Montreal
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 Juckes    Regina
1995-1997    Jean G. Desjardins    Montreal
1997-1999    David P. Girvan    London
1999-2001    Ray Postuma    Winnipeg

* 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-        Salam Yazbeck    Montreal
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, sinster 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".
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
FUTURE C.A.P.S. MEETING

33rd Annual Meeting
September 14-16, 2001
Hotel Fort Garry, WINNIPEG

www.fortgarryhotel.com

Welcome to the Fort Garry Hotel.

Winnipeg's Grand Hotel of distinction, since 1913.
In the heart of the city, just blocks to the historic Forks Market
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.

WINNERS OF THE 1999 RESIDENT BEST PAPER AWARDS

BEST CLINICAL RESEARCH PAPER

Dr. Georges AZZIE

"Manual detorsion in cases of testicular torsion: A viable option"
G. Azzie, S. Yazbeck, L. Garel, J. Dubois, S. Bouchard
Hôpital Sainte-Justine
Montreal (Quebec) CANADA

BEST BASIC SCIENCE RESEARCH PAPER

Dr. Marcello ZAMPARELLI

"Amino acids counteract the inhibitory effect of fentanyl on hepatocyte oxidative metabolism"
M. Zamparelli, S. Eaton, L. Spitz, A. Pierro
Institute of Child Health and Great Ormond Street Hospital for Children
London UNITED KINGDOM

CONTRATULATIONS DR. AZZIE AND DR. ZAMPARELLI!
BOOK PRIZE

WINNERS OF THE 1999 RESIDENT BEST PAPER AWARDS

BEST CLINICAL RESEARCH PAPER

Dr. Michel LALLIER
"Liver transplantation in biliary: Experience in 314 children"
Hôpital Sainte-Justine, Montreal (Quebec) CANADA

Dr. Carmelo ROMEO
"Gastric motility disorders in patients operated for esophageal atresia
and tracheoesophageal fistula"
C. Romeo, S. Baldari, A. Centorrino, F. Proietto, G.F. Scalfari,
P. Antonuccio, A. Centonze, C. Gentile
Institute of Nuclear Medicine, University of Messina, Messina ITALY

BEST BASIC SCIENCE RESEARCH PAPER

Dr. Mélanie KAVANAGH
"Effect of GS 26303, an endothelin-converting enzyme/neutral endopeptidase inhibitor, on
nitrofen-induced congenital diaphragmatic hernia in the rat"
M. Kavanagh, D. Kluth, B. Battistini, A.Y. Jeng, S. Jean,
L. Fournier, D. Major, R. Cloutier
Centre Hospitalier de l’Université Laval, Sainte-Foy (Québec) CANADA

Dr. Paisarn VEJCHAPIPAT
"Intestinal metabolism after ischaemia-reperfusion"
P. Vejchapipat, S.R. Williams, L. Spitz, A. Pierro
Institute of Child Health and Great Ormond Street Hospital for Children
London UNITED KINGDOM

CONTRATULATIONS DR. LALLIER, ROMEO,
KAVANAGH AND VEJCHAPIPAT !
GUEST LECTURER

Doctor James A. O'Neill, Jr, M.D.

The visit by Doctor James A. O'Neill is made possible with the financial support of the Royal College of Physicians and Surgeons of Canada.

Born in New York, Dr O'Neill graduated from Yale University in 1959 and received his surgical training at Vanderbilt University Hospital for general surgery and in Colobus (Ohio) for General and Thoracic Pediatric Surgery.

Dr O'Neill was appointed Assistant Professor of Surgery in 1969 at Louisiana State University and moved quickly up the academic ranks and took the position of Professor of Surgery and Chairman of the department of pediatric surgery at Vanderbilt University School of Medicine in 1971. In 1981, he became Surgeon-in-Chief at the Children's Hospital of Philadelphia. Between 1988 and 1995 Dr O'Neill held the C.E. Koop Professor of Surgery chair at the University of Pennsylvania School of Medicine. In 1995, he returned to his Alma Mater and took the position of Surgeon-in-Chief at Vanderbilt University Medical Center.

Dr O'Neill is Board certified in General surgery, General pediatric surgery, thoracic pediatric surgery and surgical critical care.

Dr O'Neill is member of 37 Societies and has been asked to sit on 44 different national committees. He also is on the editorial board of 14 different publications. Dr O'Neill has published extensively: Books, book chapters and no less than 288 publications on all aspects of pediatric surgery including training and workforce issues.

The Canadian Association of Pediatric Surgery is pleased to invite

DOCTOR JAMES A. O'NEILL, Jr.

As a speaker of the Royal College of Physicians and Surgeons of Canada
to give the Fred MacLeod Annual Lecture.
His talk is entitled: "PEDIATRIC SURGERY WORKFORCE".
PRINTING OF THE PROGRAM BOOKLET AND PART OF THE SOCIAL PROGRAM
WERE MADE POSSIBLE WITH THE FINANCIAL SUPPORT
OF THE FOLLOWING SPONSORS

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# CAPS COUNCIL 1999-2000

## EXECUTIVE

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<th>Name</th>
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<tr>
<td>President</td>
<td>R. Postuma</td>
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<tr>
<td>Past-President</td>
<td>D. Girvan</td>
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<td>Secretary-Treasurer</td>
<td>S. Yazbeck</td>
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<tr>
<td>Director (3rd year)</td>
<td>P. Soucy</td>
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<tr>
<td>Director (2nd year)</td>
<td>M. Giacomantoni</td>
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<tr>
<td>Director (1st year)</td>
<td>J. Langer</td>
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## COMMITTEES

### Archivist

- S. Ein

### Bilingual

- R. Closter
- R. Eccles
- A. Osinet

### Constitution and Bylaws

- J. Bass
- J. Donald
- A.W. Jackes
- P. Soucy

### Ethics, Moral and Legal Issues

- A.L. Bergman
- T.J. Baillie
- B. Dobman
- N. Greco

### Finance

- N. Wiseman
- N. Grace
- D. Girvan
- D. Poenaru (Education)
- S. Yazbeck (Secretary-Treasurer)

### Future Meetings

- President (R. Postuma)
- Secretary-Treasurer (S. Yazbeck)

### Local arrangements:

- P. Soucy 2000
- R. Postuma 2001
- G.K. Blair 2002

### Meeting coordinator:

- Arlene Ein

### Liaison with American College of Medicine

- M. Laffee

### Membership and Credentials

- R. Postuma
- S. Yazbeck
- J. Neilson
- L.A. Scott
- D. Price

### Nominating

- R. Girvan
- A. Wong (3rd year)
- M. Di Lorenzo (2nd year)
- B.J. Hancock (1st year)

### Program

- K. Shaw (2000)
- R. Postuma
- P. Kim
- D. St-Vil
- P. Fitzgerald
- R. Cameron

### Publication

- M. Di Lorenzo (2000)
- R. Closter
- J. Langar
- D. Croitoru
- G. Lees
- D. Siglet
- A. Hayashi (1997)
- H. Flogel
- S. Rubin
- M. Walton

### Research

- P. Kim
- R. Supina
- R. Closter
- J. Langar
- G.K. Blair

### Specialty Committee in Pediatric General Surgery (of the Royal College)

- S. Ein
- A. Hayashi *(University of British Columbia)*
- D. Price *(Dalhousie University)*
- J.M. Laberge ***(McGill University)*
- R. Filer ***(University of Toronto)*
- P. Soucy ***(University of Ottawa)*
- S. Yazbeck ***(University of Montreal)*
- A. Jackes *
- P. Fitzgerald *
- G.K. Blair **
- M. Giacomantoni **
- R. Keith **(Chair, general surgery committee)

### Standards

- M. Evans
- N. Grace
- D. Kanali
- A.L. Bergman
- A. Wong

### Trauma

- A. Wong (1997)
- B.J. Hancock
- D. St-Vil
- M. Walton
- K. Shaw

*Underlining indicates chair of committee*

*Please contact the President or Secretary-Treasurer if you are able to serve on any of the above committees or if corrections are necessary in the above information.*
VISIT OUR WEBSITE

www.caps.ca
PROGRAM SCHEDULE

PROGRAMME DÉTAILLÉ

ABBREVIATIONS

O  original 8 minute paper
R  resident's paper
C  4 minute case/method paper
O,R  Adjudicated
C  Not adjudicated
FRIDAY, SEPTEMBER 15, 2000

LE CHÂTEAU MONTEBELLO

09:00 - 17:00  Meeting of CAPS Council (Executive)
               Quebec Room

17:00          Registration
               Foyer

19:00 - 22:00  Welcoming Reception
               Tent Marquise on the Château ground
SATURDAY, SEPTEMBER 16, 2000

LE CHÂTEAU MONTEBELLO

07:00 - 13:00  Registration
              Foyer

07:00 - 07:55  Continental Breakfast
              Mezzanine Canada

07:30 - 13:00  Exhibits
              Mezzanine Canada

07:55 - 08:00  Welcome and Opening Ceremony
              President, Dr. Ray Postuma

08:00 - 09:54  Scientific Session ONE
              Canada Room

09:54 - 10:30  Refreshment Break
              Mezzanine Canada

10:30 - 11:30  Fred Mac Leod Lecture
              Doctor James O'Neill, Jr. Vanderbilt University Medical Center
              "Pediatric Surgery Workforce"

11:30 - 12:15  Panel Discussion on Manpower

12:15 - 13:30  Lunch

13:30 - 14:54  Scientific Session TWO
              Canada Room

14:54 - 15:30  Refreshment Break
              Mezzanine Canada

15:30 - 17:30  Scientific Session THREE
              Canada Room
SATURDAY, SEPTEMBER 16, 2000

SCIENTIFIC SESSION ONE
Le Château Montebello
Canada Room

07:55 Welcome and Opening Ceremony
Dr. Ray Postuma

CO-CHAIRMEN Dr. J.M. Laberge Dr. M. Giacomantonio

08:00 08:08
1 OR

JEJUNAL ATRESIAS AND ASSOCIATED MALFORMATIONS:
A CORRELATION WITH TIMING OF IN-UTERO INSULT
B. Sweeney, R. Surana, P. Puri
Children's Research Centre, Our Lady's Hospital for Sick Children
Crumlin, Dublin 12 IRELAND

4-minute DISCUSSION

08:12 08:20
2 OR

MINIMAL INTERVENTION, NO GENERAL ANAESTHETIC (GA) REDUCTION
OF GASTROSCISIS ALLOWS EARLIER ESTABLISHMENT
OF ENTERAL FEEDS AND EARLIER DISCHARGE
C.N. Radhakrishnan, A. Dickson, A. Bianchi
Surgical Neonatal Unit, St. Mary's Hospital
Manchester, UNITED KINGDOM

4-minute DISCUSSION
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<tr>
<th>Time</th>
<th>#</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
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</table>
| 08:24 | 3 | PRIMARY PERITONEAL DRAINAGE FOR INCREASING VENTILATORY REQUIREMENTS IN CRITICALLY ILL NEONATES WITH NECROTIZING ENTEROCOLITIS | A. Dzekovic, D.M. Notrica, D.E. Wesson, T. Jaksic                                                                                     | Texas Children's Hospital, Houston TX, USA  
Boston Children's Hospital, Boston, MA, USA |
| 08:36 | 4 | THE CLINICAL SIGNIFICANCE OF THROMBOCYTOPAENIA IN NEONATES WITH NECROTIZING ENTEROCOLITIS (NEC) | M. Ververidis, E.M. Kirby, L. Spitz, D.P. Drake, A. Pierro                                                                                 | Institute of Child Health and Great Ormond Street Hospital for Children  
London, United Kingdom |
| 08:48 | 5 | ALTERED NITRIC OXIDE (NO) PRODUCTION IN PREMATURE GUT MAY INCREASE SUSCEPTIBILITY TO INTESTINAL DAMAGE IN NECROTIZING ENTEROCOLITIS (NEC) | M. Di Lorenzo, A. Kraulis                                                               | Hôpital Sainte-Justine, University of Montreal, Montreal (Quebec), Canada  
Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa (Ontario), Canada |
| 09:00 | 6 | NON SURGICAL NECROTIZING ENTEROCOLITIS (NEC) MODEL IN THE NEWBORN FIGLET USING 2,4 DINITROBENZENE SULFONIC ACID (DNBS) | N. Sng, M. Boitano, M. Al-Aynati, R. Riddell, S. Collins, S. Atkinson, J.M. Walton  
Children's Hospital, McMaster University  
Hamilton (Ontario), Canada |
PITFALLS IN THE RADIOLOGICAL DIAGNOSIS OF INTESTINAL MALROTATION
A. Ghodsi, M. Lessin, C. Wallace, N. Feins
Floating Hospital for Children, New England Medical Center
Boston, MA USA

GLUCAGON-LIKE PEPTIDE MODULATES INTESTINAL ADAPTATION FOLLOWING RESECTION
D.L. Sigalot, G. Martin, T. Dauvelle
Alberta Children's Hospital
Calgary (Alberta) CANADA

IN VIVO MEASUREMENT OF INTESTINAL ABSORPTION USING 3-0 METHYGLUCOSE IN SHORT BOWEL SYNDROME
F. Debru, G. Martin, D.L. Sigalot
Alberta Children's Hospital
Calgary (Alberta) CANADA

INTESTINAL TRANSPLANTATION: THE CURRENT PEDIATRIC EXPERIENCE
A. Fecteau, D. Grant
The Hospital for Sick Children
Toronto (Ontario) CANADA
<table>
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<tr>
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<tbody>
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<td>10:00</td>
<td>Refreshment Break</td>
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<td>Fred MacLeod Lecture</td>
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<td>Dr. James O'Neill, Jr.</td>
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<td>&quot;Pediatric Surgery Workforce&quot;</td>
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<td>11:30</td>
<td>Panel Discussion on Manpower</td>
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SATURDAY, SEPTEMBER 16, 2000

SCIENTIFIC SESSION TWO
Le Château Montebello
Canada Room

CO-CHAIRMEN
Dr. D. St-Vil
Dr. J.M. Walton

13:30
13:38
12 O R

PEDIATRIC TRAUMA REGISTRIES: THE FOUNDATION OF QUALITY CARE
A.S. Condello, B.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

4 minute DISCUSSION

13:42
13:50
13 O R

MECHANISM OF PEDIATRIC TRAUMA DEATHS IN CANADA
AND THE UNITED STATES: THE ROLE OF FIREARMS
D.J. Hackam, M.V. Mazzotti, R.H. Pearl, A.L. Winthrop, M. Kreller, I.C. Langer
The Hospital for Sick Children, Toronto (Ontario) CANADA
St.Louis Children's Hospital, St.Louis MO USA

4 minute DISCUSSION

13:54
14:02
14 O R

CORRELATION BETWEEN PARENTAL PERCEPTION AND ACTUAL
CHILDHOOD PATTERNS OF BICYCLE HELMET USE AND RIDING PRACTICES:
IMPLICATIONS FOR DESIGNING INJURY PREVENTION STRATEGIES
P.F. Ehrlich, L. Longhi, R. Vaughan, S. Rockwell
West Virginia Children's Hospital, Jon Michels Moore Trauma Center, West Virginia University
Morgantown, WV USA

4 minute DISCUSSION
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Institution</th>
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<tbody>
<tr>
<td>14:06</td>
<td>OR 15</td>
<td>FARM ACCIDENTS IN CHILDREN - A TEN-YEAR REVIEW</td>
<td>S. Meiers, J. Baerg</td>
<td>Saskatoon and Regina General Hospital, University of Saskatchewan</td>
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<td>Regina (Saskatchewan) CANADA</td>
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<td>14:14</td>
<td>OR 16</td>
<td>RURAL PEDIATRIC TRAUMA: VALUE OF POPULATION-BASED MORTALITY STATISTICS</td>
<td>P.F. Ehrlich, L. Ortega, R. Vaughan, P.M. Mucha</td>
<td>West Virginia Children's Hospital, Jon Michael Moore Trauma Center, West Virginia University Morgantown, WV USA</td>
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<td>14:26</td>
<td>OR 17</td>
<td>SPINAL FRACTURES AND ABDOMINAL INJURIES: A CAVEAT</td>
<td>M. Braunover, D. St-Vil, M. Lallier, H. Blanchard</td>
<td>Hôpital Sainte-Justine</td>
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<td>14:38</td>
<td>OR 18</td>
<td>LONGTERM OUTCOME AFTER NONOPERATIVE MANAGEMENT OF COMPLETE TRAUMATIC PANCREATIC TRANSECTION IN CHILDREN</td>
<td>P.W. Wales, B. Schuckett, P.C.W. Kim</td>
<td>The Hospital for Sick Children</td>
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<td>Refreshment Break</td>
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SATURDAY, SEPTEMBER 16, 2000

SCIENTIFIC SESSION THREE
Le Château Montebello
Canada Room

CO-CHAIRMEN
Dr. A. Feeteau
Dr. D. Poenaru

15:30
15:38
O R
REPORTING SURVIVAL WITH CONGENITAL DIAPHRAGMATIC HERNIA (CDH)
S. Al-Shanfary, M. Giacomantonio, J. Dubé, M. Van Den Hof
IWK – Grace Health Centre
Halifax (Nova Scotia) CANADA

4 minutes DISCUSSION

15:42
15:50
O R
STRUCTURAL IMMATUREITY OF THE HEART
IN CONGENITAL DIAPHRAGMATIC HERNIA IN RATS
N. Gusino, H. Shima, P. Puri
Children’s Research Centre, Our Lady’s Hospital for Sick Children
Crumlin, Dublin 12 IRELAND

4 minutes DISCUSSION

15:54
16:02
O R
PULMONARY ARTERY REMODELING AFTER REVERSIBLE TRACHEAL OCCLUSION IN DIAPHRAGMATIC HERNIA
I. Brun, H. Flagaese, J.M. Laberge, M.F. Chen, B. Piedboeuf
The Montreal Children’s Hospital, Montreal (Quebec) CANADA
Centre Hospitalier Universitaire de Québec, Quebec (Quebec) CANADA

4 minutes DISCUSSION
OUTCOME OF ANTENATALLY SUSPECTED CONGENITAL CYSTIC ADENOMATOID MALFORMATION OF THE LUNG (CAML)
N.K. Altaj, J. Bruce, R. Lawson, J.C. Bowen
Royal Manchester Children's Hospital
Pendlebury, Manchester UNITED KINGDOM

PULMONARY SEQUESTRATION REVISITED
The Montreal Children's Hospital, Montreal (Quebec) CANADA
Hôpital Sainte-Justine, Montreal (Quebec) CANADA

ACUTE CHEST SYNDROME (ACS) AFTER LAPAROSCOPIC SURGERY IN CHILDREN WITH SICKLE CELL DISEASE (SCD)
P.W. Wales, E. Carver, M.W. Crawford, P.C.W. Kim
The Hospital for Sick Children, University of Toronto
Toronto (Ontario) CANADA

THE EFFECT OF POSTOPERATIVE FENTANYL ANALGESIA ON THERMOREGULATION IN NEONATES
Dokkyo University School of Medicine, Tochigi JAPAN
Institute of Child Health and Great Ormond Street Hospital for Children, London UNITED KINGDOM
Juntendo University School of Medicine, Tokyo JAPAN
### 16:54 17:02
<table>
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| **ADDITIONAL MEDICAL INFORMATION:** PREVALENCE, SOURCE AND BENEFIT TO PARENTS  
S. Nolke, L. Spitz, A. Pierro  
Institute of Child Health and Great Ormond Street Hospital for Children  
London UNITED KINGDOM |

### 17:06 17:14
<table>
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<th>27</th>
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| **DIRECTED BLOOD DONATION IN PEDIATRIC GENERAL SURGERY:** IS IT WORTH IT?  
P.W. Wales, W. Lau, P.C.W. Kim  
The Hospital for Sick Children  
Toronto (Ontario) CANADA |

### 17:18 17:26
<table>
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| **FETAL ABDOMINAL MASSES:** ANTENATAL AND POSTNATAL COURSE  
B. Masturzo, L. Chitty, M. Zamparelli, L. Spitz, A. Pierro  
Institute of Child Health and Great Ormond Street Hospital for Children, London UNITED KINGDOM  
University College Hospital, Fetal Medicine Unit, London UNITED KINGDOM |

### 17:30
Have a good evening!
SUNDAY, SEPTEMBER 17, 2000

LE CHÂTEAU MONTEBELLO

06:00 - 08:00  Specialty Committee in Pediatric General Surgery Meeting (Dr. Sigmund H. Ein)
              Manitoba/Saskatchewan Room

06:00 - 08:00  Publication Committee Meeting (Dr. Maria Di Lorenzo)
              Alberta/B.C. Room

07:00 - 12:00  Registration
              Foyer

07:00 - 08:00  Continental Breakfast
              Mezzanine Canada

07:30 - 13:00  Exhibits
              Mezzanine Canada

08:00 - 09:48  Scientific Session FOUR
              Canada Room

09:48 - 10:30  Refreshment Break
              Mezzanine Canada

10:30 - 12:00  Scientific Session FIVE
              Canada Room

12:00 - 13:00  "2 minutes / 2 slides"
              Canada Room

13:00  CAPS Members Business Meeting
       Montebello Room

18:00  Presidential Reception
       Le Château Montebello, Mezzanine Canada

19:00  Presidential Banquet
       Le Château Montebello, Canada Room
SUNDAY, SEPTEMBER 17, 2000

SCIENTIFIC SESSION FOUR
Le Château Montebello
Canada Room

CO-CHAIRMEN

Dr. G.K. Blair
Dr. N. Wiseman

| 08:00 | 29 | OR | CLINICAL VS SONOGRAPHIC DIAGNOSIS OF ACUTE APPENDICITIS IN CHILDREN: A COMPARISON OF PATIENT CHARACTERISTICS AND OUTCOMES
The Montreal Children's Hospital
Montreal (Quebec), CANADA |

| 08:12 | 30 | O | RESULTS OF A RANDOMIZED TRIAL COMPARING PROLONGED INTRAVENOUS ANTIBIOTICS TO SEQUENTIAL INTRAVENOUS/ORAL ANTIBIOTICS FOR CHILDREN WITH PERFORATED APPENDICITIS AND OUTCOMES
H.R. Rhee, R.L. Brown, G. Collin, M.G. Cay, J. Gilbert
Duke University Medical Center, Durham, NC USA
Children's Hospital of Buffalo, Buffalo, NY USA |

4-minute DISCUSSION
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<tr>
<th>Time</th>
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<th>METASTATIC CARCINOID TUMOR OF THE APPENDIX</th>
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<td>A. Mikhailov, P. Fitzgerald, J. Bourgeois, B. Cameron</td>
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<td>Children's Hospital, Hamilton (Ontario) CANADA</td>
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<tr>
<th>Time</th>
<th>32</th>
<th>C</th>
<th>PERINEAL SWENSON PULLTHROUGH FOR HIRSCHSPRUNG'S DISEASE</th>
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<td>L.M. Walton, P.G. Fitzgerald, B. Cameron</td>
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<td>Children's Hospital, McMaster University, Hamilton (Ontario) CANADA</td>
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<tr>
<th>Time</th>
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<th>INTERNAL ANAL SPHINCTER ACHALASIA: OUTCOME AFTER INTERNAL SPHINCTER MYECTOMY</th>
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<td>D. De Coene, A. Yoneda, H. Aki, P. Puri</td>
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<tr>
<th>Time</th>
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<th>INTESTINAL NEURONAL DYSPLASIA: RESULTS OF TREATMENT IN 33 PATIENTS</th>
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<td>J. Gillick, H. Tazawa, P. Puri</td>
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<td>09:00</td>
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<td>COMBINED POSTERIOR SAGITTAL AND THREE FLAP ANOPLASTY</td>
<td>J. Bass, S.Z. Rubin, J.M. Walton</td>
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<td>Children's Hospital of Eastern Ontario, Ottawa (Ontario)</td>
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<td>Children's Hospital-HHSC, Hamilton (Ontario)</td>
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<td>09:12</td>
<td>CR</td>
<td>TOTAL COLONIC MANOMETRY: A GUIDE FOR SURGICAL MANAGEMENT OF FUNCTIONAL</td>
<td>M.J. Martin, J.M. Noel, D.A. Wiechmann, K.S. Azarow</td>
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<td>COLONIC OBSTRUCTION</td>
<td>Madigan Army Medical Center</td>
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<td>Tacoma, WA, USA</td>
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<tr>
<td>09:18</td>
<td>O</td>
<td>COLOSTOMY FOR ANORECTAL ANOMALIES: HIGH INCIDENCE OF COMPLICATIONS</td>
<td>N. Patwardhan, B.M. King, D.P. Drake, L. Spitz, A. Piero</td>
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<td>Institute of Child Health and Great Ormond Street Hospital for Children</td>
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<td>09:30</td>
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<td>SPECTRUM OF IMPERFORATE ANUS PROBLEMS IN AFRICA: A PERSONAL EXPERIENCE</td>
<td>D. Poomana</td>
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<td>Queen's University, Kingston General Hospital</td>
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<td>Kingston (Ontario), Canada</td>
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ANIMATED 3-D CT IMAGES OF SPHINCTER MUSCULATURE IN IMPERFORATE ANUS AND CHOICE OF OPERATIVE PROCEDURE
M. Horiawa, Y. Ogura, T. Tainaka, N. Niinomi, I. Taka'asi
Anjo Kosei Hospital
Anjo, Aichi JAPAN

09:48 Refreshment Break
10:30
# Sunday, September 17, 2000

## Scientific Session Five
Le Château Montebello
Canada Room

### Co-Chairmen
Dr. D.L. Sigalet  
Dr. A. Pierro

<table>
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<th>Time</th>
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</table>
IWK-Grace Health Centre and The Queen Elizabeth II Health Sciences Centre  
Halifax (Nova Scotia)  
Canada |
| 10:36 | OR 41   | Surgical Resection and Chemotherapy Improve Survival of Hepatoblastoma | A. Carceller, H. Blanchard, J. Champagne, D. St-Vil, A.L. Bensoussan  
Hôpital Sainte-Justine  
Montreal (Quebec)  
Canada |
Texas Children’s Hospital and the Baylor College of Medicine  
Houston, TX  
USA |
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<tr>
<td>11:08</td>
<td>43 O</td>
<td>EVALUATION OF MINIMALLY INVASIVE APPROACHES TO ACHALASIA IN CHILDREN</td>
<td>D.A. Patrick, S.S. Rothenberg Hospital for Infants and Children, Presbyterian St. Luke's Medical Center, The Children's Hospital, University of Colorado Denver, CO USA</td>
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<tr>
<td>11:12</td>
<td>44 O</td>
<td>ONE TROCAR SURGERY: A LESS INVASIVE VIDEOSURGICAL APPROACH IN CHILDHOOD</td>
<td>A. Martino, M. Zamparelli, G. Cobellis, L. Mastrolandi, G. Amici Selesi Children's Hospital Ancona ITALY</td>
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<tr>
<td>11:20</td>
<td>45 O</td>
<td>GESOPHAGOASTRIC DDISSOCIATION VERSUS FUNDOPICATION: WHICH ONE FOR SEVERELY NEUROLOGICALLY IMPAIRED CHILDREN?</td>
<td>C. Gatti, G. Federici di Abrilta, M. Viola, M.W.L. Gauderer, R. Laviani, L. Dall'Oglio Bambino Gesù Children's Hospital, Roma ITALY Greenville Hospital System, Greenville, SC USA</td>
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*4 minute DISCUSSION*
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<tr>
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<tr>
<td>11:48</td>
<td>47 OR</td>
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| 11:56  | ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN CHILDREN  
P. Pradel, J.M. Laberge, H. Flageole  
Montreal Children's Hospital, McGill University Health Center  
Montreal (Quebec), CANADA |
| 12:00  | "2 minutes / 2 slides"                  |
| 13:00  | CAPS Members Business Meeting           |
|        | Montebello Room                         |
MONDAY, SEPTEMBER 18, 2000
LE CHÂTEAU MONTEBELLO

07:00 – 09:00  Registration
              Foyer

07:00 - 08:00  Continental Breakfast
              Mezzanine Canada

07:30 - 09:30  Exhibits
              Mezzanine Canada

08:00 - 09:06  Scientific Session SIX
              Canada Room

09:06  Annual Meeting Adjourn
<table>
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<th>Time</th>
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<tr>
<td>08:36</td>
<td>51</td>
<td>ENDOSURGERY AND THE OLD PART</td>
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<td>Infants and Children's Hospital at Presbyterian and St.Luke's Hospital</td>
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<td>Denver, CO, USA</td>
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<td>4-minute DISCUSSION</td>
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<td>08:48</td>
<td>52</td>
<td>TRAINING GENERAL SURGERY RESIDENTS IN PEDIATRIC SURGERY:</td>
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<td>08:56</td>
<td>O</td>
<td>A CANADIAN SURVEY</td>
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<td>D. Poulsen and the Members of the CAPS Education Committee</td>
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<td>Queen's University</td>
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<td>Kingston (Ontario), Canada</td>
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<td>4-minute DISCUSSION</td>
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<td>09:00</td>
<td>53</td>
<td>PRENATAL DIAGNOSIS OF ESOPHAGEAL ATRESIA USING MAGNETIC</td>
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<td>09:04</td>
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<td>RESONANCE IMAGING (MRI)</td>
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<td>Washington University School of Medicine, St. Louis, Missouri, USA</td>
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<td>The Hospital for Sick Children, University of Toronto, Toronto, (Ontario),</td>
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<td>4-minute DISCUSSION</td>
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<td>Annual Meeting Adjourn</td>
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MONDAY, SEPTEMBER 18, 2000

SCIENTIFIC SESSION SIX
Le Château Montebello
Canada Room

CO-CHAIRMEN
Dr. K.S. Shaw  Dr. R. Postuma

08:00  48  O
LAPAROSCOPY FOR GASTROESOPHAGEAL REFLUX
DURING THE FIRST YEAR OF LIFE
C. Esposito, P. Mornone, O. Reimberg.
Magna Graecia University of Catanzaro and Federico II University of Naples, ITALY
Hospital CCB, Boulogne Bilaicourt, FRANCE
CHUV Lausanne, SWITZERLAND

4 minute DISCUSSION

08:12  49  O
RESULTS AND COMPLICATIONS OF LAPAROSCOPIC SURGERY
FOR PEDIATRIC VARICOCELE
C. Esposito, M. Zannarelli, G. Monguzzi, M.A. Gonzalez-Salvin,
R. Rubino, L. Mmontano, S. Leggio, A. Papparella, G. Palazzo,
L. Mastroianni, G. Amioli, C. Romeo, T. Cusano
University of Naples Federico II and University of Catanzaro, Italy
Buza Hospital, Milan ITALY
Hospital William Soler La Habana, CUBA

4 minute DISCUSSION

08:24  50  O
DIAGNOSTIC LAPAROSCOPY WITH PLANNED APPENDECTOMY:
AN INTEGRAL STEP IN THE EVALUATION
OF UNEXPLAINED RIGHT LOWER QUADRANT PAIN
J.M. DeCou, J.T. Boyle, M.W.L. Gauderer, J.A. Green, R.S. Abrams
The Children's Hospital
Greenville, SC USA

4 minute DISCUSSION
ABSTRACTS

RÉSUMÉS

ABBREVIATIONS

O   original 8 minute paper
R   resident's paper
C   4 minute case/technique report
O,R  Adjudicated
C   Not adjudicated
1. Session One Saturday 08:00 O R

JEJUNOILEAL ATRESIAS AND ASSOCIATED MALFORMATIONS
A CORRELATION WITH TIMING OF IN-UTERO INSULT

B. Sweeney, R. Surana, P. Puri
Children's Research Centre, Our Lady's Hospital for Sick Children
Crumlin, Dublin 12, IRELAND

Background/Purpose: Duodenal atresia is associated with higher incidence of associated malformations than jejunoileal atresias supporting the hypothesis that the duodenal obstruction occurs early in fetal life. In this study we analysed the incidence of major associated malformations in jejunal atresia (JA) and ileal atresia (IA) to determine if there is positive correlation between the proximity of the intestinal atresia and the association of other major anomalies.

Methods: Records of all patients with jejunoileal atresias treated at our institution between 1980 and 1997 were examined.

Results: There were 83 patients with jejunoileal atresias, 38 with JA and 45 with IA. Sixteen (42%) of the JA patients had an associated major congenital malformation, whereas only one (2%) of the IA patients had associated malformations. A single atresia was found in 18 (47%) of JA patients and 41 (91%) of IA patients. Twenty (53%) of the JA patients had either multiple or apple-peel atresia. Thirteen patients (16%) died, 11 with JA and 2 with IA. Of the 11 patients with JA who died, 6 had multiple atresias, 4 had cystic fibrosis and 1 had small bowel volvulus.

Conclusions: The higher rate of associated major congenital malformation in JA patients suggests that JA occurs in early fetal life.

Sponsoring CAPS member: Dr. Salam Yazbeck
Senior author:
Mr. Prem Puri
Children's Research Centre
Our Lady's Hospital for Sick Children
Crumlin, Dublin 12, IRELAND
Phone: (353) 1 4096420 Fax (353) 1 4550201
E-mail: ppuri@crumlin.ucd.ie
MINIMAL INTERVENTION, NO GENERAL ANAESTHETIC(GA) REDUCTION OF GASTROCHISIS ALLOWS EARLIER ESTABLISHMENT OF ENTERAL FEEDS AND EARLIER DISCHARGE

C.N. Radhakrishnan, A. Dickson, A. Bianchi
Surgical Neonatal Unit, St. Mary's Hospital
Manchester, UNITED KINGDOM

Purpose: To determine whether minimal intervention, no general anaesthetic (GA) approach to the reduction of gastrochisis, allows earlier establishment of enteral feeds, and therefore a shorter duration on TPN and early discharge.

Methods: Eighteen patients who underwent a minimal intervention, no GA reduction of gastrochisis reduction were included in the study. These patients underwent reduction of the gastrochisis on the unit without any anaesthesia. Following the reduction early establishment of enteral feeds was encouraged. Our current policy in these patients is to avoid the insertion of central lines and the use of Total Parenteral Nutrition (TPN) whenever possible. A retrospective review of the clinical notes was done and data compiled. This was compared with the results of another study carried out by Driver et al (personal communication) on one hundred and three cases of gastrochisis admitted to the same unit where reduction was carried out in the operating theatre under GA.

Results: Of the eighteen patients eleven were female and seven were males. The reduction was done between three and ten hours after birth (mean 4.5 hours). The time taken to establish full feeds ranged from nine to thirty seven days (mean 16.1, median 15). In the review by Driver et al the median time to full feeds was 22.5 days. The duration on TPN was 12.2 days in the study group and four of the patients did not receive any TPN at all. All patients were discharged two to three days after establishment of full feeds. In comparison the mean time to establish full enteral feeds in those who underwent reduction under a General Anaesthetic was 22.5 days

Conclusions: The results from this small group suggest that this method of reduction of gastrochisis is associated with earlier establishment of bowel function and consequently a reduction in the duration on TPN and earlier discharge.

Sponsoring CAPS member: Dr. Agostino Pierro
Senior author:
Dr. A. Bianchi
Neo-Natal Unit, St, Mary's Hospital
Oxford Road
Manchester m13 9WL UNITED KINGDOM
Phone:0044 161 2766452Fax: 0044 161 2766854
PRIMARY PERITONEAL DRAINAGE FOR INCREASING VENTILATORY REQUIREMENTS IN CRITICALLY ILL NEONATES WITH NECROTIZING ENTEROCOLITIS

A. Dzakovic, D.M. Notrica, D.E. Weston, T. Jaksic
Texas Children's Hospital, Houston TX USA
Boston Children's Hospital, Boston, MA USA

Purpose: Primary peritoneal drainage (PPD) is an established therapy for premature neonates with necrotizing enterocolitis (NEC) and free intraperitoneal air. This study seeks to evaluate the efficacy of PPD in ill premature neonates with severe abdominal distention and increasing ventilatory requirements without free intraperitoneal air.

Methods: Eleven neonates (gestational age 27±0.59 (±S.E.) weeks, age 25±4.3 days, birthweight 862±67 g) with NEC underwent bedside PPD under local anaesthesia for rapid clinical deterioration characterized by severe abdominal distension and increasing ventilatory requirements. None showed radiographic evidence of free intraperitoneal air. Mean airway pressure (MAP) and oxygenation-index (OI) were analyzed 24 hours before, immediately prior to and 24 hours after surgery. The patients were followed to discharge from hospital. Statistical analyses were performed using ANOVA for repeated measures.

Results: MAP showed a significant difference (P<0.05) increasing from 7.1±0.75 24-hours before surgery to 11±1.3 immediately prior to surgery and decreasing to 9.9±1.1 24-hours after drainage. Likewise, OI measured at the same time intervals showed significant differences (P<0.05) deteriorating from 5±1.2 to 26±6.9 then improving to 13±3.5. A significant quadratic effect (P<0.03) was evident for OI (i.e. values significantly rose then fell). There were six 30-day survivors (55%) and three survived to discharge (27%). Of the long-term survivors, two required operative fistula closure and one needed no further surgery.

Conclusion: Bedside PPD for increasing ventilatory requirements and abdominal distension in critically ill neonates with non-perforated NEC is a simple technique that offers rapid stabilization though ultimate mortality remains high.

Senior Author:
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Fegan 3
Boston Children's Hospital
300 Longwood Ave
Boston MA, 02115
Phone: 617-355-8268 Fax: 617-730-0310
E-mail: tom.jaksic@tch.harvard.edu
THE CLINICAL SIGNIFICANCE OF THROMBOCYTOPAENIA IN NEONATES WITH NECROTIZING ENTEROCOLITIS (NEC)

M. Vezeridis, E.M. Kiely, T. L. Spitz, D.P. Drake, A. Pierro
Institute of Child Health and Great Ormond Street Hospital for Children
London UNITED KINGDOM

Purpose: To characterise the clinical significance of thrombocytopenia in the management of neonates with NEC.

Methods: We reviewed 64 consecutive neonates with advanced NEC (Bell's stages II or III) treated between 1995 and 1998 (median birth weight 1540 g range 550-4270; gestational age 31 weeks range 23-41; postnatal age 13 days range 1-62). 24 neonates (37%) were below 1000 g. NEC was classified as isolated, multifocal or panintestinal. Severe thrombocytopenia was defined as platelet count < 100x10⁹/L. Rapid fall in platelet count was defined as fall >150x10⁹/L within 24 hours to a level < 100x10⁹/L.

Results: Figures report the recorded lowest platelet count. The greater the extent of the disease, the lower the platelet count. None of the patients with platelet count >100x10⁹/L died. In predicting intestinal gangrene severe thrombocytopenia has a sensitivity of 68%, specificity of 60% and positive predictive value of 89%; rapid fall in platelet count has a sensitivity of 32%, specificity of 89% and positive predictive value of 92%.

Conclusions: Thrombocytopenia and/or rapid fall in platelets represents poor prognostic factors. Monitoring the platelet count is useful; however it cannot be used in isolation to predict extent of disease or survival.

Senior author:
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Surgery Unit Institute of Child Health
30 Guilford Street
London WC1N 1EH UNITED KINGDOM
Phone: 44(0)20 7905 2641 Fax: 44(0)20 7404 6181
E-mail: a.pierro@ich.ucl.ac.uk
5. **Session One**  Saturday  08:48  0

**ALTERED NITRIC OXIDE (NO) PRODUCTION IN PREMATURE GUT MAY INCREASE SUSCEPTIBILITY TO INTESTINAL DAMAGE IN NECROTIZING ENTEROCOLITIS (NEC)**

M. Di Lorenzo, A. Krantis  
Hôpital Sainte-Justine, University of Montreal, Montreal (Quebec) CANADA  
Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa (Ontario) CANADA

Nitric oxide (NO) mediates enteric smooth muscle relaxation and mucosal protection. We have identified an ontogenically determined pattern of enteric NO neural maturation which may render the distal gut of premature piglets susceptible to injury.  

**Methods:** NO synthase (cNOS and iNOS) activities were measured in the developing piglet gut wall and compared to gut from an intraluminal model of necrotizing enterocolitis (NEC) at different times.  

**Results:** In premature animals, iNOS activity was significantly higher 3 hours after NEC induction compared to similarly treated 3 day old piglets. iNOS levels continued to rise 6 hours after NEC induction in prematures. Premature animals (labour induced by prostaglandins), failed to demonstrate such a rise in iNOS. In 3 day olds, iNOS levels increased significantly 16 hours after injury compared to the 3 hour group.  

**Conclusions:** iNOS production increases in premature piglets with NEC compared to term NEC animals, and continues to rise in the presence of intestinal damage regardless of developmental status. Maternal administration of prostaglandins attenuates this rise in iNOS activity. Elevated NO production in premature gut may contribute to increased susceptibility to damage in NEC.

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NON SURGICAL NECROTIZING ENTEROCOLITIS(NEC) MODEL IN THE NEWBORN PIGLET USING 2,5 DINITROBENZENE SULFONIC ACID (DNBS)

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Background/purpose: No previous animal models have facilitated early diagnosis of NEC. The objective was to create a non-surgical, acute inflammatory NEC model that will enable early diagnostic modalities (SPECT imaging).

Methods: Seventy-two newborn piglets were divided into four groups: Low dose (DNBS/Ethanol 240mg/kg), High dose (DNBS/Ethanol 480mg/kg), 50% Ethanol, and distilled water. Animals were euthanized at 12, 48 and 72h. The involved segment of colon was subjected to gross, histological and MPO analysis.

Results: No pathology was detected in the distilled water group. Grossly, the ethanol group displayed hyperemia at 12h versus no pathology at t=48 to t=72h. Histologically, ethanol induced a mild inflammation to t=48h with resolution by t=72h. The low treatment group triggered an acute response from t=12h to t=72h, with variation in the degree of gross involvement (moderate erythema to extensive bowel thickening and inflammatory debris). Histologically, the low group revealed consistent moderate/mark phlegmonous inflammation at all time intervals. Grossly the high group displayed bowel thickening, erythema and inflammatory debris from t=12h to t=72h -- correlating with histological findings of moderate/mark inflammation. MPO analysis showed most activity in the high group.

Conclusions: The DNBS/Ethanol, non-surgical, model can be used to study the mild and moderate/mark acute inflammatory phases of NEC.

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PITFALLS IN THE RADIOLOGICAL DIAGNOSIS
OF INTESTINAL MALRODUCTION

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Purpose: To evaluate clinical findings, which result in a false positive radiological diagnosis of intestinal malrotation. The various landmarks that need to be assessed in an upper gastrointestinal (UGI) study for suspected midgut malrotation, as well as normal variants in duodenal appearance are highlighted.

Method: A retrospective review was done of the charts of all patients who underwent surgery at our hospital, between the years 1996 - 1999, for a presumed diagnosis of midgut malrotation. The UGI studies of the false positive cases were reviewed by a second radiologist who was unaware of the operative findings.

Results: There were 18 cases identified over the study period. Four of these 18 (22%), had a false positive radiological diagnosis of malrotation. Retrospective review of the charts and of the UGI study of these children showed a redundant C-loop in 1 child, a low-lying duodenojejunal junction (DJJ) in 2 children, and an obstructing meconium plug that resulted in a downward displacement of the DJJ in the fourth.

Conclusion: An UGI study may show an abnormal appearing duodenum in the absence of midgut malrotation. This may be due to displacement of the duodenum by chronically distended stomach or large bowel, mass effect in the left upper quadrant, or laxity of the ligament of Treitz secondary to malnutrition. In atypical presentations, particularly in children with developmental disorders, failure to thrive and chronic intestinal disease, the surgeon needs to review the UGI carefully with the radiologist. Additional studies such as duplex ultrasound or barium enema may help reduce unnecessary surgical explorations.

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GLUCAGON-LIKE PEPTIDE MODULATES INTESTINAL ADAPTATION FOLLOWING RESECTION

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Background/Purpose: Glucagon-like peptide 2 (GLP-2) is trophic for the small bowel; it is released distally in response to luminal nutrients. This study tests the hypothesis that distal small bowel and cecal resection would decrease GLP-2 levels and impair adaptation.

Methods: Male rats underwent either ileal transection (controls) or resection of the ileum and cecum, leaving either 10 or 20 cm jejunum. Animals were followed up to 21 days, with daily weights. Endpoints were serum GLP-2 levels, histology and in vivo absorption of 3-O methylglucose, which reflects active nutrient transport capacity.

Results:

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Maximum % weight loss*</th>
<th>Average Villous Height μm*</th>
<th>GLP-2 levels*</th>
<th>3-O mg absorption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control: ileal transection</td>
<td>10</td>
<td>-6 ± 3</td>
<td>671 ± 23</td>
<td>0.8 ± 0.1</td>
<td>60.3 ± 12.1</td>
</tr>
<tr>
<td>10cm jejunal remnant</td>
<td>9</td>
<td>-29 ± 9*</td>
<td>978 ± 127*</td>
<td>1.64 ± 1.25†</td>
<td>32 ± 6.3*</td>
</tr>
<tr>
<td>20cm jejunal remnant</td>
<td>11</td>
<td>-12 ± 6*</td>
<td>935 ± 123*</td>
<td>1.42 ± 0.77†</td>
<td>52 ± 7.8*</td>
</tr>
</tbody>
</table>

Data: mean ± SD. *p<0.01 vs controls †p<0.05 vs controls

Conclusion: Unexpectedly, animals with distal resection had an increase in GLP-2 levels, with the highest levels noted in the shortest bowel animals suggesting that colonic L cells up-regulate GLP-2. GLP-2 levels were correlated with morphological adaptation, however, this was not sufficient to correct the nutrient transport deficit. These results suggest that GLP-2 is an important factor controlling adaptation.

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IN VIVO MEASUREMENT OF INTESTINAL ABSORPTION USING 3-0 METHYLGLOUCOSE IN SHORT BOWEL SYNDROME

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Background/Purpose: Present methods of evaluating absorption capacity of patients with short bowel syndrome are poor. Our hypothesis is the active absorption of 3-0 methylglucose (3-0 MG) and its urinary recovery correlates with dietary carbohydrate absorption and in vitro glucose transport.

Method: Male Sprague Dawley rats underwent a 90% proximal small bowel resection or sham resection (n=6 in each group). Animals were pair fed, weighed and followed for 14 days. A 3-day balance study was done, measuring feed intake and fecal output for percentages of fat and energy absorption. Animals were gavaged with 3-0 MG/mannitol solution and 4-hour urinary recovery of 3-0 MG was measured. Animals were then sacrificed, sections of intestine taken for morphology and in vitro assessment of glucose transport.

Results:

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>14 day Wt gain (%)</th>
<th>CHO Absorption (%)</th>
<th>Urinary 3-0 Mg Recovery %</th>
<th>3-0Mg Chamber Fluxes</th>
<th>Delta ISC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resection</td>
<td>6</td>
<td>8.5 ± 7.5</td>
<td>83.6 ± 2.0*</td>
<td>35.8 ± 17*</td>
<td>0.37 ± 0.24</td>
<td>14.6 ± 6.9*</td>
</tr>
<tr>
<td>Transection</td>
<td>6</td>
<td>10.8 ± 6.68</td>
<td>87.2 ± 0.7</td>
<td>62.9 ± 10.5</td>
<td>0.47 ± 0.25</td>
<td>28.9 ± 11.2*</td>
</tr>
</tbody>
</table>

Data: mean ± SD. *p<0.05 vs transaction by Student's t-test. 3-0 MG flux = ClMg/cm²/hour, ISC = mA/cm²

Conclusion: These results show that urinary recovery of 3-0 MG may be useful to assess carbohydrate absorption and in vitro transport characteristics of intestine.

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INTESTINAL TRANSPLANTATION: THE CURRENT PEDIATRIC EXPERIENCE

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Intestinal transplantation (SBT) is an evolving procedure. To determine recent progress and the challenges that remain, we reviewed data from the International Transplant Registry (ITR) and the Canadian pediatric experience.

Results: The ITR database includes 443 patients, with 290 children. Volvulus: 22%, gastroschisis 22%, motility disorders 18% necrotizing enterocolitis 12%, atresia 9%, and mucosal abnormalities 9% were the most common pediatric indications. The grafts included the intestine alone (SIT) 45%; the intestine/liver liver (SB/L) 40%; and multivisceral (MV) 15%. One-year graft/patient survival rates for all transplants after 1995 was 57%/65% for SIT; 62%/66% for SB/L; and 52%/52% for MV. Graft failure and death were usually due to sepsis or rejection. Thirteen SBT have been performed in Canadian children in the tacrolimus era (11 London; 2 Toronto). The death rate on the waiting list has exceeded 50%. The two-year survival rate is 54% (SIT: 4/6; SB/L 2/4; MV: 1/3). The successful recipients have resumed oral diets and normal lives.

Conclusions: Successful SBT allows children with intestinal failure to resume normal oral nutrition. The use of ABO-compatible and reduced-size grafts are potential options to reduce the waiting list mortality. Better immune suppression is needed to become the standard of care.

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MASSIVE BOWEL RESECTION: THIRTY-TWO YEARS LATER

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In August 1968, an eight year old boy was admitted in shock with an acute abdominal catastrophe. After fluid resuscitation, laparotomy revealed volvulus of the small bowel, with most of the small bowel necrotic. Excision was carried out leaving 19 inches of jejunum and 3 inches of ileum. In the absence of parenteral nutrition, he did surprisingly well. He was readmitted several times over the next few years for fluid losses and convulsions. At the age of twenty-two he was operated on for another bout of volvulus, however no resection was necessary. Over the next years he visited the emergency wards of various hospitals about two times a year. Each time he would tell unbelieving doctors what his electrolyte imbalance consisted of. If he felt tingling in his calf or foot he told them that he was low in Magnesium, if strong muscle cramps it was Calcium; and if he felt severe fatigue it was potassium. To the amazement of the medical staff he was invariably right! The patient re-entered the author’s life last year when he was invited to a book launching of a novel dedicated to his parents and his childhood surgeon.

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12. Session Two    Saturday    13:30    OR

PEDIATRIC TRAUMA REGISTRIES: THE FOUNDATION OF QUALITY CARE

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Background/Purpose: Traumatic injuries cause substantial morbidity and mortality in children. Trauma registries are essential to assess and establish the standards of trauma care. An interprovincial study of pediatric trauma in six centres across Canada using identical software components was completed. Methods: Data was collected from April 1, 1995 to December 31, 1998 for children aged 1 day to 17 years with an ISS ≥ 12. Cause of injury, injury time and day, gender, age, injury scores, length of hospital stay, and outcomes were compared. Results: 1276 patients were included. Mean age was 10.3 ± 5.6 years. Motor vehicle collisions were the most common mechanism of injury (56%). Males were more often injured (p<0.04). Injuries occurred mainly between 16h00-24h00 (p<0.0001). Mean hospital stay was 11.5 ± 16.6 days. The longest stays in hospital were among those who had an abdominal AIS of 1 (p<0.03). Differences existed in discharge placement between hospitals (p<0.0001). Patients with similar injury severities remained twice as long in our hospital as compared to patients in Hospital 3 (p<0.0001).

Conclusions: This study was the first to compare pediatric patients in multiple Canadian centres using identical trauma registries. Variations in length of stay and discharge placements between hospitals were identified. Further analysis of data in the registries may allow us to clarify these differences and serve as a foundation for hospitals to improve the quality of patient care.

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MECHANISM OF PEDIATRIC TRAUMA DEATHS IN CANADA AND THE UNITED STATES: THE ROLE OF FIREARMS

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Purpose: Trauma is the commonest cause of death in children. Twenty percent of American households contain firearms, compared to less than one percent of Canadian households. We wished to determine whether firearms are a more prevalent cause of death in the US than in Canada.

Methods: All trauma patients (< 17 years) at a major US and a major Canadian children’s hospital (1983 -1996) were reviewed. Coroner’s statistics from both centers were also surveyed for deaths occurring outside the children’s hospital, so that data from both centres were population based. In the Canadian cohort, City and Provincial statistics were used, and in the US cohort only City data were available.

Results: In the Canadian cohort, there were 101 pediatric trauma deaths City-wide, and 1,146 Province-wide. There were no firearm deaths in the City (0%), and six in the Province (0.5%). In the US cohort of 394 children, firearms were the commonest cause of pediatric trauma death, accounting for 34.5% City-wide.

Conclusions: The proportion of children dying from firearms is several orders of magnitude higher in the US than in Canada. This likely reflects differing attitudes and legislation towards gun control, and provides a rationale for prevention and for future investigation.

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CORRELATION BETWEEN PARENTAL PERCEPTION AND ACTUAL CHILDHOOD PATTERNS OF BICYCLE HELMET USE AND RIDING PRACTICES: IMPLICATIONS FOR DESIGNING INJURY PREVENTION STRATEGIES

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Background/Purpose: Bicycle injuries account for ten percent of all pediatric traumatic deaths. Bicycle helmets have proven to decrease morbidity and mortality, yet trauma data demonstrates low helmet use among injured children. However, owning a bicycle helmet does not universally result in a child wearing a helmet. Furthermore, we hypothesize that parental perception of their children’s use of the bicycle helmet may not accurately reflect true utilization by their child. In order to investigate this hypothesis we examine both parents’ and their children’s reports of bicycle ownership, supervision, riding patterns and helmet use.

Methods: A random sample of grade five and six students (ages 8 – 12) and their parents were surveyed about bicycle ownership, riding patterns, supervision and helmet use. The children and their guardians responded independently to the questionnaire. Statistical analysis was performed using the chi-squared test when indicated.

Results: 88 of 102 children (86%) responded. This represented 56% females and 44% males aged 8-12. 69/90 (77%) of the parents mailed in the survey. 96% of the children owned bicycle. 87.5% of children owned a bicycle helmet. Eighty percent of the time children ride their bicycles on the road or sidewalk with less than twenty percent on marked trails or parks. Parents reported that their children wear a helmet 90% of the time. In contrast children report no helmet use in up to 61% of riding instances. (P<0.05 chi sq.) Parents themselves do not wear a helmet in greater than 60% when riding, which is correlated by their children. 71% of the children report that the majority of the time they are riding it is unsupervised.

Conclusions: Bicycle and bicycle helmet ownership is high among this study group. There is a significant possibility that children will ride unsupervised, in at risk situations, without wearing a helmet. Parent perceptions about bicycle helmet use by their children may not accurately reflect true utilization. In this study group parents appear as poor role models for their children. Injury prevention strategies need to focus on children and adults to improve effectiveness.

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15. Session Two    Saturday    14:06    O R

FARM ACCIDENTS IN CHILDREN - A TEN-YEAR REVIEW

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Purpose: To review accidental injuries to children on farms.
Methods: Between January 1988 and December 1999, all childhood farm injuries referred to a trauma center were reviewed.
Results: 39 children under 19 years were identified. Mean age was 7.4 years. Male to female ratio was 2.5:1 25/39, (64%) survived. 14/39 died. The mechanism of injury was tractors-15 (38%), animals-11(28%), other machinery-9(23%), falls-3(8%) and burns-1(3%). 12 deaths involved tractors (86%) and 2 involved animals (14%). 26/39 (67%) of accidents occurred between June and October. 22/39 (56%) occurred between 1pm and 6pm. 11 survivors (28%) and 9 fatalities (64%) were supervised. Predominant injuries were orthopedic-25/39 (64%), neurological-19/39 (49%), and thoracoabdominal-8/39 (20%). 18 (46%) underwent orthopedic surgery. 6 (15%) had longterm disability.
Conclusion: This review identifies areas to focus education and prevention efforts.

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RURAL PEDIATRIC TRAUMA:
VALUE OF POPULATION-BASED MORTALITY STATISTICS

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Background. Development and maintenance of an effective regional trauma care system mandates on-going assessment of those at risk, patterns of injury and types of resources available. It is known that a significantly higher injury and traumatic death rate exists for children in a rural environment. There is also evidence to support improved outcomes for children treated at verified trauma centers versus those not meeting such standards. While many still rely on practice-based statistics, we postulate that population-based statistics are much more reflective as to what is actually happening and provide crucial information without which significant improvements could not be achieved.

Methods. All pediatric traumatic deaths (children 18 and younger) at a rural pediatric trauma center from 1990 to 1998 were reviewed and compared to trauma mortality within the center's 13 county primary catchment region (office of vital statistics). ICD-9 codes >800 were included. Nonresident and those fatalities occurring outside of the primary region were excluded. Practice-based and population-based data for incidence, age, sex, location, mode of transport and level of care were examined. Descriptive statistics and chi-squared analysis were used when appropriate.

Results. Between 1990-98, 1319 pediatric deaths were recorded. With 869 occurred in neonatal period. Of the remaining 450, 217 (48%) deaths in children 18 and under were due to trauma. Only 49 (22%) were transported to the trauma center. Males out-numbered females 143 to 74. The 15-18 year olds accounted for the largest number of deaths. (107, 49%). Overall incidence of mortality due to trauma was 25.3/100000 (+/-2.7 SEM). 119 (55%) died at the scene. Motor vehicle crashes accounted for 121 (56%) deaths. The likelihood of a child who initially survived, of being transferred to the pediatric trauma center was age dependent. 70% of children ≤4 who reached a hospital alive were treated at the trauma center versus only 36% of those between 15-18 (p<0.05)

Conclusion. Mortality from rural pediatric trauma is higher than reported from urban environments. Population-based statistics more accurately reflect the true impact of what is actually happening in a given rural region. Age appears to be an important factor in determining which children are transferred to the trauma center and may represent a critical factor in outcome.

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SPINAL FRACTURES AND ABDOMINAL INJURIES: A CAVEAT

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Background: The goal of the present study was to evaluate the risk of intra-abdominal injury in children who sustained spinal fractures in a motor vehicle collision (MVC). Between 1980 and 1999 forty-eight patients, 24 girls and 24 boys, with a mean age of 12.8 yrs (range 4-17) were reviewed. Twenty-nine were rear seat passengers, 12 front seat and in 7 unknown. Fifty-eight percent wore a seat belt. Thirty fractures involved the lumbar spine, 12 the thoracic and 6 combined. CT scan, abdominal ultrasound and peritoneal lavage were used to screen for abdominal injuries.

Results: Twenty-two of 48 patients had an intra-abdominal injury. Eighteen (38%) required an early (<24 hr) (n=12) or delayed (n=6) therapeutic laparotomy. Fourteen patients were rear seat passengers, 15 wore a seat belt and 13 had an abdominal wall ecchymosis(AWE). There were 17 lumbar fractures (9 Chance) and one thoracic. The most common findings at laparotomy were intestinal perforation (12), mesenteric tear (9), and solid organ injury (8). Seventy-two percent of patients presenting with a lumbar fracture and AWE needed a therapeutic laparotomy. The overall survival was 94% with only one death. The mean hospital stay was 22.4 days.

Conclusion: In this study, 38% of patients presenting a spinal fracture required laparotomy, 72% of whom had simultaneous lumbar fracture and AWE. In the light of these results, we propose that laparoscopy or laparotomy should be strongly considered in patients sustaining lumbar fracture and AWE after MVC.

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LONGTERM OUTCOME AFTER MONOPERATIVE MANAGEMENT OF COMPLETE TRAUMATIC PANCREATIC TRANSECTION IN CHILDREN

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Purpose: The treatment of complete pancreatic transection (CPT) from blunt trauma remains controversial. To determine the natural history and long-term outcome of nonoperative management of CPT, we analyzed all such patients over the last 10 years at a Level I trauma center.

Methods: Summary of Patient Profile (*median with range)

<table>
<thead>
<tr>
<th>Age: 8 yrs (4-16)</th>
<th>ISS: 25* (25-50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreas Transection: 1 Head, 6 Neck, 1 Body, 1 Tail</td>
<td></td>
</tr>
<tr>
<td>Complications: 4 Pseudocysts, 2 Line Sepsis, 2</td>
<td></td>
</tr>
<tr>
<td>Procedures: 4 Percutaneous drainage of fluid, 1 Splenectomy</td>
<td></td>
</tr>
<tr>
<td>Pleural effusions</td>
<td></td>
</tr>
<tr>
<td>Length of Hospitalization: 24* days (6-52)</td>
<td></td>
</tr>
<tr>
<td>Time to Clinically Well: 2* mo (1-3,5)</td>
<td></td>
</tr>
<tr>
<td>Clinical Outcome: Diabetes 0/9, Malabsorption 0/9, Pain 1/9</td>
<td></td>
</tr>
<tr>
<td>Length of Follow-Up: 47* mo (7-102)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: Pancreatic transection is rare and is commonly found in isolation of other major abdominal injuries. No patients required surgery for their pancreatic transection. Pseudocysts can be effectively managed with percutaneous drainage. After a median follow-up of 47 months, no patients developed endocrine or exocrine dysfunction. Anatomically, the distal body and tail usually atrophies, however, occasionally the gland can heal and recanalize. To our knowledge, this is the first report to demonstrate the effectiveness of nonoperative management after complete pancreatic transection.

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REPORTING SURVIVAL WITH CONGENITAL DIAPHRAGMATIC HERNIA (CDH)

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Introduction: Reports of survival with CDH can emphasize encouraging outcomes or, alternatively, continuing poor outcome. In part, this is due to variations in inclusion criteria in different reports. We reviewed our experience for the period 1980 to 1997 to determine the impact of various inclusion criteria on the conclusions drawn.

Methods: Data were retrieved from the provincial newborn database, the provincial anomaly database, and charts of CDH patients managed surgically for the period 1980-1997. Information included termination of pregnancy (TOP), intrauterine fetal demise (IUF D), neonatal death (NND), and surgical outcome.

Results: 79 cases of CDH were identified. There were 9 TOPs, 8 IUDs, 30 NNDs, and 32 patients underwent surgical repair, 26 of whom survived (81%). The overall survival rate was 33%. When TOP and IUF D cases were excluded, the survival rate was 42%.

Conclusion: Although the outcome of CDH patients managed surgically was encouraging (81%), the overall survival was low (33%). Reports concerning outcome of CDH patients therefore must be interpreted carefully, especially when used to defend or reject management initiatives.

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STRUCTURAL IMMATUREITY OF THE HEART IN CONGENITAL DIAPHRAGMATIC HERNIA IN RATS

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Background/Purpose: Extracellular matrix (ECM) plays a significant role in the development of the heart. The aim of this study was to evaluate the expression of important ECM components in the heart of rats with induced congenital diaphragmatic hernia (CDH), to test the hypothesis that an alteration of ECM may contribute to the cardiac maldevelopment, which has been recently identified as a contributory factor for the high mortality rate in babies with CDH.

Methods: CDH model (n=10) was induced in pregnant rats following administration of 100 mg of nitrofen on day 9.5 of gestation (term 22 day). In control animals (n=10) the same dose of olive oil was given without nitrofen. Cesarean section was performed on day 21 of gestation. RT-PCR was performed to evaluate the relative amount of tropoelastin and procollagen mRNA expression in the heart. Elastin protein content was measured using ELISA.

Results: There was a significant reduction in tropoelastin mRNA (p<0.05 and procollagen mRNA (p<0.05 in CDH heart compared to controls. The cardiac α-elastin content was also reduced in CDEH (p<0.01).

Conclusion: The reduced cardiac tropoelastin and procollagen gene expression and the reduced α-elastin content indicate that the heart in CDH is structurally immature. The reduced production of cardiac ECM may contribute to a contractile dysfunction, making the heart unable to respond to hemodynamic load accompanying persistent pulmonary hypertension (PPH).
21. Session Three  Saturday  15:54  OR

PULMONARY ARTERY REMODELING AFTER REVERSIBLE TRACHEAL OCCLUSION IN DIAPHRAGMATIC HERNIA

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Purpose: Congenital diaphragmatic hernia (CDH) is associated with lung hypoplasia and thickened pulmonary arteries (PA) contributing to pulmonary hypertension. We aimed to study the effect of reversible tracheal occlusion (TO) on lung morphometry and PA structure in a hypoplastic lung model.

Methods: A left sided CDH was created in fetal lambs at 80 d gestation; TO was done at 108 d; and release of the occlusion (TR) at 129 d. At 136 d (term=145 d), the fetus was delivered by caesarian. CDH(n=7), CDH+TO(N=6), cdh+tr(N=6), and unoperated controls(N=6) were compared. Outcome measurements were: 1. Lung growth=lung weight to body weight ratio (LW/BW) 2. Structural maturity is assessed by the mean terminal bronchiole density (MTBD) 3. PA medial and adventitial areas (μm²) 4. lung capillary load=vessel surface area (SA) to tissue sa ratio.

Results: Data is mean ±SEM, and using ANOVA with Duncan post-hoc testing, ≠=different from control, p<0.05; *=different from CDH, p<0.05. Differences were seen in small Pas with a diameter<75 μm:

<table>
<thead>
<tr>
<th></th>
<th>LW/BW%</th>
<th>MTBD</th>
<th>PA Medial Area</th>
<th>PA Adventitial Area</th>
<th>Capilllary Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDH</td>
<td>1.26+/−0.011#</td>
<td>6.88+/−0.54#</td>
<td>1365+/−101#</td>
<td>4996+/−493#</td>
<td>10.08+/−1.01</td>
</tr>
<tr>
<td>CDH+TO</td>
<td>2.26+/−0.39*#</td>
<td>2.33+/−0.32*</td>
<td>1265+/−52</td>
<td>4487+/−274*</td>
<td>9.61+/−1.10</td>
</tr>
<tr>
<td>CDH+TO+TR</td>
<td>2.03+/−0.26*#</td>
<td>2.79+/−0.15*</td>
<td>1336+/−63#</td>
<td>5304+/−289#</td>
<td>11.18+/−1.46</td>
</tr>
<tr>
<td>Control</td>
<td>2.96+/−0.11*</td>
<td>2.81+/−0.15*</td>
<td>1124+/−34*</td>
<td>3139+/−163*</td>
<td>11.02+/−1.07</td>
</tr>
</tbody>
</table>

Conclusions: TO may be especially important for PA remodeling in the latter part of gestation, as TR one week before delivery prevents thinning of the small Pas in CDH. The shaping achieved by TO in terms of lung growth, structural maturity, and pulmonary artery medial area thinning may prove beneficial in lessening the severity of the associated pulmonary hypertension in CDH.

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OUTCOME OF ANTENATALLY SUSPECTED CONGENITAL CYSTIC ADENOMATOID MALFORMATION OF THE LUNG (CAML)

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Aim: Aim of study was to follow the natural history of antenatally diagnosed CAML.
Method: All patients with an antenatal diagnosis of CAML between July 1994 to June 1998 were included in the study.
Results: 37 babies were antenatally diagnosed to have CAML. 8 had Hydrops which did not resolve and they were aborted because of intra-uterine death. 29 were born alive, of these 4 patients showed signs of acute respiratory distress at birth, all of them required surgery in the neonatal period. 9 other patients were operated at a later stage for respiratory complications or large cysts within the CAML, 1 of them turned out to have congenital lobar emphysema. The diagnosis was proven to be wrong in 3 other patients, 2 sequestrations and 1 patient with a duplication cyst of the oesophagus and stomach. Among the 4 patients operated in the neonatal period one died postoperative. This child had a very large lesion occupying whole of the left side of chest with mediastinal shift to the right. Rest of the patients are under our follow up. In 3 patients the lesion is not visible on imaging.
Conclusion: 8 (22%) of the children with antenatal diagnosis of CAML died in utero. Of the live born a small percentage will present acutely, requiring emergency surgery; for this reason we advise delivery near a Neonatal Surgical Service. Many of the antenatally suspected cases of CAML will require surgical intervention. The patients who are under our review will probably require surgery at an appropriate time.

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PULMONARY SEQUESTRATION REVISITED

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Purpose: Our goal was to identify the proportion of sequestrations that were atypical or associated with other entities, such as congenital cystic adenomatoid malformations (CAM), communicating bronchopulmonary foregut malformations (CBPFM), bronchogenic cyst (BC) and efferent duct syndrome.

Method: All charts of patients with pulmonary sequestration admitted at two children’s hospitals from 1982 to July 1999 were reviewed retrospectively. We included all anomalies with a systemic arterial supply or without bronchial connection. Results: As illustrated in the following table, only 22 of the 39 patients (56%) had a classic isolated extralobar (ELS) or intralobar sequestration (ILS), while the others presented with a spectrum of anomalies:

<table>
<thead>
<tr>
<th>(N)</th>
<th>ELS</th>
<th>CAM</th>
<th>CBPFM</th>
<th>Scimitar</th>
<th>B</th>
<th>C</th>
<th>Age at diagnosis, median(range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>1wk(2wks GA-Byrs)</td>
</tr>
<tr>
<td>8</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>6yrs (28wks GA-16yrs)</td>
</tr>
<tr>
<td>4</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>20wks GA (18wks GA-15yrs)</td>
</tr>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>34wks GA</td>
</tr>
<tr>
<td>3</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>1d (24wks GA-2yrs)</td>
</tr>
<tr>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>3d (31wks GA-6')</td>
</tr>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>8mos</td>
</tr>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓(bilateral)</td>
<td>✓</td>
<td></td>
<td></td>
<td>1wk</td>
</tr>
<tr>
<td>4</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>11mos (mo-2.5yrs)</td>
</tr>
<tr>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>1.5 yrs</td>
</tr>
</tbody>
</table>

Legend: Ectopic/Multiple—subdiaphragmatic, or intradiaphragmatic location/or more than one lesion in two different areas of the lung; GA=fetal gestational age

Conclusion: Sequestrations represent a spectrum of anomalies that overlap with other lung lesions. In order to facilitate management, they should be described according to their: 1. Connection to the tracheobronchial tree, 2. Visceral pleura, 3. Arterial supply, 4. Venous drainage, 5. Foregut communication, 6. Histology, and whether there are 7. Mixed/multiple lesions, and 8. Associated anomalies. Surgeons should be aware that approximately 50% of sequestrations could be atypical or associated with other anomalies. This should be kept in mind when weighing the benefits of resection versus conservative management of pulmonary sequestrations.

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ACUTE CHEST SYNDROME (ACS) AFTER LAPAROSCOPIC SURGERY IN CHILDREN WITH SICKLE CELL DISEASE (SCD)

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Background: ACS is the second most common reason for hospitalization and causes approximately 25% of deaths in patients with SCD. More procedures may be performed in asymptomatic patients because laparoscopy is believed to diminish the risk of sickle-related complications. To determine the incidence of ACS and assess for predisposing factors, we performed a retrospective analysis of all Sickle Cell patients undergoing surgery between 1994 and 1998.

Methods: Perioperative clinical and radiological data were examined and analyzed using Fisher's exact test or ANOVA where appropriate.

Results: Sixty-two procedures performed (35 abdominal and 27 extracavitary). All abdominal cases were cholecystectomy or splenectomy (22 laparoscopic and 13 open). ACS occurred in 7/62 (10.9%) overall and all were in abdominal cases (7/35). ACS occurred in 5/22 (22.7%) of laparoscopic cases and 2/13 (15.4%) of open cases. Operative time was significantly longer in the laparoscopic group (p<0.05). A higher percentage of patients who developed ACS had at least one previous episode (71.4% vs 39.3%) and a smaller percentage of ACS patients received a preoperative blood transfusion (14.3% vs 32.1%). Postoperative hospitalization was prolonged if ACS occurred (9±2 vs 3±2 days, p<0.05).

Conclusion: Abdominal surgery carries a significantly high risk (20%) of ACS. Laparoscopy does not decrease the incidence of ACS compared to open approach. Predisposing factors were not significant in predicting postoperative ACS. There is considerable morbidity and potential cost implications in patients who develop ACS.

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THE EFFECT OF POSTOPERATIVE FENTANYL ANALGESIA ON THERMOREGULATION IN NEONATES

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Juntendo University School of Medicine, Tokyo JAPAN

Background: Previous studies have shown that fentanyl analgesia can modulate body temperature.

Purpose: To characterise the effects of continuous postoperative fentanyl analgesia on body temperature in neonates.

Methods: We studied two groups of neonates aged less than two weeks. A) Fentanyl group (n=12) included neonates who received intravenous fentanyl analgesia for the first 24 hours postoperatively. B) Control group (n=10) included neonates who received no postoperative analgesia. All patients underwent major operation (operative stress score ≥ 6) in the first week of life and required mechanical ventilation postoperatively for at least 36 hours. Axillary temperature was measured at the following times: preoperatively, when patients returned to NICU after operation (time 0), postoperatively every 2 hours up to 24 hours. We also analysed temperature from the first 24 hours after termination of fentanyl analgesia.

Results: There were no significant differences in gestational age, postnatal age, body weight, duration of operation or operative stress score between two groups. The median axillary temperature is shown in figures.

Conclusion: Fentanyl analgesia was associated with reduction in postoperative body temperature. In addition we observed a return to preoperative temperature after cessation of fentanyl analgesia. These data have significant implications for the postoperative management of neonates.

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ADDITIONAL MEDICAL INFORMATION: PREVALENCE, SOURCE AND BENEFIT TO PARENTS

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Purpose: To characterise: 1) the source of additional medical information acquired by parents; 2) how much information is correctly interpreted and remembered.

Methods: Cross sectional prospective study of parents of 108 children with surgical diseases (parents median age 34 years range 18-54; children age 3 years range 0.01-16). 87 children (81%) had major surgical diseases. Parental knowledge was scored using a self appraisal (questionnaire) and objective evaluation (interview by independent investigator).

Results: Parents’ education varied from university degree (15%) to no educational qualification (15%). Additional medical information was obtained by 77% of the parents (63% from general practitioner; 46% from books; 31% from popular magazines; 24% from internet) and did not improve parental knowledge. This was more accurate in parents of children with major surgical diseases and in those with higher educational qualifications (p<0.05).

<table>
<thead>
<tr>
<th>Inadequate knowledge of</th>
<th>Illness</th>
<th>Treatment</th>
<th>Operative risk</th>
<th>Long-term outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self appraisal</td>
<td>0</td>
<td>0</td>
<td>9 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Objective evaluation</td>
<td>10 %</td>
<td>6 %</td>
<td>42 %</td>
<td>28 %</td>
</tr>
<tr>
<td>p (chi square test)</td>
<td>0.002</td>
<td>0.038</td>
<td>&lt;0.0001</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Conclusions: Parents commonly obtain additional medical information. However, this does not improve their understanding of operative risk and long-term problems. Parents’ perception of having adequate medical information is often incorrect.

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DIRECTED BLOOD DONATION IN PEDIATRIC GENERAL SURGERY: IS IT WORTH IT?

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Background: To date, there is no data to support the safety, efficacy and cost benefit ratio of donor directed blood donation (DD). The objectives were to determine whether a DD program in Pediatric General Surgery practice is justified.

Methods: A retrospective analysis of the transfusion practice and all DD requests received by Transfusion Services in a full calendar year (1997), at a tertiary care pediatric hospital. We examined the donations, utilization and possible benefits for the recipients.

Results:

| Total blood products Tx (units) | 22,527 | Reactive for T.D. | DD 1.2%, VD 0.47% |
| Gen Surg Tx (units) | 471 (2%) | Malaria Risk | DD 3.1%, VD 0.31% |
| Total DD Requests | 219 | High Risk Activity | DD 2.5%, VD 1.2% |
| Donations after Exclusions | 11/219 (5%) | Benefit | 28% exposure reduction |
| Gen Surg DD Requests | 133/219 (61%) | Total Utilization | 132/233 (56.7%) |
| | | Gen Surg Utilization 4/11 (36.4%) |

Tx (Transfusion), DD (Directed Donation), VD (Volunteer Donation), T.D. (Transmissible Disease)

Conclusions: DD deferral rates are higher than for volunteer donors for infectious disease markers, malaria and high-risk activities. There is no evidence that DD is safer than volunteer donation. Donor directed blood wastage of 63.6% is much higher than in volunteer donation (7%). Thirty-seven patients (28%) received multiple units from one donor suggesting a benefit from decreased donor exposure. Given the low frequency of transfusion and the poor utilization of DD in General Surgical practice, a DD program is not justified.

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FETAL ABDOMINAL MASSES: ANTE NATAL AND POSTNATAL COURSE

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University College Hospital, Fetal Medicines Unit, London UNITED KINGDOM

Purpose: To determine the diagnostic accuracy of ultrasonography for fetal abdominal masses and their outcome.


Results: 39 cases were ascertained (complete postnatal follow-up in 32). The lesions were cystic (30) and mixed solid/cystic (9). Median gestational age at diagnosis was 21 weeks range 15-37. Antenatal course: Antenatal diagnosis: retroperitoneal teratoma (4), hepatic cysts (1), pulmonary sequestration (1), no definitive diagnosis (33). In 5 cases (15%) there was spontaneous resolution of the lesion. Percutaneous aspiration was performed in 1 ovarian and 1 mesenteric cyst. There was one miscarriage (34 weeks multiple abnormalities).

Postnatal course: There was 1 postnatal death (pulmonary hypoplasia and associated anomalies). In 5 cases (15%) there was no intra-abdominal pathology. In 7 neonates the lesion disappeared or reduced in size. Surgery was performed for intestinal duplications (4), ovarian cysts (4), teratomas (3), mesenteric cyst (1). Three asymptomatic neonates with abdominal cysts were not operated.

Conclusion: Accurate antenatal diagnosis of fetal abdominal masses is difficult. The masses can disappear in utero (15%) or after birth (21%). Antenatal and postnatal mortality was 10% and neonatal surgery was required in one third of the cases.

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Clinical vs Sonographic Diagnosis of Acute Appendicitis in Children: A Comparison of Patient Characteristics and Outcomes

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Purpose: We conducted a large retrospective study to analyze the characteristics and outcomes of patients undergoing appendectomy after abdominal sonography.

Methods: The charts of 454 consecutive patients undergoing appendectomy for acute appendicitis between January 1, 1998 and December 4, 1999 were reviewed. Patients operated after clinical evaluation only were compared with patients operated after abdominal sonography.

Results: Results for continuous variables are expressed as mean ± SEM.

<table>
<thead>
<tr>
<th></th>
<th>Clinical Group</th>
<th>Sonography Group</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>263 (58%)</td>
<td>191 (42%)</td>
<td></td>
</tr>
<tr>
<td>Gender (% female)</td>
<td>38.4</td>
<td>51.8</td>
<td>.004</td>
</tr>
<tr>
<td>Symptom Duration (days)</td>
<td>1.63±0.1</td>
<td>2.23±1.8</td>
<td>.003</td>
</tr>
<tr>
<td>WBC at presentation</td>
<td>16.3±33</td>
<td>14.7±48</td>
<td>.007</td>
</tr>
<tr>
<td>Pre-Dx inpatient observation (%)</td>
<td>4.2</td>
<td>19.4</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>ER to OR duration (hours)</td>
<td>4.93±18</td>
<td>8.04±31</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Normal appendix (%)</td>
<td>5.7</td>
<td>13.1</td>
<td>.006</td>
</tr>
<tr>
<td>Post-op abscess (%)</td>
<td>1.2</td>
<td>4.4</td>
<td>.038</td>
</tr>
</tbody>
</table>

The groups did not differ significantly in age, hospital stay, incidence of complicated appendicitis, or incidence of wound infection.

Conclusions: A surprisingly large number of patients underwent sonography prior to appendectomy. These patients represent a cohort with longer duration of illness, longer delay before operation, a higher frequency of in-patient observation, a higher rate of misdiagnosis, and more post-operative complications.

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RESULTS OF A RANDOMIZED TRIAL COMPARING PROLONGED INTRAVENOUS ANTIBIOTICS TO SEQUENTIAL INTRAVENOUS/ORAL ANTIBIOTICS FOR CHILDREN WITH PERFORATED APPENDICITIS

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Purpose: Ideal antimicrobial therapy for perforated appendicitis remains poorly defined. In a prospective, randomized, multicenter trial of perforated appendicitis in children, we compared a prolonged course of intravenous antibiotics with a short course of sequential intravenous antibiotics followed by conversion to oral antibiotics.

Methods: Over a two year period, children with perforated appendicitis were randomized to a 10 day course of either intravenous ampicillin/gentamycin/clindamycin (IV) (n=10), or intravenous ampicillin/gentamycin/clindamycin followed by conversion to oral ampicillin/sulbactam plus metronidazole when oral feeding was resumed (IV/PO) (n=16). Success was classified as complete (clearance of infection without complications), partial (clearance of infection with complications, i.e. wound infection, abscess, etc.) or failure (no clearance of infection). Significance was calculated using Fischer’s exact test.

Results: We found no difference in overall success (complete + partial) between the IV and IV/PO group, with 60% complete and 40% partial success for the IV group; and 93% complete and 7% partial success for the IV/PO group (p<0.05). Patients in the IV group received an average of 10.4 +/- 1.3 days of treatment, compared with patients with IV/PO who received an average of 4.6 +/- 1.8 days of IV antibiotics and 10.1 +/- 0.5 days of total treatment. There was no difference in time to return of oral intake, duration of fever, or return of normal WBC between the treatment groups. Adverse effects of treatment appeared in 30% of the IV group and 0% of the IV/PO group. Conversion to oral therapy results in patient charge savings of approximately $1500/case compared to prolonged intravenous treatment.

Conclusions: We conclude that there is treatment equivalence between prolonged intravenous and sequential intravenous followed by oral antibiotic therapy in children with perforated appendicitis. Conversion to oral therapy does not decrease treatment success, and results in significant cost savings.

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METASTATIC CARCINOID TUMOR OF THE APPENDIX

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We describe an 11-year-old boy with metastatic disease from a 1.2 cm carcinoid tumor of the appendix, who presented with acute appendicitis. Postoperative imaging revealed a solitary lesion in the left lobe of the liver and FNA confirmed metastatic carcinoid tumor. A right hemicolecctiony and a left lateral segmentectomy of the liver were done. Pathology revealed that one lymph node in the bowel specimen and the solitary nodule in the liver were both positive for carcinoid tumor. Imaging at 4 months postoperatively showed no evidence of recurrent disease. Routine postoperative screening for patients with appendiceal carcinoid tumors should be considered.

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PERINEAL SWENSON PULLTHROUGH FOR HIRSCHSPRUNG'S DISEASE

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The infant is positioned transversely at the end of the operating table with legs suspended. The anal canal is everted. The intersphincteric plane (ISP) is entered 5 mm above the dentate line. Dissection in the ISP starts posteriorly and laterally, leaving the anterior dissection until last. Dissection is continued upwards on the rectum until the peritoneal cavity is entered and the transition zone is passed. Full thickness biopsy is examined for ganglion cells. The prolapsed aganglionic colon is resected. Coloanal anastomosis is performed. Transanal resection of the rectosigmoid colon using a 'Swenson technique' is an excellent approach for Hirschsprung's disease.

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INTERNAL ANAL SPHINCTER ACHALASIA: OUTCOME AFTER INTERNAL SPHINCTER MYECTOMY

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Background/Purpose: Internal anal sphincter achalasia (IASA) is a clinical condition with presentation similar to Hirschsprung's disease (HD), but with the presence of ganglion cells on rectal biopsy. The diagnosis of IASA is made on anorectal manometry, which demonstrates the absence of rectosphincteric reflex on rectal balloon inflation. Altered intramuscular innervation has been reported in IASA. The purpose of this study was to review the outcome after internal sphincter myectomy in patients with IASA.

Patients: Fifteen consecutive patients (age range 2 yrs to 12 yrs) with IASA, underwent internal sphincter myectomy. All patients presented with severe constipation with or without soiling. The diagnosis of IASA was made by anorectal manometry and rectal biopsy. All patients were followed-up for periods ranging from 2 to 6 years.

Results: At the time of follow-up, seven patients have regular bowel motions and are not on any laxatives. Six patients have normal bowel habits but are on small doses of laxatives. One patient is able to stay clean with regular enema regimen. One patient required resection of dilated and redundant sigmoid colon and now has normal bowel habits with laxatives.

Conclusion: The vast majority of patients with internal anal sphincter achalasia can be successfully managed by internal sphincter myectomy.

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INTESTINAL NEURONAL DYSPLASIA:
RESULTS OF TREATMENT IN 33 PATIENTS

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Background/Purpose: Intestinal neuronal dysplasia (IND) is a disease of the enteric nervous system, that clinically resembles Hirschsprung's disease.

Methods: Between 1992-1999, 418 patients underwent rectal suction biopsy for persistent constipation. Thirty-nine (7.8%) patients had histological evidence of IND. There were 26 male and 7 female (age range 1 week to 10 years). The diagnosis of IND was based on the presence of hyperganglionosis of the submucous plexus and giant ganglia and at least one of the following features in rectal biopsies: (i) ectopic ganglia, (ii) increased acetylcholinesterase (AchE) activity in the lamina propria, (iii) increased AchE nerve fibres around the submucosal blood vessels. All patients were started on laxatives with or without enemas after the diagnosis. Patients have been followed up from 1 to 8 years (mean 2.4 years).

Results: Twenty-one (64%) patients had good response to conservative management and presently have normal bowel habits. Twelve patients (36%) underwent internal sphincter myectomy after failed conservative management. Seven of these patients now have normal bowel habits. Two patients are able to stay clean with regular enemas. Three patients who continued to have persistent constipation after myectomy and underwent resection of redundant and dilated sigmoid colon now have normal bowel habits.

Conclusion: The majority of patients with IND can be managed successfully with conservative treatment.

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COMBINED POSTERIOR SAGITTAL AND THREE FLAP ANOPLASTY

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From 1989 to 1999, 21 children with high and intermediate imperforate anus (16 male, 5 female) were operated with a combination of a posterior sagittal and three flap perineal anoplasty. The principles of the surgical technique are described. Long term clinical follow-up (to a maximum of 10 years) was done in all patients as well as a recent phone interview with a questionnaire regarding bowel function and degree of satisfaction. Advantages of this combine surgical approach are:

1. excellent anatomical exposure
2. ability to limit rectal mobilization to a minimum
3. reduction of the incidence of mucosal prolapse
4. the new skin-lined anal canal may assist attainment of continence by providing a “sensory warning zone”
5. satisfactory cosmetic appearance.

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TOTAL COLONIC MANOMETRY: A GUIDE FOR SURGICAL MANAGEMENT OF FUNCTIONAL COLONIC OBSTRUCTION

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Pediatric functional colonic obstruction (pseudo-obstruction) encompasses a poorly characterized group of motility disorders. Their main feature is obstruction without mechanical blockage. Patients usually present with obstructive symptoms and abnormal defecation patterns. The effects on lifestyle, growth, and development can be devastating. Characterization of these disorders has been previously limited by the inability to easily measure colon motility patterns in small children. We report on 4 cases of functional obstruction (3 non-Hirschsprung’s and 1 Hirschsprung’s) where management was directed by total colonic manometry.

All patients presented with failure to pass meconium in the first 24 hours of life. One underwent anoplasty for low imperforate anus, but his symptoms did not improve. All underwent barium enema and rectal biopsy to rule out Hirschsprung’s.

The patients with normal ganglion cells distally all had massively dilated colon. Each underwent total colonic manometry: an abrupt end of normal peristalsis was identified at some point in the colon (one in the proximal colon, one in the transverse colon, and one in the left colon). Two patients underwent stoma diversion proximal to the loss of peristalsis (after failure of laxative therapy), and the one with the left colonic transition had success with laxatives. Manometry was repeated after colonic decompression was achieved. In two instances normal peristalsis returned (one had a diverting stoma and one did not). In the other instance where a diverting stoma was done and normal peristalsis did not return, failure of peristaltic return was used as an indication for a pull through procedure. Successful continence was achieved in all.

Our other patient had Hirschsprung’s disease confirmed by rectal biopsy and underwent a one stage laparoscopic pull through procedure (modified Duhamel). This was complicated postoperatively by a functional obstruction. Manometry showed no coordinated peristalsis at all in the colon. A diverting ileostomy was performed. Manometry 6 months after ileostomy demonstrated normal motility throughout the entire colon.

These initial cases demonstrate the utility of total colonic manometry in the management of colonic pseudo-obstruction syndromes. Direct measurement of colonic motor activity can be valuable in deciding the timing and need for diversion, the extent of resection, and the suitability of restoring bowel continuity. In Hirschsprung’s disease, this can potentially be utilized to determining suitability for a primary neonatal pull through versus a staged approach.

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COLOSTOMY FOR ANORECTAL ANOMALIES: HIGH INCIDENCE OF COMPLICATIONS

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Purpose: To characterise the type and incidence of complications related to colostomy formation in neonates with anorectal anomalies.

Methods: Review of 34 consecutive neonates (24 males and 10 females) with anorectal anomalies who required colostomy at birth between 1994 and 1998. Patients with colostomy still in place have been excluded.

Results: Site of colostomy was sigmoid (24), transverse (6) and descending colon (4). Twenty eight colostomies were loop and 6 were divided. The median birth weight was 2.9 Kg (range 1.8-3.8). The age at colostomy formation was 36 hours (range 24-72). The overall rate complication following colostomy was 56%. Mechanical complications occurred in 11 infants (32%) including prolapse (45%), adhesive obstruction (36%) and skin dehiscence (19%). Urinary tract infection after colostomy occurred in 11 infants (32%) with no difference between loop (9/28 = 32%) and divided colostomies (2/6 = 33%). There were no differences in colostomy-related complications and urinary tract infections between male and female infants. There were no deaths.

Conclusions: Colostomy for anorectal anomalies should not be considered a minor procedure. In our experience the incidence of complications following colostomy formation is high. The incidence of urinary tract infections was not affected by the type of colostomy.

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SPECTRUM OF IMPERFORATE ANUS PROBLEMS IN AFRICA:
A PERSONAL EXPERIENCE

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The definitive repair of imperforate anus is elective and therefore amenable to visiting surgeons. This report describes the spectrum of this condition encountered in a week-long surgical visit to Kenya.

Seven patients with imperforate anus were referred for treatment to Bethany Crippled Children Centre of Kenya in anticipation of a pediatric surgical visit. There were 3 boys and 4 girls; ages 6 weeks to 9 years. The defects included 2 rectovesical, 1 rectovaginal, 1 rectourethral, 2 rectovestibular and 1 rectoperineal fistula. Associated anomalies included Currarino triad with presacral teratoma, saccular colon with bifid cecum, and myelomeningocele. Only 2 patients had previous functioning colostomies; the rest passed stools per vagina or penis. Procedures performed included 2 colostomies, 1 minimal posterior sagittal anoplasty, 4 posterior sagittal anorectoplasties (PSARP), and one PSARP with laparotomy. Postoperative complications included 2 wound infections managed conservatively.

Limitations in the provision of pediatric surgical care in developing countries (Kenya has 2 "trained" pediatric surgeons for 28 million people) make the spectrum of unrepaired congenital problems broad and unique. Current surgical techniques can be adapted successfully to this setting and offer the promise of improved quality of life for children with congenital problems.

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ANIMATED 3-D CT IMAGES OF SPHINCTERIC MUSCULATURE IN IMPERFORATE ANUS AND CHOICE OF OPERATIVE PROCEDURE

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**Purpose:** To clarify the actual sphincteric musculature in the imperforate anus using 3-D CT.

**Methods:** Nine preoperative cases (high 4, intermediate 3, low 2) with imperforate anus were studied using 3-D CT to clarify the sphincteric musculature three-dimensionally. The animated CT images are presented by video.

**Results:** In the high type of imperforate anus, the sphincteric musculature looked like a small boat with a thin rudder, rather different from the musculature shown in Pena's textbook. The puborectalis muscle was poorly developed, and the sphincteric musculature between the bottom of the puborectalis muscle and the anal skin site formed an extremely thin sagittal plate 2.5 ± 0.3 mm thick, 7.7 ± 2.0 mm wide and 23.6 ± 7.4 mm long. In the intermediate type, the sphincteric musculature developed sufficiently as well as in the low type.

**Conclusions:** 3-D CT is useful to evaluate preoperative sphincteric musculature. In the high type, the puborectalis muscle and the anal skin site forms an extremely thin sagittal plate. This anatomical specificity influences the choice of operative procedure, since only a posterior sagittal dissecting procedure may be used for this thin sagittal plate.

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SENTINEL LYMPH NODE MAPPING AND DISSECTION:
A VALUABLE TOOL IN THE MODERN MANAGEMENT
OF CHILDHOOD EXTREMITY RHABDOMYOSARCOMA

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Multimodal therapy, involving surgery, chemotherapy and radiation, now dominates the management of rhabdomyosarcoma (RMS) in childhood. Yet, despite improvements in these practices, extremity tumors continue to fare relatively poorly. Several investigators have identified prognostic factors which can be used to direct therapy and predict outcome. These factors include histology and metastatic disease, the latter of which requires accurate staging to identify. The presence of lymph node metastases has been shown to be of prognostic significance, and is now incorporated into pre-treatment staging schemes. Up to 50% of all surgically evaluated nodes and 17% of clinically negative nodes in extremity RMS may harbor tumor, underscoring the increased risk of understaging the disease if accurate lymph node dissection is not undertaken. Despite its importance, there appears to be no standard format by which regional nodal status is evaluated in extremity RMS. Sentinel lymph node mapping and dissection is a minimally invasive technique, currently used in the staging of breast cancer and melanoma. In adults, the technique is associated with optimal nodal yield and low morbidity. We describe a case in which sentinel node dissection was used to easily stage an upper distal extremity embryonal RMS in a child with clinically and radiologically negative nodal disease. The procedure yielded no positive nodes, was associated with minimal morbidity, and spared the child more extensive radiotherapy. To our knowledge there have been no published reports using this procedure in any childhood tumor or to stage extremity RMS. We propose the further evaluation of this simple and innovative technique in the overall management of this childhood malignancy.

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SURGICAL RESECTION AND CHEMOTHERAPY IMPROVE SURVIVAL OF HEPATOBLASTOMA

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Background: We retrospectively reviewed our experience in 31 children with hepatoblastoma (HB). Despite an increased trend in the incidence of HB during the past 2 decades, encouraging cure rates have been achieved with complete resection of the tumor and chemotherapy (CT) before or after surgery (Cisplatin + Adriamycin or Cisplatin + Vincristine & 5 + Fluorouracil).

Results: The patients (pts) were 21 boys and 10 girls. From 1960-1980: 9 pts, from 1981-1999: 22 pts. Their mean age at surgery was 2.3 ± 2.5 years (3 months to 14 years). Tumor localization: right lobe 39%, left lobe 29% both lobes 32%. Tumor's size: > 10 cm in 71% of pts. Twenty-five patients (81%), underwent liver resection before or after chemotherapy. One patients with unresectable tumor received chemotherapy and a liver transplant. The 5 others pts were beyond the range of a surgical resection: the types of resection performed were: right lobectomy 8, left lobectomy 6, right trisegmentectomy 8, left trisegmentectomy 2, middle hepatectomy 1. The overall survival rate for 40 years of the study was 58% (18/31). With the association of surgery and chemotherapy (1981-1999) survival rate is 82% (14/17). Overall median follow-up in our study is 8 years 6/12 (range 2.5 to 24 years).

Conclusion: There is a dramatic improvement in the results of treatment of hepatoblastoma; formerly only 25-30% of pts were cured while, today, with combination of CT and surgery 75 to 80% may be cured.

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SURGERY FOR OVARIAN MASSES IN INFANTS, CHILDREN AND ADOLESCENTS: 102 CONSECUTIVE PATIENTS OVER 15 YEARS

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Background/purpose: Ovarian lesions must be included in the differential diagnosis of all girls with abdominal pain or an abdominal mass, although overall these lesions are rare.

Methods: We reviewed the clinical presentation, evaluation and outcome of all patients with ovarian pathology surgically treated at our institution since 1985.

Results: 102 girls (aged 9.8 ± 5.5 years, range 1 day-20 years) underwent 106 separate ovarian operations (36 salpingo-oophorectomies, 28 oophorectomies, 34 cystectomies, 6 biopsies, and 2 salpingectomies). Of those presenting with acute abdominal pain (n=59), 25 had ovarian torsion (14 associated with a mature teratoma) and only 2 had malignant tumors. In contrast, of those presenting with a mass (n=23), 26% had malignant tumors. There was no age-difference between those with benign disease (9.9 ± 5.6 yrs; n=95) and those with malignant tumors (8.4 ± 3.7 yrs, n=11). 10 children had 11 operations for presumed malignant tumors (3 dysgerminomas, 3 immature teratomas, 2 juvenile granulosa cell tumors, 1 yolk sac tumor, and 1 Sertoli-Leydig cell tumor). These patients are now disease-free at 8.4 ± 4.1 year follow-up.

Conclusions: Ovarian pathology remains a rare indication for surgery in girls less than 20 years-old. Since most of these masses are benign, ovarian-preserving operations should be performed whenever feasible.

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EVALUATION OF MINIMALLY INVASIVE APPROACHES TO ACHALASIA IN CHILDREN

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Background/purpose: This report describes our experience with thoracoscopic (TH) and laparoscopic Heller (LH) myotomy for treatment of achalasia in children.

Methods: Seven patients with achalasia (1993-2000) were referred for surgical therapy. Ages ranged from 5 to 17 years (mean 12 years) and weight from 23 to 78 kg (mean 45 kg). The first four were TH and the last three LH. The LH procedures also included a Dor fundoplication.

Results: All procedures were completed successfully using minimally invasive surgical techniques. Operative times ranged from 50 to 120 minutes (mean TH 95 min, mean LH 62 min.) One TH patient had a small perforation of the esophagus repaired primarily. All other patients were started on clear liquids on the first post-operative day. Three TH patients were discharged on post-operative day 2 and the fourth on day 5. All three LH patients were discharged on post-operative day 1. One TH patient developed recurrent symptoms at 6 months and underwent a LH. Six patients are asymptomatic; one patient has mild dysphagia. Follow-up UGI in two TH patients shows mild gastro-esophageal reflux.

Conclusions: Minimally invasive Heller myotomy is a safe and effective procedure. In our experience TH is associated with a slightly longer operative time, hospital stay and complication rate than LH.

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ONE TROCAR SURGERY:
A LESS INVASIVE VIDEOSURGICAL APPROACH IN CHILDHOOD

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Background/Purpose: Laparoscopic techniques and instruments are evolving in order to lessen the invasiveness of this surgical approach. We present our experience with the videosurgical approach using only one trocar.

Methods: Between October 1997 and January 2000 we performed 59 videosurgical procedures using a one-trocar approach (mean age 11.5 yr, range 4-18 yr). A 10mm Hasson trocar was inserted in an “open” fashion either through the umbilicus (laparoscopy) or below the apex of the 12th rib (retroperitoneoscopy). An operative laparoscope was used in all cases. The operations were: 18 retroperitoneoscopic Palomo varicocelectomies, 1 retroperitoneoscopic renal biopsy, 38 appendectomies, 2 ileal resections (Meckel’s diverticulum, duplication cyst). For appendectomies and ileal resections the corresponding intestinal loop was grasped and exteriorised through the umbilicus to perform conventional surgery.

Results: Mean operative time was 50.9 min (range 30-120) for laparoscopies and 44 min (range 15-80) for retroperitoneoscopy. There were 11 conversions (8 appendectomies, 3 varicocelectomies) and no postoperative complications.

Conclusions: In our opinion “one trocar surgery” is safe, effective and fast with low complication rate and excellent cosmetic results. We believe it is the less invasive as well as the most effective approach in the treatment of varicocele, appendicitis and selected intestinal diseases.

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OESOPHAGOGASTRIC DISSOCIATION VERSUS FUNDOPLICATION:
WHICH ONE FOR SEVERELY NEUROLOGICALLY IMPAIRED CHILDREN?

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Purpose: Neurologically impaired children (NIC) often have swallowing difficulties, severe
gastroesophageal reflux, recurrent respiratory infections (RI), malnutrition. Bianchi proposed
esophagogastric dissociation (BGD) alternatively to fundoplication and gastrostomy (FP&G). We compare
two of these approaches.

Methods: 27 consecutive symptomatic NIC refractory to medical therapy were enrolled in a prospective
study and divided into 2 groups: A (n=12) NIC who underwent FP&G;
B (n=12) NIC who underwent EGD.

Three were excluded because of previous FP.

Anthropometric [percentage of the 50th percentile/age of healthy children] and biochemical parameters,
RI/yr, hospitalization (days/yr), feeding time/min and “quality of life” [parental psychological
questionnaire-range 0-60], were analyzed (T-test) preoperatively and 1 year postoperatively. Complications
were recorded. Results were expressed as mean of differences between pre- and post-operative values.

Results:

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Three failures, requiring EGD, occurred in A. Group B presented one anastomotic stricture. Conclusion:
Compared to FP&G, EGD offered better nutritional rehabilitation, reduction in RI, improved quality of life.
EGD can be rightfully chosen as primary procedure.

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SIGNIFICANCE OF THE CLINICAL COURSE AND EARLY UPPER GI STUDIES IN PREDICTING COMPLICATIONS ASSOCIATED WITH THE REPAIR OF ESOPHAGEAL ATRESIA

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Background/purpose: In many centers, use of upper GI (UGI) studies in the early post-operative period after esophageal atresia (EA) repair is considered routine. Indications for this are many, including searching for existing problems and predicting future complications. However, most major complications, both early and late, are usually identified clinically prior to any radiological studies. The purpose of this study was to investigate factors that may anticipate the development of post-operative complications after EA repair, looking particularly at the predictive value of routine early post-operative UGI studies.

Methods: A total of 107 consecutive cases of EA were identified retrospectively over a 10-year period from two major Canadian Pediatric Health Centres. Ninety-six were associated with a distal tracheoesophageal fistula (TEF) of which 91 had repairs. Ninety-eight percent of these had an UGI study at a median of 8 post-operative days (range 2-26) prior to consideration of oral feeding. Charts were reviewed looking at patient variables, surgical factors, UGI findings and post-operative courses. Complications that required intervention were noted, including leaks, strictures, recurrent and missed fistulae, and gastroesophageal reflux (GER). All initial UGI studies were re-examined by one of two pediatric radiologists. Logistic regression was used to look for relationships between these clinical and radiological variables, and outcomes.

Results: Of the variables analyzed, univariate analysis demonstrated clinically significant leaks to be associated with intraoperative factors (subjective degree of anastomotic tension, esophageal tears and use of myotomies) and early post-operative clinical evidence suggesting a leak (p<0.03 for all). In a multivariate model, all remained independently significant except for the use of myotomies. Later development of clinically significant GER was also associated with the degree of tension (p=0.002). It had no relationships however, with findings of dysmotility, esophageal shortening or reflux at the initial UGI study (p>0.3 for all). Later development of a stricture requiring multiple dilatations or resection was only associated with a history of a clinically obvious leak (p=0.01); no relationship was seen with any other clinical, operative or radiological findings. Patients with missed or recurrent fistulae were suspected clinically prior to radiographic confirmation.

Conclusion: Early and late complications after repair of EA can be identified, and potentially anticipated, based on clinical findings at the time of repair and during the post-operative period. The use of early "routine” UGI studies, with no suspicion of a problem, has no value in terms of predicting complications or future clinical course.

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ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN CHILDREN

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Purpose: To review the indications, success rate and complications of endoscopic retrograde cholangiopancreatography (ERCP) in the pediatric age group.

Methods: From 1990 to 1999, 18 ERCPs were undertaken in 17 patients. They consisted of 7 males and 10 females whose age ranged from 4-17 years (mean 10.6 years). Twelve were performed under deep sedation (mean age 12.1 years) and 6 were done under general anesthesia (mean age 6.5 years). All the ERCP's were performed by experienced adult endoscopists.

Results: The indication for ERCP was biliary in 13 patients. Nine had suspected choledocholithiasis by either ultrasound, intra-operative cholangiogram or MRI. In 5 cases, the ERCP was done for pancreatic pathology. In 10 patients, the ERCP was diagnostic only and in 8 a therapeutic procedure was done. The overall success rate was 88.8%. Post ERCP complications consisted of 6 episodes of pancreatitis (33.3%), 4 of whom had a therapeutic procedure. One patient had a failed attempt at common bile duct cannulation and the sixth patient had a diagnostic ERCP which was normal. Pancreatitis resolved 2 – 6 days post ERCP. One other patient with sickle cell disease developed symptomatic anemia post ERCP and had to be transfused. The patients were followed between 0 and 56 months after the ERCP (mean 12.7 months) and no long term complications were observed.

Conclusion: We conclude that even in experienced hands, endoscopic retrograde cholangiopancreatography in the pediatric population has a much higher complication rate than in adults (38.9%). We recommend that very specific indications be met before subjecting a pediatric patient to an endoscopic retrograde cholangiopancreatography.

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LAPAROSCOPY FOR GASTROESOPHAGEAL REFLUX DURING THE FIRST YEAR OF LIFE

C. Esposito, P. Montupet, O. Reinberg
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Hospital CCB, Boulogne Billancourt, FRANCE
CHUV Lausanne, SWITZERLAND

Background: Very few children need antireflux surgery during the first year of life. No laparoscopic series were reported. We report our 3 centers experience.

Methods: From January 1993 to December 1998, 36 babies aged between 23 days and 13 months suffering GERD were operated upon using a laparoscopic procedure. The patients' weight ranged from 2.4 to 8.5 Kgs. Preoperative diagnostic exams included, barium esophagogram, manometry, endoscopy and pH-metry. Fifteen babies (41.6%) had associated anomalies and 10 (27.7%) were neurologically impaired. 36 laparoscopic fundoplications were performed according to Toupet's procedure (17/36), to Rossetti's (10/36), to Nissen's (8/36) and to Lortat-Jacob's technique (1/36). 4 babies had a previously done gastrostomy, while 6 infants needed one during the same procedure.

Results: We recorded no mortality in our series, and no anesthesiologic morbidity. 3 infants (8.3%) had an intra-operative complication: 1 lesion of a diaphragmatic vessels, 1 pneumothorax and 1 case of difficult dissection in case of a large hiatal hernia. This last patient was converted to open surgery.

With a median follow-up of 22 months, 3 redo procedures were recorded (8.3%).

Conclusions: Our experience shows the feasibility of the laparoscopic fundoplication even in infants below one year of age. An accurate preoperative diagnostic study is mandatory, because 50% of these patients present other associated anomalies. A long and accurate follow-up is necessary to evaluate the long term results and to detect possible complications which can occur even 1 year after surgery.

We believe that in case of recurrence, on the basis of our experience in a larger series with older children, a redo antireflux surgery by a laparoscopic approach is possible, without major difficulties.

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RESULTS AND COMPLICATIONS OF LAPAROSCOPIC SURGERY FOR PEDIATRIC VARICOCELE

University of Naples Federico II and University of Catanzaro, Italy Buzzi Hospital, Milan ITALY
Hospital William Soler La Habana, CUBA

Background: The authors report their experience with laparoscopic varicocelectomy in children.

Methods: Over a period of 36 months, 211 children underwent laparoscopic treatment of varicocele. Their age ranged between 6 and 17 years, the varicocele was located 209 times (99.1%) on the left side and in 2 cases (0.9%) the varicocele was bilateral. In 195 patients we used laparoscopic transperitoneal approach and in 16 we used retroperitoneoscopy. 30 children (14.2%) underwent ligation of the veins alone, and 181 (85.8%) underwent ligation of testicular veins and artery. In 15(7.1%) cases an additional procedure was applied during the same intervention.

Results: The average operation time was 30 minutes, with an hospitalisation of about 24-hours. At an average follow-up of 26 months, we had 19 (9%) minor complications: 14 children developed a left hydrocele, 3 children a scrotal emphysema, 2 others an umbilical granuloma. We had 5 recurrences of varicocele in our serie: 2 case (6.6%) when the patient underwent Ivanissevitch procedure, and 3 cases (1.6%) for patients treated with Palomo technique.

Conclusion: Our preliminary experience shows that the results of laparoscopic approach is comparable to that of the open approach. Moreover laparoscopy allows to treat in the same anesthesia other intra-abdominal pathologies. We believe that ligation of testicular veins and artery is preferable to the ligation of the testicular veins alone, even if the Palomo procedure has a non negligible incidence of post-operative hydrocele.

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50. Session Six  Monday  08:24  O

DIAGNOSTIC LAPAROSCOPY WITH PLANNED APPENDECTOMY: AN INTEGRAL STEP IN THE EVALUATION OF UNEXPLAINED RIGHT LOWER QUADRANT PAIN

L.M. DeCou, J.T. Boyle, M.W.L. Gauderer, J.A. Green, R.S. Abrams
The Children's Hospital
Greenville, SC USA

Background/Purpose: Chronic or atypical right lower quadrant abdominal pain is often difficult to diagnose and treat. We reviewed our experience with diagnostic laparoscopy with planned appendectomy for children with unexplained pain.

Methods: Diagnostic laparoscopy with appendectomy was performed when anatomical, infectious, and inflammatory bowel disorders were ruled out by comprehensive medical and radiological evaluation. Outcome data was obtained at office visit and by telephone.

Results: From 1997 to 2000, 28 children (20 female) presented with unexplained right lower quadrant pain. Ages ranged from 5 to 16 years (mean 11.5). Symptoms were present from 6 days to 2 years (mean 4.5 months). Gross and/or histologic appendiceal abnormalities were found in 25 (89%). Incidental findings included patent processus vaginalis in one and adnexal cysts in 6. Two complications occurred: pelvic fluid collection and umbilical suture reaction. At initial follow-up, 27 (96%) were pain-free. At a mean 12 month (range 2-30) follow-up, 18 of 19 patients (95%) reported no recurrence of their original pain.

Conclusions: Our results confirm that the appendix is an important source of unexplained recurrent or atypical abdominal pain in children. Diagnostic laparoscopy with planned appendectomy should be considered an integral step in the management of these patients.

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ENDOSURGERY AND THE OLD FART

Infants and Children’s Hospital at Presbyterian and St.Luke’s Hospital
Denver, CO USA

Learning the technique of endosurgery late in one’s career can be challenging and frustrating. Since 1995, the senior author at age 53 years have performed over 300 such procedures. The patients ranged from one day to 22 years weighing 1.5 to 122 kilograms. 198 procedures performed at the primary hospital included 79 Nissen fundoplications, 14 diagnostic laparoscopies, 13 appendectomies, 13 pyloromyotomies, 13 cholecystectomies, and 11 thoracoscopies. The majority of 54 laparoscopic appendectomies were performed at community hospitals.

Recommendations for the late onset endosurgeon include: 1. practice with video games, 2. perform as many procedures endoscopically as possible (particularly appendectomies), 3. utilize the same one or two surgical assistants (minimizes nausea and vertigo), 4. avoid more than two endosurgeries in a day (ergonomically tiring), 5. start with patients between 3 to 5 kilograms (particularly for fundoplications), 6. do not rush to convert, bleeding is grossly magnified. Intestinal distension and previous surgery are contraindications for any novice endosurgeon.

Difficult and infrequently performed procedures should be designated to one or two surgeons to prevent dilution of experience. The pediatric endosurgeon has a distinct economic advantage over the non-endosurgeon for referrals. The steep learning curve should not deter the senior pediatric surgeon from the advantages of endosurgery.

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TRAINING GENERAL SURGERY RESIDENTS IN PEDIATRIC SURGERY:
A CANADIAN SURVEY

D. Poenaru and the Members of the CAPS Education Committee
Queen’s University

The training of general surgeons in pediatric surgery is an important educational role of pediatric surgeons (PS). We surveyed this training process and the related expectations and perceptions of competency. We surveyed all practicing CAPS members in Canada, all General Surgery program directors (PD), and all final year General Surgery residents (PG). Questions included exposure to pediatric surgery, expected and perceived competence in managing common pediatric general surgical problems, and trainee practice intentions. Response rate to date was 51% from PS, 69% from PD, and 19% from PG. 67% of PS considered the exposure to pediatric surgery satisfactory, yet only 1 of 7 residents planning on pursuing general surgery felt adequately prepared. Trainees were expected to be competent in the conditions polled by 65% of PS and 74% of PD, yet only 38% of the trainees actually felt competent in them. The largest discrepancies were found for infant hernia, newborn colostomy, and cryptorchidism. Presence of a fellowship program and size of training program had no impact on perceived competency.

Training of general surgeons in pediatric surgery varies across Canadian programs. Perceived resident competency often lags behind program and faculty expectations. These data can be used for directing educational priorities in general surgery programs.

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53. Session Six  Monday  09:00  C

PRENATAL DIAGNOSIS OF ESOPHAGEAL ATRESIA
USING MAGNETIC RESONANCE IMAGING (MRI)

Washington University School of Medicine, St. Louis, Missouri  USA
The Hospital for Sick Children, University of Toronto, Toronto (Ontario)  CANADA

Background: Esophageal atresia (EA) is suspected sonographically in fetuses with a small stomach and unexplained polyhydramnios. However, these findings are insensitive and clinical decisions affecting timing or site of delivery may be made erroneously. We evaluated the accuracy of fetal MRI in this setting.

Methods: Fetuses were considered to be at risk for EA if they had a sonographically small or absent stomach and polyhydramnios. Multiplanar fetal MRI was performed using single shot rapid-acquisition, and the T2 weighted images were evaluated prospectively. Scans were positive if the proximal esophagus was dilated and the distal esophagus was not seen, and negative if the esophagus was visualized throughout its length.

Results: Nine fetuses underwent MRI. Associated abnormalities included trisomy 18 in one and contractures in another. Four scans were negative for EA; all had a normal esophagus after delivery. Five scans were positive; postnatally four were found to have esophageal atresia (two with fistula and two without). The one false positive had a diffuse neurological disorder with poor swallowing and a normal esophagus.

Conclusions: MRI was accurate in eight out of nine cases. This preliminary experience suggests that MRI may contribute to prenatal decision-making and counseling for fetuses at high risk for EA.

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ASSOCIATION CANADIENNE de
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32ième

Réunion Annuelle

MONTEBELLO

15-18 Septembre 2000
TRENTE-DEUXIÈME Congrès Annuel

ASSOCIATION CANADIENNE de
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15-18 Septembre 2000

Le Château Montebello
392 Notre Dame
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PROGRAMME SCIENTIFIQUE ET SOCIAL

Vendredi, le 15 septembre 2000

09:00 - 17:00 Réunion du Conseil de l'ACCP
17:00 Inscription
19:00 - 22:00 Réception de Bienvenue - Le Château Montebello

Samedi, le 16 septembre 2000

07:00 - 13:00 Inscription
07:00 - 07:55 Petit Déjeuner
07:30 - 13:00 Exposants
07:55 - 08:00 Mot de Bienvenue et Ouverture du Congrès
08:00 - 09:54 PREMIÈRE Session Scientifique
09:54 - 10:30 Pause-Santé
10:30 - 11:30 Fred MacLeod Lecture, Dr. James O'Neill, Jr.
11:30 - 12:15 Panel Discussion on Manpower
12:15 - 13:30 Lunch
13:30 - 14:54 DEUXIÈME Session Scientifique
14:54 - 15:30 Pause-Santé
15:30 - 17:30 TROISIÈME Session Scientifique

Dimanche, le 17 septembre 2000

06:00 - 08:00 Réunion du Comité de Spécialité en chirurgie générale pédiatrique
06:00 - 08:00 Réunion du Comité de Publication
07:00 - 12:00 Inscription
07:00 - 08:00 Petit Déjeuner
07:30 - 13:00 Exposants
08:00 - 09:48 QUATRIÈME Session Scientifique
09:48 - 10:30 Pause-Santé
10:30 - 12:00 CINQUIÈME Session Scientifique
12:00 - 13:00 "2 minutes / 2 diapos"
13:00 Déjeuner d'affaire des Membres
18:00 Réception du Président - Le Château Montebello
19:00 Banquet du Président - Le Château Montebello

Lundi, le 18 septembre 2000

07:00 - 09:00 Inscription
07:00 - 08:00 Petit Déjeuner
07:00 - 09:30 Exposants
08:00 - 09:06 SIXIÈME Session Scientifique
09:06 - Fin du congrès
MOT DE BIENVENUE DU PRÉSIDENT

Le 32e congrès de l'Association Canadienne de Chirurgie Pédiatrique suit les traces des leaders du monde à Montebello. Après avoir été le siège de la réunion du G7 en 1981 et du groupe de planification nucléaire de l'OTAN en 1983, le château Montebello convient tout à fait à une réunion de l'ACCP et de ses nombreux amis venant de partout dans le monde. C'est donc au nom de l'Association Canadienne de Chirurgie Pédiatrique que je souhaite la plus chaleureuse des bienvenues à tous les participants à ce congrès, ceci exprimé dans les sept langues du G7.

Ce congrès représente une occasion unique pour renouer contact, accueillir des nouveaux membres et invités; c'est aussi le temps de profiter des activités sociales pour s'amuser et pour consolider nos amitiés. L'ACCP est une organisation relativement petite, ce qui nous donne l'occasion d'échanger librement et amicalement. Le programme scientifique représente toujours le point culminant du congrès, où des chirurgiens d'expérience ainsi que des chirurgiens en formation et des participants non chirurgicaux échangent de façon variée et toujours stimulante. Après tout, les chirurgiens pédiatres parlent tous le même langage, celui du dévouement à la cause des soins chirurgicaux de tous les enfants.

Nous sommes très heureux d'accueillir le Docteur James O'Neill, Jr. comme conférencier invité. En plus d'une brillante carrière en chirurgie pédiatrique le Docteur O'Neill est très bien placé pour parler du nombre de chirurgiens pédiatres reçus en Amérique du Nord ainsi que de l'évolution de ce nombre dans le temps, ceci étant un des thèmes de notre présent congrès. Un certain nombre de nages noirs s'accumulent à l'horizon de notre spécialité et nous devons bien en interpréter la signification pour mieux planifier les soins des enfants qui ont besoin de nos services.

Le Docteur Pierre Soucy et son équipe nous ont préparé un excellent congrès dans un site merveilleux. Le Docteur Ken Shaw et son comité de programme ont assemblé un programme scientifique de première qualité. Le Docteur Maria Di Lorenzo et son comité de publications seront de nouveau à l'œuvre durant le congrès afin de sélectionner les meilleures publications. Les membres du comité de publications seront aussi les juges pour attribuer les prix de la meilleure présentation par les résidents en vue de la coupe de CAPS, peut-être devrait-on appeler cela le trophée "CAPS Cup".

En dernier mais sûrement pas le moindre, je voudrais remercier pour son travail acharné notre fidèle Secrétaire-Trésorier le Dr Salam Yazbeck et son équipe. Encore un an Salam et ce sera terminé, mais seulement dans ta fonction de "ST"!

Bon congrès! Enjoy! Goeie! GenieSen Sie! Godere! Tanoshimi!

Ray Postuma, M.D.
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 Nouveaux-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.
FONDS D'ÉDUCATION

Le rôle du Fonds d'Éducation est de promouvoir l'éducation médicale continue des membres de l'Association Canadienne de Chirurgie Pédiatrique, l'éducation des autres spécialistes, médicaux et chirurgicaux, des médecins en formation et du public à propos des maladies pédiatriques chirurgicales et de leur prévention. Le financement du Fonds d'Éducation provient d'individus et de groupes aussi bien médicaux que non médicaux intéressés à la chirurgie de l'enfant. Il provient également de certaines fondations caritatives. Il est de l'intention de l'Association d'augmenter le capital jusqu'à un niveau suffisant pour que les intérêts puissent soutenir le Programme d'Éducation Médicale Continue.

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:

Salam Yazbeck, M.D.
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1993-1995   Angus Juckes          Regina
1995-1997   Jean G. Desjardins    Montréal
1997-1999   David P. Girvan       London
1999-2001   Ray Postuma           Winnipeg

* décédé

SECRÉTAIRES-TRÉSORIERS

1967-1974   Barry Shandling       Toronto
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1978-1983   Frank M. Guttman      Montréal
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* décédé

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 Chirurgiens du Canada et représentent le sang artériel et veineux vu au cours de la chirurgie. L'association du bistouri avec le serpent guérisseur d'Esculape ainsi qu'avec l'image d'un enfant en bonne santé symbolise la pratique de la chirurgie pédiatrique.

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

La devise est une citation d'Ambroise Paré, père de la chirurgie moderne.
PROCHAIN CONGRÈS DE L'ACCP

33ᵉ Réunion annuelle
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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 1999

MEILLEUR TRAVAIL CLINIQUE

Dr. Georges AZZIE

"Manual detorsion in cases of testicular torsion: A viable option"
G. Azzie, S. Yazbeck, L. Garel, J. Dubois, S. Bouchard
Hôpital Sainte-Justine
Montreal (Quebec) CANADA

MEILLEUR TRAVAIL EXPÉRIMENTAL

Dr. Marcello ZAMPALELLI

"Amino acids counteract the inhibitory effect of fentanyl on hepatocyte oxidative metabolism"
M. Zamparelli, S. Eaton, L. Spitz, A. Pierro
Institute of Child Health and Great Ormond Street Hospital for Children
London UNITED KINGDOM

FÉLICITATIONS AUX DR. AZZIE ET DR. ZAMPALELLI !
ATTRIBUTION DE LIVRES

PRIX POUR LES MEILLEURES COMMUNICATIONS DES RÉSIDENTS 1999

MEILLEUR TRAVAIL CLINIQUE

Dr. Michel LALLIER
"Liver transplantation in biliary: Experience in 314 children"
Hôpital Sainte-Justine, Montreal (Quebec) CANADA

Dr. Carmelo ROMEO
"Gastric motility disorders in patients operated for esophageal atresia
and tracheoesophageal fistula"
C. Romeo, S. Baldari, A. Centorrino, F. Proietto, G.F. Scalfari,
P. Antonuccio, A. Centonze, C. Gentile
Institute of Nuclear Medicine, University of Messina, Messina ITALY

MEILLEUR TRAVAIL EXPÉRIMENTAL

Dr. Mélanie KAVANAGH
"Effect of GS 26303, an endothelin-converting enzyme/neutral endopeptidase inhibitor, on
nitrofen-induced congenital diaphragmatic hernia in the rat"
M. Kavanagh, D. Kluth, B. Battistini, A.Y. Jeng, S. Jean,
L. Fournier, D. Major, R. Cloutier
Centre Hospitalier de l'Université Laval, Sainte-Foy (Québec) CANADA

Dr. Paisarn VEJCHAPIPAT
"Intestinal metabolism after ischaemia-reperfusion"
P. Vejchapidat, S.R. William, L. Spitz, A. Pierro
Institute of Child Health and Great Ormond Street Hospital for Children
London UNITED KINGDOM

FÉLICITATIONS AUX DRS. LALLIER, ROMEO,
KAVANAGH ET VEJCHAPIPAT !
CONFÉRENCIER INVITÉ

Doctor James A. O'Neill, Jr, M.D.

La visite du Docteur O'Neill a été rendue possible grâce au support financier du Collège Royal des Médecins et Chirurgiens du Canada.

Né à New York, le Docteur O'Neill a reçu son diplôme de Docteur en médecine de Vanderbilt University Hospital en 1959 et a poursuivi sa formation en chirurgie générale. Il a reçu sa formation de chirurgie générale pédiatrique et de chirurgie thoracique pédiatrique à Columbus (Ohio).


Le Docteur O'Neill est diplômé en chirurgie générale, chirurgie générale pédiatrique, chirurgie thoracique pédiatrique et en soins intensifs chirurgicaux.

Notre conférencier est membre de 37 sociétés savantes et a participé à 44 différents comités nationaux. Il siège également sur le comité éditorial de 14 journaux scientifiques. Le Docteur O'Neill est un auteur très prolifique avec 288 publications sur tous les aspects de la chirurgie pédiatrique, y compris les problèmes de main d'œuvre chirurgicale pédiatrique.

L'Association Canadienne de Chirurgie Pédiatrique est honorée d'inviter le DOCTEUR JAMES A. O'NEILL, Jr. à titre de conférencier du Collège Royal des Médecins et Chirurgiens du Canada à donner la conférence annuel le Fred MacLeod. Le sujet de la conférence est: "PEDIATRIC SURGERY WORKFORCE"
VISITEZ NOTRE SITE INTERNET

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