Twenty-Eighth Annual Meeting

CANADIAN ASSOCIATION of
PAEDIATRIC SURGEONS

August 18-20, 1996

Sheraton Halifax
1919 Upper Water Street
Halifax (Nova Scotia) CANADA
B3J 3J5

(902) 421-1700
SCIENTIFIC AND SOCIAL PROGRAM

Saturday, August 17, 1996
09:00 - 17:00  Meeting of CAPS Council (Executive)
15:00        Registration
18:00 - 22:00 Welcoming Reception, Maritime Museum of the Atlantic

Sunday, August 18, 1996
07:00 - 17:00  Registration
07:00 - 08:00  Continental Breakfast
07:45 - 08:00  Welcome and Opening Ceremony
08:00 - 10:00 Scientific Session ONE
10:00 - 10:30 Refreshment Break
10:30 - 12:00 Scientific Session TWO
12:00 - 13:00 Fred MacLeod Lecture: Sister Nuala Kenny

Monday, August 19, 1996
08:00 - 09:00  "2 minutes/2 slides"
09:00 - 10:30  Scientific Session THREE
10:00 - 10:45  Refreshment Break
10:45 - 12:45  Scientific Session FOUR
13:00          CAPS Members Business Meeting
18:15          Buses leave hotel for Presidential Reception and Presidential Banquet
19:00          Presidential Reception
19:30          Presidential Banquet

Tuesday, August 20, 1996
07:00 - 08:00  Continental Breakfast
08:00 - 09:40  Scientific Session FIVE
09:40 - 10:15  Refreshment Break
10:15 - 11:50  Scientific Session SIX
11:50 - 12:05  Break
12:05 - 13:00  "Surgeons on the Firing Line"
13:00          Annual Meeting Adjoins
PRESIDENT'S WELCOME

Welcome to Halifax!

The 28th Annual Meeting is sure to be a great success.

This is indeed a time to exchange clinical and scientific information at both formal and informal gatherings but also to renew friendship, make new ones, welcome new members and guests, socializing and enjoying the social program.

I wish to thank Salam Yazbeck, the coordinator; Joyce and Michael Giacomantonio, the local hosts of Halifax; and Geoff Blair, the program chairman, for their wonderful work in providing us with an excellent scientific and social program.

I invite you all to participate and join in the fun of this unique gathering where you will learn as well as enjoy yourself.

Jean G. Desjardins, 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 Education Fund underwrites the visit of a distinguished paediatric surgeon each year to visit and teach at medical centers in Canada, provides a speaker on Paediatric Surgery at the Annual Meeting of the Canadian Paediatric Society, enables the Association to sponsor a session of scientific papers at the Meeting of the Royal College of Physicians and Surgeons of Canada and supports the Annual Scientific Meeting of the Association. 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-  Jean G. Desjardins  Montreal

* 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
FOUNDING MEMBERS

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

* indicates deceased

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

Heraldic Blazon

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

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

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

Description

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

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

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

29th Annual Meeting
October 3-7, 1997
The Banff Park Lodge Hotel, BANFF

30th Annual Meeting
September 25-27, 1998
TORONTO*

31th Annual Meeting
September 24-26, 1999
MONTREAL*

32th Annual Meeting
September 22-24, 2000
OTTAWA*

* dates and locations are those of the Royal College Annual Meeting
  CAPS dates and location to be determined
RESIDENT 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 $250. 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 1995 RESIDENT BEST PAPER AWARDS

BEST CLINICAL PAPER

Dr. Julie A. MILLER

"Congenital cystic adenomatoid malformation (CCAM) in the fetus: Natural history and predictors of outcome."
J.A. Miller, J.E Corteville, J.C. Langer
Washington University, St. Louis (Missouri) USA

BEST EXPERIMENTAL PAPER

Dr. V.A. EVRARD

"Under water - Nd:YAG laser-coagulation of blood vessels in a rat model"
V.A. Evrard, J.A. Deprest, P.V. Ballaer, T.E. Lerut, K. Vandenberghe, I.A. Brosens
Centre for Surgical Technologies, Leven, BELGIUM

CONGRATULATIONS DR. MILLER AND DR. EVRARD!
CAPS COUNCIL 1995-96

EXECUTIVE

President: J.G. Desjardins
Past-President: A. Juckes
Secretary/Treas.: S. Yazbeck
Director (3rd year): J.M. Laberge
Director (2nd year): J.C. Donald
Director (1st year): N. E. Wiseman

COMMITTEES

1. Archivist: R. Shandling
2. Bilingual: S. Ein
3. Congenital Anomalies: M. Di Lorenzo
4. Constitution and Bylaws: J. Bass
5. Education: J.M. Laberge
6. Ethics, Moral and Legal Issues: A. Banspahan
7. Finance: D. Givens
8. Future Meetings: President (U. Desjardins)
9. Liaison with American College: B. Shandling
10. Liaison with Trauma Assoc. of Canada: A. Wong
11. Liaison with World Federation: Secretary-Treasurer (S. Yazbeck)
12. Membership and Credentials: R. Postuma
13. Nominating: A. Juckes (Past President)
14. Program: G. Blair
15. Publications: P. Soucy
16. Research: R. Supina
17. Specialty Committee in Pediatric General Surgery (of the Royal College): S. Ein

Legend:

- Chair, Gen Surg, Comm
- Nucleus member
- Ex-officio member
- Corresponding member

18. Standards:

- M. Evans
- C. Chartrand
- L. Kamin
- R. Postuma
- Training and Human Resources
- Committee previously "Health & Manpower" and "Residency"
- Committee is amalgamated with the Specialty Committees

19. Laparoscopy:

- P. Pilgerud
- A. Finlay
- F. Lukas
- R. Postuma
- R.H. Rich
- S. Ruben

20. Trauma:

- A. Wong
- S. Cho
- B.J. Hancock
- M. Hoffman
- J.H. Vill

CAPS Suite Editors:

- N. Wiseman
- R. Postuma (assistant)

Contact:

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:

Dr. Salam Yazbeck, Hôpital Ste. Justine, 3757 Cote Ste. Catherine, Montreal, PQ, H3T 1C9, Canada; tel: (514) 336-4481; fax: (514) 345-4864;
E-mail address: secretary@caps.ca
Sister Nuala Patricia Kenny, BA, MD, FRCPC

Sister Nuala Patricia Kenny was born in New York and entered the Sisters of Charity of Halifax in 1962. She received her BA, Magna Cum Laude, from Mount Saint Vincent University in 1967 and MD from Dalhousie in 1972. She did postgraduate training in pediatrics at Dalhousie University and Tufts-New England Medical Centre, during which she held a Killam Scholarship. In 1975, she became a Fellow of the Royal College of Physician and Surgeons of Canada and in 1976 was certified by the American Board of Pediatrics. She received an Honorary Doctorate from Mount Saint Vincent in Halifax in 1992.

Sister Kenny joined the Department of Pediatrics at Dalhousie in 1975 and assumed the newly established position of Coordinator of Regional Pediatric Services. In 1982, she became Director of Medical Education at the Hospital for Sick Children in Toronto. In 1985, she was appointed Professor and Chairperson of the Department of Pediatrics at Queen’s University, Kingston, Ontario. She returned to Dalhousie as Professor and Head of the Department of Pediatrics and Chief of Pediatrics at the Izaak Walton Killam Hospital in 1988.
Doctor Kenny is nationally recognized as an educator and physician ethicist. She has travelled extensively as a distinguished lecturer. In 1991, she was a Visiting Scholar at the Hastings Centre for Ethics and in 1993 held a Royal College of Physicians and Surgeons of Canada Fellowship in Continuing Medical Education at the Kennedy Institute of Ethics at Georgetown University.

She serves on the Committees on Biomedical Ethics of the Royal College of Physician and Surgeons of Canada and the Canadian Pediatric Society. She was a founding member of the National Council for Bioethics in Human Research and past President of the Canadian Pediatric Society. She is a member of the Tri-Council Working Group on Revision of Guidelines with Human Subjects. She is a member of the Prime Minister's National Forum on Health, developing a new vision of Canada's Health System for the 21st Century. She is President of the Canadian Bioethics Education and Research of Dalhousie Faculty of Medicine.

CAPS is also pleased to acknowledge that

**SISTER NUALA PATRICIA KENNY**

*est la CONFERENCIÈRE INVITÉE du COLLEGE ROYAL DES MÉDECINS ET CHIRURGIENS DU CANADA*
PRINTING OF THE PROGRAM BOOKLET
WAS MADE POSSIBLE WITH THE FINANCIAL SUPPORT
OF THE FOLLOWING COMPANIES

Baxter Corporation
Immuno (Canada) Ltd.
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PROGRAM SCHEDULE
PROGRAMME DÉTAILLÉ

ABBREVIATIONS

O original 10 minute paper
R resident paper
C 5 minute case/technique report
SATURDAY, AUGUST 17, 1996

SHERATON HALIFAX

09:00 - 17:00  CAPS Council Meeting (Executive)
               Port Suite

15:00  Registration

18:00 - 22:00 Welcoming Reception
           Maritime Museum of the Atlantic
07:00 - 17:00  Registration
07:00 - 08:00  Continental Breakfast
              Halifax A Room
07:45 - 08:00  Welcome and Opening Ceremony
              President, Dr. Jean G. Desjardins
08:00 - 10:00  Scientific Session ONE
              Nova Scotia D Room
10:00 - 10:30  Refreshment Break
10:30 - 12:00  Scientific Session TWO
              Nova Scotia D Room
12:00 - 13:00  Fred MacLeod Lecture
              Sister Nuala Patricia Kenny
              "Consent and Dissent in Pediatric Surgery"
## SUNDAY, AUGUST 18, 1996

**SCIENTIFIC SESSION ONE**  
Sheraton Halifax  
Nova Scotia D Room

**CO-CHAIRMEN**  
Dr. G.K. Blair  
Dr. A. Winthrop

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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| 08:00 - 08:10 | CONSERVATIVE MANAGEMENT OF PANCREATIC TRAUMA IN CHILDREN  
M.S. Keller, K. Sartorelli, D.W. Vane  
University of Vermont  
Burlington (Vermont) USA |
| 08:10 - 08:20  | DIAGNOSIS AND MANAGEMENT OF DUODENAL INJURIES IN CHILDREN  
I. Shlyantsev, M. Kreiler, I.M. Sena, P.S. Babyn, R.H. Pearl  
The Hospital for Sick Children  
Toronto (Ontario) CANADA |
| 08:20 - 08:35  | 5 MINUTE DISCUSSION |
| 08:35 - 08:50  | TO TUBE OR NOT TO TUBE?  
DO INFANTS AND CHILDREN NEED POST-LAPAROTOMY GASTRIC DECOMPRESSION?  
A. Sandler, D. Evans, S.H. Eia  
The Hospital for Sick Children  
Toronto (Ontario) CANADA |
| 08:50 - 09:05  | 5 MINUTE DISCUSSION |
| 09:05 - 09:20  | ADRENOCORTICAL TUMOR IN CHILDHOOD: 24-YEAR EXPERIENCE  
S.K. Mayer, C. Deal, K. Chun, A.X. Holteeman, N. Gagoé, A.L. Bensoussan,  
D. St-Vil, S. Yaquek, L. Oligny, H. Blanchard  
Hôpital Sainte-Justine  
Montreal (Quebec) CANADA |
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<th>Time</th>
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<tr>
<td>08:55</td>
<td>CROHN'S DISEASE IN THE PEDIATRIC AGE GROUP: A 15-YEAR REVIEW</td>
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<td>J. Wong, P. Fitzgerald, R. Issenman</td>
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<td>Children's Hospital at Chedoke-McMaster</td>
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<td>Hamilton (Ontario) CANADA</td>
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<td>09:05</td>
<td>HISTOPATHOLOGICAL ANALYSIS TO EVALUATE THE ROLE OF INTERVAL APPENDECTOMY</td>
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<td>Washington University School of Medicine, St. Louis (Missouri) USA</td>
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<td>McMaster University, Hamilton (Ontario) CANADA</td>
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<td>09:15</td>
<td>5 MINUTE DISCUSSION</td>
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<td>09:20</td>
<td>EMPYEMA THORACIS IN CHILDREN: 25-YEAR REVIEW</td>
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<td>Montreal Children's Hospital</td>
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<td>Montreal (Quebec) CANADA</td>
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<td>09:30</td>
<td>IS THORACOSCOPICALLY AIDED DEBRIDEMENT OF EMPYEMA ADVANTAGEOUS IN CHILDREN?</td>
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<td>R.M. Patton, R.S. Abrams, M.W.L. Gauderer</td>
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<td>Greenville (South Carolina) USA</td>
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<td>09:40</td>
<td>5 MINUTE DISCUSSION</td>
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<td>09:45</td>
<td>ASSESSMENT OF THE POSTOPERATIVE VISIT AFTER ROUTINE INGUINAL HERNIA REPAIR: A PROSPECTIVE RANDOMIZED TRIAL</td>
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<td>Y. Khan, P. Fitzgerald, M. Walton</td>
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<td>5 MINUTE DISCUSSION</td>
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<td>10:00</td>
<td>REFRESHMENT BREAK</td>
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## Sunday, August 18, 1996

### Scientific Session Two

**Sheraton Halifax**  
**Nova Scotia D Room**

### Co-Chairmen

- Dr. R. Pearl  
- Dr. J.M. Giacomantonio

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Details</th>
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| 10:00  | **Utilty of Helical CT for Diagnosis and Operative Planning in Tracheomalacia After Repair of Esophageal Atresia**  
  *K. Inoue, J. Yanagihara, S. Ono, Y. Kubota, N. Iwai*  
  Children's Research Hospital, Kyoto Prefectural University of Medicine  
  Kyoto, Japan |
| 10:45  | **Esophageal Balloon Dilatation: A Review of 8 Years Experience**  
  *J.J. Murphy, G.K. Blair, G.C. Fraser, K. Kudesky, J.G. Culham*  
  British Columbia's Children's Hospital  
  Vancouver (British Columbia) Canada |
| 10:50  | **5 Minute Discussion** |
| 10:55  | **Analgesia Requirements Following Open and Laparoscopic Fundoplication**  
  *A.C. Dick, P. Coulter, V.E. Boston, S.R. Potts*  
  The Royal Belfast Hospital for Sick Children  
  Belfast, United Kingdom |
| 11:40  | **The Uncut Collis-Nissen Fundoplication: Results in 79 Consecutive High-Risk**  
  *B.H. Cameron, C.W. McGill, M.P. Williams, W.J. Cochran*  
  Geisinger Clinic  
  Danville (Pennsylvania) USA |
<p>| 11:45  | <strong>5 Minute Discussion</strong> |</p>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title and Details</th>
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<tr>
<td>11:20</td>
<td>OR 14</td>
<td>THE EFFECTS OF TRACHEAL OCCLUSION ON TYPE II PNEUMOCYTES IN FETAL LAMBS</td>
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<td>W. Bin Sadia, P. Piedboeuf, J.M. Laberge, M. Gamache, P. Petrov, E. Hashim,</td>
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<td>G. Ghitulescu, A. Mantia, M.F. Chen</td>
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<td>Montreal Children's Hospital, Montreal (Quebec) CANADA</td>
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<td>Le Centre Hospitalier Universitaire Laval, Quebec (Quebec) CANADA</td>
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<td>11:30</td>
<td>OR 15</td>
<td>COLLAGEN INDUCES CYTOKINE RELEASE BY FETAL PLATELETS:</td>
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<td>IMPLICATIONS IN SCARLESS HEALING</td>
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<td>Medical College of Virginia, Virginia Commonwealth University</td>
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<td>Richmond (Virginia) USA</td>
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<td>11:40</td>
<td>OR 16</td>
<td>DOES EXTRACORPOREAL LIFE SUPPORT (ECLS) BENEFIT NEONATES WITH CONGENITAL</td>
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<td>DIAPHRAGMATIC HERNIA (CDH)?</td>
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<td>THE APPLICATION OF A PREDICTIVE EQUATION</td>
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<td>T.H. Keshen, M. Gursoy, D.S. Abrams, S.B. Shew, O.E. Smith, M.E. Wearden, A.A.</td>
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<td>Moise, T. Jaksic</td>
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<td>Baylor College of Medicine, Texas Children's Hospital</td>
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<td>Houston (Texas) USA</td>
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11:30 - 11:50 3 MINUTE DISCUSSION

12:00  FRED MACLEOD LECTURE

"Consent and Discretion in Pediatric Surgery"
MONDAY, AUGUST 19, 1996
SHERATON HALIFAX

08:00 - 09:00  "2 minutes/2 slides
Chairman: Dr. G.K. Blair

Continental Breakfast
Halifax A Room

Casual Coffee

Informal Discussion

09:00 - 10:30  Scientific Session THREE
Nova Scotia D Room

10:00 - 10:45  Refreshment Break

10:45 - 12:45  Scientific Session FOUR
Nova Scotia D Room

13:00  CAPS Members Business Meeting
Halifax A Room

18:15  Buses leave hotel for Presidential Reception
and Presidential Banquet

19:00  Presidential Reception

19:30  Presidential Banquet
Shore Club
Hubbard's (Nova Scotia)

After Dinner Speaker
Dr. Alex Gillis
"From Sea to Desert: A Surgeon Expatriate's View of Saudi Arabia"
### MONDAY, AUGUST 19, 1996

**SCIENTIFIC SESSION THREE**  
Sheraton Halifax  
Nova Scotia D Room

| CO-CHAIRMEN | Dr. J.S. Janik | Dr. S. Yazbeck |

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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| 09:00 - 09:05 | A UNIQUE PRESENTATION OF ACTINOMYCOSIS IN A CHILD  
M. Evans, J. Trice  
Children's Hospital of Western Ontario  
London (Ontario) CANADA |
| 09:05 - 09:10 | INTRAHEPATIC BILIO-DIGESTIVE DERIVATION FOR COMPLETE EXTRAHEPATIC BILIARY OBSTRUCTION IN CHILDREN  
H. Blanchard, D. St-Vil, S. Yousef, S.K. Mayer, L. Garel, T. Yandza  
Hôpital Sainte-Justine  
Montreal (Quebec) CANADA |
| 09:15 - 09:20 | PROSTAGLANDIN AND HYPERTROPHIC PYLORIC STENOSIS  
V. Ramachandran, G.K. Gittles, A.P. Kennedy, C.L. Snyder, K.W. Ashcraft, P.B. Manning  
Children's Mercy Hospital  
Kansas City (Missouri) USA |
| 09:20 - 09:25 | CONGENITAL PULMONARY LEIOMYOSARCOMA WITHOUT NON-IMMUNE HYDROPS  
M. Evans, L. Parker, T. Morton, R. Armstrong  
Children's Hospital of Western Ontario  
London (Ontario) CANADA |

**5 MINUTE DISCUSSION**
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| 21 | C | 09:30 - 09:35 | SCROTOSCHISIS ASSOCIATED WITH CONTRALATERAL MECONIUM PERIORCHITIS  
  K. Chun, D. St-Vil  
  Hôpital Sainte-Justine  
  Montreal (Quebec) CANADA |
| 22 | C | 09:35 - 09:40 | FETOSCOPIC ND:YAG-LASER COAGULATION FOR TWIN-TWIN TRANSFUSION SYNDROME IN CASES OF ANTERIOR PLACENTA  
  V.A. Evard, H. Flageole, P.P. Van Balbaer, D. Van Schoubroek,  
  K. Vandenberghe, J.A.M. Deprest  
  University Hospital Gent and Centre for Surgical Technologies  
  Leuven, BELGIUM |
| 23 | C | 09:45 - 09:50 | BOTULIN TOXIN USE IN PEDIATRIC ESOPHAGEAL ACHALASIA: A CASE REPORT  
  M. Walton, C. Tougas  
  Children's Hospital at CHEO-McMaster  
  Hamilton (Ontario) CANADA |
| 24 | C | 09:50 - 09:55 | UNUSUAL FINDINGS IN THE INGUINAL CANAL: A REPORT OF 4 CASES  
  D. Poénty, I. Komul  
  Queen's University  
  Kingston (Ontario) CANADA |
| 25 | C | 10:00 - 10:05 | THE USE OF A NEW 9 Fr BALLOON-TIPPED CANNULA FOR ENDOSCOPIC FETAL SURGERY IN THE OVINE MODEL  
  Center for Surgical Technologies, Katholieke Universiteit Leuven  
  Leuven, BELGIUM |
| 26 | C | 10:05 - 10:10 | HEMANGIOMA OF THE UMBILICAL CORD MIMICKING AN OMPHAHOCELE  
  K.A. Miller, M.W.L. Gauderer  
  Rainbow Babies and Children's Hospital  
  Cleveland (Ohio) USA |

09:40 | 5 MINUTE DISCUSSION

09:55 | 5 MINUTE DISCUSSION

10:10 | 5 MINUTE DISCUSSION
<table>
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<tr>
<th>CR</th>
<th>10:15 - 10:20</th>
<th>SURGICAL PANCREATIC COMPLICATIONS INDUCED BY L-ASPARAGINASE</th>
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<td>J. Sondoff, E. Hwang, N. Spiegelard</td>
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<td>UMDNJ-Robert Wood Johnson Medical School, New Brunswick (New Jersey) USA</td>
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<td>Cornell University, New York Hospital, New York (New York) USA</td>
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<th>CAPSULECTOMY: A CURE FOR THE PAGE KIDNEY</th>
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<td>K.P. Moriarty, G. Lipkowitz, M. Germain</td>
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<td>Tufts University School of Medicine, Baystate Medical Center</td>
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<td>Springfield (Massachusetts) USA</td>
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10:25 - 10:30 5 MINUTE DISCUSSION

10:30 - 10:45 REFRESHMENT BREAK
# MONDAY, AUGUST 19, 1996

## SCIENTIFIC SESSION FOUR

Sheraton Halifax  
Nova Scotia D Room

**CO-CHAIRMEN**  
Dr. R. Postuma  
Dr. S.H. Eiu

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<th>No</th>
<th>Time</th>
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<th>Speaker(s) and Institution</th>
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</table>
| 29 | 10:45-10:50 | SURGICAL AND ANAESTHETIC CONSIDERATIONS OF LAPAROSCOPIC SWENSON PULLTHROUGH IN INFANTS | M. Walton, P. Fitzgerald, M. Daly  
Children's Hospital at Chedoke-McMaster  
Hamilton (Ontario) CANADA |
| 30 | 10:50-11:00 | LAPAROSCOPIC PULLTHROUGH PROCEDURE FOR THE TREATMENT OF HIRSCHSPRUNG’S DISEASE IN INFANTS AND CHILDREN USING THE HARMONIC SCALPEL | S.S. Rothenberg, J.H.T. Chung  
Presbyterian/St. Luke’s Medical Center for Children  
Denver (Colorado) USA |
| 31 | 11:00-11:10 | PEDIATRIC LAPAROSCOPIC ENDORECTAL PULLTHROUGH FOR HIRSCHSPRUNG’S DISEASE | D. Tran, D. Wong, J. Fisher, M. Fullerton, H. Wang, H. Andrews  
Loma Linda University Children’s Hospital and Medical Center  
Loma Linda (California) USA |

**11:10**  
5 MINUTE DISCUSSION

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<th>Time</th>
<th>Session Title</th>
<th>Speaker(s) and Institution</th>
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</table>
| 32 | 11:15-11:20 | PROXIMITY INJURY BY THE HARMONIC SCALPEL DURING DISSECTION | K. Kadesky, B. Schopf, J.F. Magee, G. Blair  
British Columbia's Children Hospital  
Vancouver (British Columbia) CANADA |
The Children's Mercy Hospital  
Kansas City (Missouri) USA |

**11:30**  
5 MINUTE DISCUSSION
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<tr>
<td>11:35</td>
<td>OR</td>
<td>A COMPARISON BETWEEN ANAL ENDSOINOGRAPHY AND EMG, AND MANOMETRY IN INTERMEDIATE OR HIGH ANORECTAL ANOMALIES</td>
<td>R. Fukata, N. Iwai, J. Yanagihara, G. Iwata, Y. Kubota</td>
<td>Children's Research Hospital, Kyoto Prefectural University of Medicine, Kyoto, JAPAN</td>
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<tr>
<td>11:45</td>
<td>OR</td>
<td>ANAL REEDUCATION FOR POSTOPERATIVE FECAL INCONTINENCE IN CONGENITAL DISEASES OF THE RECTUM AND ANUS</td>
<td>C. Ménard, C. Trudel, R. Cloutier</td>
<td>Le Centre Hospitalier de l'Université Laval, Sainte-Foy (Quebec), CANADA</td>
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**11:55** 5 MINUTE DISCUSSION

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<tr>
<td>12:00</td>
<td>OR</td>
<td>THE RISK OF VENTRICULOOPERITONEAL SHUNT INFECTION IN PATIENTS WITH ABDOMINAL SEPSIS</td>
<td>B. Tannantuono, J.M. Walton, J. Bass, R. Hollenberg, R. Del Maestro</td>
<td>Children's Hospital at Child's-McMaster, Hamilton (Ontario), CANADA</td>
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<td>The Children's Hospital of Eastern Ontario, Ottawa (Ontario), CANADA</td>
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**12:10** 5 MINUTE DISCUSSION

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**12:25** 5 MINUTE DISCUSSION

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<tr>
<td>12:30</td>
<td>OR</td>
<td>PEDIATRIC SURGEONS ACTIVITIES AND FUTURE PLANS</td>
<td>S. Bouchard, J.M. Luberje</td>
<td>Montreal Children's Hospital, Montreal (Quebec), CANADA</td>
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**12:40** 5 MINUTE DISCUSSION
TUESDAY, AUGUST 20, 1996
SHERATON HALIFAX

07:00 - 08:00
Continental Breakfast
Halifax A Room

08:00 - 09:40
Scientific Session FIVE
Nova Scotia D Room

09:40 - 10:15
Refreshment Break

10:15 - 11:50
Scientific Session SIX
Nova Scotia D Room

11:50 - 12:05
Break

12:05 - 13:00
"Surgeons on the Firing Line"
Nova Scotia Room

13:00
Annual Meeting Adjourns
### TUESDAY, AUGUST 20, 1996

**SCIENTIFIC SESSION FIVE**
Sheraton Halifax  
Nova Scotia D Room

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<td><strong>CO-CHAIRMEN</strong></td>
<td>Dr. D. St-Vil</td>
<td>Dr. N. Wiseman</td>
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**CONTINUOUS EPIDURAL INFUSIONS FOR PERIOPERATIVE PAIN IN INFANTS LESS THAN 2 YEARS**
K. Heiss, A. Rogers, T. Mancuso, M. Weinstein  
Emory University School of Medicine, Egleston Children’s Hospital  
Atlanta (Georgia) USA  
**08:10** 5 MINUTE DISCUSSION

**CHRONIC BRONCHITIS IS A COMMON LONG-TERM COMPLICATION OF OESOPHAGEAL ATRESIA**
H. Lindahl, H. Sairanen, R. Rintala  
Children’s Hospital, University of Helsinki  
Helsinki, FINLAND  
**08:25** 5 MINUTE DISCUSSION

**SACOW - PAST, PRESENT, FUTURE**
B. Broecker  
Surgical Aid to Children of the World  
Rockville Centre (New York) USA  
**08:40** 5 MINUTE DISCUSSION
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<tr>
<td>42</td>
<td>O</td>
<td>08:45 - 08:55</td>
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<tr>
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<td>MICROVASCULAR REPAIR OF INJURIES TO THE FEMORAL AND POPLITEAL VESSELS IN CHILDREN</td>
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<td>M.I. Brandt, J.G. Nuchtern, N. Devino</td>
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<td>Baylor College of Medicine</td>
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<td>Houston (Texas) USA</td>
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08:55 5 MINUTE DISCUSSION

| 43 | O | 09:00 - 09:10 |
| SEGMENTAL INTESTINAL TRANSPLANTATION; FEASIBILITY AND IMMUNOSUPPRESSION |   |
| D.L. Siegel, D. Williams, M. Friedlich, S. Yao, P. Thorne |   |
| Children's Mercy Hospital, Kansas City (Missouri) USA |   |
| University of Alberta, Edmonton (Alberta) CANADA |   |

09:10 5 MINUTE DISCUSSION

| 44 | O | 09:10 - 09:20 |
| MORPHOLOGICAL CHANGES IN THE ENTERIC NERVOUS SYSTEM OF THE TRANSPPLANTED FETAL RAT INTESTINE |   |
| K. Tanaka, K. Ohashi, D.S. O'Briain, P. Puri |   |
| Children's Research Centre, Our Lady's Hospital for Sick Children |   |
| Crumlin, Dublin, IRELAND |   |

09:20 5 MINUTE DISCUSSION

| 45 | O | 09:25 - 09:35 |
| ANTERIOR EXPOSURE OF SPINAL DEFORMITIES AND TUMORS. A TWENTY YEAR EXPERIENCE |   |
| The Children's Hospital |   |
| Denver, (Colorado) USA |   |

09:35 5 MINUTE DISCUSSION

09:45 REFRESHMENT BREAK
<table>
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<td>TUESDAY, AUGUST 20, 1996</td>
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<td>SCIENTIFIC SESSION SIX</td>
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<td>Dr. K. Heiss</td>
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<td>Dr. J.M. Laberge</td>
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<td><strong>46</strong></td>
<td>10:15 - 10:25</td>
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<tr>
<td><strong>DO CHILDREN WITH REPAIRED LOW ANORECTAL MALFORMATIONS HAVE NORMAL BOWEL FUNCTION?</strong></td>
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<tr>
<td>R.J. Rantala, H.G. Lindahl, M. Rasanes</td>
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<td>Children’s Hospital, University of Helsinki, Finland and Alder Hey Children’s Hospital Liverpool, ENGLAND</td>
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<td><strong>47</strong></td>
<td>10:25 - 10:35</td>
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<tr>
<td><strong>THE CECOSTOMY BUTTON: A NEW METHOD OF BOWEL CLEANSING</strong></td>
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<td>B. Shandling, P.G. Chait, H.F. Richards</td>
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<td>The Hospital for Sick Children</td>
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<td>Toronto (Ontario) CANADA</td>
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<td><strong>48</strong></td>
<td>10:35 - 10:45</td>
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<tr>
<td><strong>THE PAEDIATRIC BOWEL MANAGEMENT CLINIC. INITIAL RESULTS OF A MULTIDISCIPLINARY APPROACH TO FUNCTIONAL CONSTIPATION IN CHILDREN</strong></td>
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<td>D. Pue rep, R.M. Bird</td>
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<td>Queen’s University</td>
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<td>Kingston (Ontario) CANADA</td>
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<td><strong>10:45</strong></td>
<td><strong>5 MINUTE DISCUSSION</strong></td>
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<tr>
<td><strong>49</strong></td>
<td>10:50 - 11:00</td>
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<tr>
<td><strong>INTESTINAL VASCULAR ANOMALIES IN CHILDREN</strong></td>
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<tr>
<td>B. Prémont, S. Yazbeck, J. Dubois, P. Brochu, L. Garel, A. Ouimet</td>
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<tr>
<td>Hôpital Sainte-Justine</td>
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<td>Montreal (Quebec) CANADA</td>
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<td><strong>11:00</strong></td>
<td><strong>5 MINUTE DISCUSSION</strong></td>
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<tr>
<td>11:05</td>
<td>50</td>
<td>IMPROVED RESULTS FOR BILIARY ATRESIA USING AN EXTENDED HILAR DISSECTION</td>
<td>D.L. Sigalot, J. Shapiro, Children's Mercy Hospital, Kansas City, Missouri, USA</td>
</tr>
<tr>
<td>11:20</td>
<td>51</td>
<td>PENTOXIFYLLINE REDUCES INTESTINAL REPERFUSION INJURY</td>
<td>Ç. Savaş, H. Dincar, M. Çelik, T. Kınmaz, M. Barlas, H. Gökçener, S. Yükseven, Ankara University Medical School, Ankara, Turkey</td>
</tr>
<tr>
<td>11:35</td>
<td>52</td>
<td>EFFECT OF MAJOR SURGERY ON NEUTROPHIL CHEMOTAXIS AND ACTIN POLYMERIZATION IN NEONATES AND CHILDREN</td>
<td>C. Merry, D.J. Reen, P. Puri, Children's Research Centre, Our Lady's Hospital for Sick Children, Crumlin, Dublin, Ireland</td>
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<tr>
<td>12:05</td>
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<td>&quot;SURGEONS ON THE FIRING LINE&quot;</td>
<td>A panel of 4 surgeons will discuss their management of cases presented to them, CHAIR: Dr. Andrea Winthrop</td>
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<td>13:00</td>
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<td>ANNUAL MEETING ADJOURNS</td>
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ABSTRACTS
RÉSUMÉS

Abbreviations

O  original 10 minute paper
R  resident paper
C  5 minute case/technique report
CONSERVATIVE MANAGEMENT OF PANCREATIC TRAUMA IN CHILDREN

M.S. Keller, K. Sartorelli, D.W. Vane
University of Vermont, Burlington (Vermont) USA

Objective: To analyze current treatment patterns of pancreatic injury in children.

Method: All patients (age < 19) identified in the National Pediatric Trauma Registry and a rural level 1 Pediatric Regional Resource Center (> 40,000 children), having traumatic pancreatic injury (ICD9 codes 863.81-.84, 863.91-.94 were reviewed. (Significance by Fischer's exact test and Student's t-test, \( p < 0.05 \)).

Results: Over a 7 year period, 150 children were identified with pancreatic injury. Thirty (20%) sustained penetrating abdominal injury requiring emergent celiotomy and 120 sustained blunt injury. Only 14 (47%) of the children sustaining penetrating injury required pancreatic procedures (7 distal resections, 3 simple repairs, 2 enteric anastomoses, 2 other). Overall, only 20% (24) of the blunt injuries required surgical intervention specific to the pancreas. This group included 10 (8%) pancreatic resections, 8 (7%) drainage procedures for pseudocyst and 6 other, diverse operations. Ninety-six (80%) blunt injuries were successfully managed expectantly without sequelae with a wide variety of injuries included. The frequency of operative intervention decreased over the last four years of the study (27% vs 15%, \( p = 0.01851 \)), coinciding with a decreased in the frequency of drainage procedures. The need for surgical intervention was not influenced by age, ISS or PTS (\( p > 0.05 \)). Associated abdominal injuries were common (2/patient) but did not influence pancreatic management. No deaths were attributed to the pancreatic injury in this series, and no significant complications associated with expectant management occurred.

Conclusions: The inherent normal ductal structure in the child's pancreas allows management protocols to differ from adults and permits self resolution of many injuries. These data indicate that expectant observation of pancreatic injuries, with subsequent interventions based on clinical course, appears to supplant conventional surgical tenants.

Dr. D.W. Vane
University of Vermont
Department of Surgery
Given Bldg, Room D317
Burlington (Vermont) 05405 USA
Tel. (802) 666-4274  Fax (802) 666-4439
DIAGNOSIS AND MANAGEMENT OF DUODENAL INJURIES IN CHILDREN

J. Shileyansky, M. Kreller, L.M. Sena, P.S. Babyn, R.H. Pearl
Hospital for Sick Children, Toronto (Ontario) CANADA

Objective: Traumatic duodenal perforations in children pose a diagnostic and therapeutic challenge. To identify specific diagnostic criteria and define an optimal therapeutic protocol, we reviewed all duodenal injuries treated at our institution in the past 10 years. Methods: There were 14 hematomas and 13 perforations. The diagnosis was confirmed by CT, US, UGI or at laparotomy. The clinical and CT findings of the 2 groups were compared. Suspected hematomas were managed expectantly while perforations were treated surgically. Results: Children with perforations had higher ISS scores (25 vs 10*), but the 2 groups could not be differentiated based on presenting signs, symptoms or laboratory findings. 25 associated injuries (10 pancreatic) occurred in 19 children. CT findings of retroperitoneal air or contrast were seen in 8 to 8 perforations and in 0 of 10 hematomas*. CT findings of intra or retroperitoneal fluid, mesenteric enhancement, and thickened duodenal wall did not differentiate the 2 groups. Duodenojejunostomy was performed in 1 and primary repair in 11 children with perforation. In 5, duodenostomy tube drainage with feeding jejunostomy or gastrojejunostomy were added. Complications occurred in 3 of 4 children in the first 5 years of the study and in 2 of 9 children in the last 5 years. The decreased morbidity correlated with reduced time to definitive therapy (38 vs 7.8 hrs.) Duodenal fistulae resulted in 3 of 7 treated without duodenostomy tube drainage and 0 of 5 treated with drainage*. Enteral feeds resumed faster (average 12 vs 27 days) if repair of perforation was combined with feeding jejunostomy or pyloric exclusion and gastrojejunostomy. Children with hematoma resumed eating an average of 16 days after injury. Only 1 required surgery for persistent obstruction. Conclusion: The findings of retroperitoneal air and contrast extravasation on CT accurately distinguish duodenal perforation from hematoma. Conservative management of hematoma is safe and effective. Primary repair of perforations with duodenostomy tube drainage results in fewer postoperative complications, while gastrojejunostomy or feeding jejunostomy shorten the time to resumption of feeds. Primary repair, gastric and duodenal drainage combined with feeding tube or gastrojejunostomy are the keys to safe and effective management of perforations.

* (p < 0.01)

Dr. R.H. Pearl
The Hospital for Sick Children
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Toronto (Ontario) CANADA
M5G 1X8
To Tube or Not to Tube? Do Infants and Children Need Post-laparotomy Gastric Decompression?

A. Sandler, D. Evans, S.H. Ein
Hospital for Sick Children, Toronto (Ontario) CANADA

Purpose: The purpose of this study is to evaluate the role of NG decompression after laparotomy in a pediatric surgical practice.

Methods: Ninety-four children who underwent abdominal surgery by a single surgeon were consecutively prospectively managed without postoperative NG tubes. Patients were excluded from this study for either bowel obstruction or intra-abdominal infection. These children were compared with 94 retrospective matched controls who were routinely managed with postoperative NG decompression by the same surgeon. Data was analyzed with regard to patient, operative and outcome variables.

Results: There was no difference in gender or age (3.8 ± 0.5 yrs vs 3.5 ± 0.4 yrs; p > 0.7) of patients between the two groups. Similarly, no difference in postoperative complications occurred (p > 0.8). However, there was a higher incidence of postoperative vomiting (22% vs 11%; p < 0.05) in the children who did not get postoperative NG decompression. Nevertheless, a significant decrease in time to first feed, first stool and discharge was noted in the group of patients in whom NG tubes were omitted (p < 0.05).

Conclusions: Nasogastric decompression does not need to be routinely used in the pediatric patient undergoing abdominal surgery, as there is no difference in postoperative complications.

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The Hospital for Sick Children
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Toronto (Ontario) CANADA
M5G 1X8

Tel. (416) 813-7340 Fax (416) 813-7477
ADRENOCORTICAL TUMORS IN CHILDHOOD.
24-YEAR EXPERIENCE

S.K. Mayer, C. Deal, K. Chun, A.X. Holterman, N. Gagné, A.L. Bensoussan,
D. St-Vil, S. Yazbeck, L. Oligny, H. Blanchard
Hôpital Sainte-Justine, Montreal (Quebec) CANADA

Adrenocortical lesions, non neuroblastoma, non pheochromocytoma are
rare in childhood and adolescence. The prognostic significance of tumor size,
weight and histologic grade are still unclear.

A total of 10 patients, (5 M, 5 F), with a median presentation age of 8.5
years (1.5 - 16 years) were identified. Five presented with virilizing symptoms,
2 with cushingoid symptoms, 1 with both and two others had non-specific
symptom. Time interval between onset of symptoms and diagnosis was an
average of 20 months (median 10 months). Hormone profile correlated well
with clinical presentation in 8 patients. Two patients with non-specific
symptoms had an aldosterone producing lesion and androgen secreting tumor
respectively. Nine patients underwent complete surgical excision, with 1
intraoperative spillage. Median tumor weight was 71 gm (11gm - 750 gm).
Three lesions were < 5 cm in size, 5 between 5-10 cm, and 1 was > 10 cm.
Three tumors had capsular and/or vascular invasion. Three patients received
chemotherapy: 1 with inoperable metastatic disease, 1 with tumor size between
5-10 cm and capsular invasion, 1 with tumor size < 5 cm but capsular, vascular
invasion and anaplastic features were found. Nine patients are doing well,
without incidence of recurrent disease with a median follow-up of 2 years (3
months - 13 years). The patient with metastatic disease died 3 years after
diagnosis.

A review of the literature suggests that the large tumors have a worse
prognosis. Our results do not support this. Furthermore unlike adrenocortical
tumors in adults, our data suggest that advanced histologic grade doesn't
necessarily correlate worse with prognosis. We believe that guarded optimism
is warranted even with tumors larger than 5 cm.

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3175 Côte Sainte-Catherine
Montreal (Quebec) CANADA
H3T 1C5

Tel. (514) 345-4688 Fax (514) 345-4964
CROHN’S DISEASE IN THE PEDIATRIC AGE GROUP:
A 15 YEAR REVIEW

J. Wong, P. Fitzgerald, R. Issenman
Children’s Hospital at Chedoke-McMaster, Hamilton (Ontario) CANADA

Objective: To compare pediatric Crohn’s disease (CD) patients who required surgical management with those successfully managed medically and to review surgical variables and outcomes.

Methods: A review of hospital charts and the IBD Patient Database was done for all patients with CD for the period 1979 to 1994. Patient, disease and surgical variables were recorded.

Results:

<table>
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<tr>
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<th>SURGICAL GROUP</th>
<th>MEDICAL GROUP</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Males</td>
<td>25</td>
<td>50</td>
<td>75 ns</td>
</tr>
<tr>
<td>Females</td>
<td>11</td>
<td>24</td>
<td>35 ns</td>
</tr>
<tr>
<td>Mean age at Dx</td>
<td>12y 10m</td>
<td>13y 1m</td>
<td>13y ns</td>
</tr>
<tr>
<td>Mean dur of symptoms</td>
<td>11.8 m</td>
<td>8.3 m</td>
<td>9.6 m ns</td>
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Forty-eight patients had primarily ileocecal disease, 49 only small bowel, 12 only large bowel and 1 had gastroduodenal disease. Thirty-four elective and 11 emergency procedures were done with a total of 4 major and 6 minor postoperative complications. Analysis of disease location revealed that patients with ileocecal disease had a significantly higher rate of surgical intervention (46%) compared to those with only small bowel (26%) or only large bowel (16%) disease. Twelve patients have had a recurrence of their disease after initial surgery.

Conclusions: (1) Sex, age at diagnosis and duration of symptoms at diagnosis were not predictive of requiring surgery. (2) Patients with ileocecal involvement appear to have a significantly greater chance of requiring surgery. (3) Complication rates and risk of CD recurrence remains high in these patients.

Dr. Peter Fitzgerald
Children’s Hospital at Chedoke-McMaster
1200 Main Street West, Room 4E2
Hamilton (Ontario) CANADA
L8N 3Z5

Tel. (905) 521-2100 ext. 5231 Fax (905) 521-9992
HISTOPATHOLOGICAL ANALYSIS TO EVALUATE
THE ROLE OF INTERVAL APPENDECTOMY

M.V. Mazziotti, E.F. Marley, P.G. Fitzgerald, M. Walton,
J.C. Langer, A.L. Winthrop
Washington University School of Medicine, St. Louis (Missouri) USA
McMaster University, Hamilton (Ontario) CANADA

Objective: The treatment of appendiceal abscess is controversial. For patients initially treated "conservatively" with antibiotics ± drainage, the role of interval appendectomy (IA) is an area of considerable debate. Without IA, the true risk of recurrent disease are uncertain, and large, long-term, prospective studies are unavailable. To evaluate the role of IA, we reviewed the histopathologic specimens from patients with presumed appendiceal abscess treated by IA.

Methods: Over a 7 year period, 162 children presented with perforated appendicitis. Eighteen had localized abscessed treated "conservatively", followed by IA. Standard histopathological sections of 17 of the 18 appendices were examined by one pathologist who was blinded to the patient clinical data and to the interpretation of the original reporting pathologists.

Results: Of the 11 boys and 7 girls (mean age 7.4 ± 3.4 years), 8 underwent percutaneous drainage and 1 had operative drainage. All received IV antibiotics for a mean of 8.6 ± 3.2 days, with a hospital stay of 10.4 ± 8.3 days. IA was performed at a mean of 92.7 ± 20.7 days after initial admission, with discharge 2 ± 1.3 days after surgery. There were no complications. Histopathological review revealed normal appendix (4), normal appendix with mild serositis (6), normal appendix with unsuspected resolved Meckel's diverticulitis (1), appendiceal duplication (1), granulomatous appendicitis (3), and acute appendicitis (2). All appendices had patent lumens, and in 15, the entire appendix was present to the tip. There was no correlation between the histopathological findings and the time interval between abscess and IA.

Conclusions: IA was performed with no morbidity and a short hospital stay. Two patients had recurrent acute appendicitis, 5 had unsuspected pathology (duplication, Meckel's diverticulitis, granulomatous inflammation), and none of the appendices had an obliterated lumen, suggesting that all patients may be at long-term risk for recurrent disease. These data support the role of IA in children with appendiceal abscess treated "conservatively", and suggest the need for large, prospective studies.

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EMPYEMA THORACIS IN CHILDREN: 26-YEAR REVIEW

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Purpose: The appropriate management of pediatric empyema thoracis remains controversial.

Methods: Forty-seven cases of empyema thoracis over a 26-year period were reviewed. The management of empyema included initial diagnostic thoracentesis and classification as acute, fibropurulent, or chronic. If "acute", therapeutic tap, tube thoracostomy, or no surgical intervention was performed. "Fibropurulent" empyemas were uniformly treated with tube thoracostomy. The lung was decorticated when either the empyema was encased by a thick peel, had recurred and was multiloculated, was refractory and the patient remained clinically unwell, or had occurred as a complication of previous thoracotomy.

Results: All "acute" empyemas responded to antibiotics irrespective of drainage (average days with fever 17, in hospital 27). Of the "fibropurulent" empyemas in our review, complete drainage was attained in 7/39 (18%) and decortication was not required in any empyema that was completely drained; loculations persisted in 25/39 (64%) after tube thoracostomy but nonetheless resolved; the remaining 7/39 (18%) with persistent loculations required formal decortication. Of the fibropurulent empyemas that responded to tube thoracostomy the average duration of fever was 13 days and hospitalization 23 days. Of those requiring decortication the average duration of fever was 24 days and hospitalization 40 days.

Conclusion: These results will allow a baseline for comparison of newer strategies (fibrinolytics and early thoracoscopy) that may reduce days of fever, hospitalization, and risk of formal decortication.

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IS THORACOSCOPICALLY AIDED DEBRIDEMENT OF EMPYEMA ADVANTAGEOUS IN CHILDREN?

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Objective: Despite continuing advances in antimicrobial therapy, complications of pulmonary infections in children are still associated with significant morbidity. The aim of this study is to determine the place of thoracoscopy aided pleural debridement (TAPD) in children with complicated empyema and to assess its possible advantages over traditional approaches.

Material and methods: From Jan. 1991 to March 1996, 20 children (ages 2 months to 16 years; medium 7, mean 7) were diagnosed with empyema (right: 11, left: 9). Their charts, radiographs and follow-up course were reviewed. All had typical clinical and radiological findings of empyema. Additionally, one had necrotizing pneumonitis.

Results: Treatment modalities included: antibiotics only (n-3), antibiotics with: tube thoracostomy (n-7), open thoracotomy (n-5), and TAPD (n-5). Children treated with antibiotics alone had an average (avg) length of stay (LOS) of 31 days. Those managed with tube thoracostomy had an avg LOS of 13 days. (Avg chest tube use: 8 days.) The 5 children who underwent thoracotomy had an avg LOS of 16 days. The avg post-op LOS was 13 days (avg post-op chest tube use: 11 days). The 5 children treated with TAPD had an avg LOS of 12 days. The avg post-op was 8 days (avg post-op chest tube use: 6 days). The thoracotomy and the TAPD groups were comparable. Children with TAPD had considerably less pain and recovered faster. Four became afebrile in 36 hrs and had normal chest x-rays at 1 month. The remaining child, with the additional necrotizing pneumonia, had a residual opacification at 1 month, but no empyema.

Conclusion: Thoracoscopy aided pleural debridement of empyema is promising in children whose lungs do not expand promptly after tube thoracostomy or have a persistent loculated empyema.

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ASSESSMENT OF THE POSTOPERATIVE VISIT AFTER
ROUTINE INGUINAL HERNIA REPAIR:
A PROSPECTIVE RANDOMIZED TRIAL

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Objective: Management of pediatric patients undergoing routine inguinal hernia repair usually includes a postoperative clinic visit. We wished to assess the necessity for the traditional postoperative visit.

Methods: We conducted a prospective randomized controlled trial involving one hundred patients undergoing a routine inguinal hernia repair. Patients were randomized to receive either a follow-up visit at 4 weeks or a detailed instruction sheet and no follow-up visit. Parents were given a telephone questionnaire to determine overall satisfaction with their child's care and usefulness of the follow-up visit or instruction sheet.

Results: Forty-seven of 50 parents of patients randomized to a follow-up clinic visit (FU) and all 50 parents in the no follow-up group (NFU) completed the questionnaire. Sixty-eight percent of the FU group found the follow-up visit "helpful" and 59% found it "necessary". Fifty-six percent would have been satisfied with a telephone call instead of a visit. In the NFU group only 4% thought a follow-up visit would have been "helpful". There was no difference between groups in overall satisfaction with the care received as assessed on a 5 point scale (4.7 FU group vs 4.7 NFU group).

Conclusion: Accurate postoperative instruction and open access to follow-up when required is as effective as the traditional postoperative clinic visit for patients who have undergone routine inguinal hernia repair.

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UTILITY OF HELICAL CT FOR DIAGNOSIS AND 
OPERATIVE PLANNING IN TRACHEOMALACIA AFTER 
REPAIR OF ESOPHAGEAL ATRESIA

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Aim: It has been reported that tracheomalacia is best diagnosed by 
bronchoscopy, and best treated by aortosternopexy. At the time of 
aortosternopexy, however, trial and error is often required to determine the 
direction of traction which yields the largest tracheal lumen.

In this study, we utilized helical computed tomography (CT) in patients 
with tracheomalacia to determine its utility in preoperative diagnosis and 
operative aid.

Patients and methods: We utilized helical CT in 3 infants (aged 1 to 5 
months) who were diagnosed tracheomalacia by bronchoscopy after repair of 
esophageal atresia with tracheoesophageal fistula. The area from the vocal 
cords to the carina was surveyed with the patient breathing spontaneously 
under sedation. The data obtained were subjected to the three-dimensional 
(3D) imaging reconstruction process.

Results: A 3D reconstruction accurately revealed the location of the 
luminal collapse and a diameter at its narrowest point. The most effective form 
of external suspension of the trachea could be determined preoperatively. 
Then, aortosternopexy was performed and a significant change in the diameter 
of the tracheal lumen was observed bronchoscopically. Postoperatively, helical 
CT also gave visual proof of the relief of compression and the patients have 
remained well.

Conclusion: 3D helical CT is helpful not only for diagnosing 
tracheomalacia but also for operative planning of aortosternopexy. It may be 
used to determine the direction of traction which will provide the greatest 
increase in tracheal lumen size.

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ESOPHAGEAL BALLOON DILATATION:  
A REVIEW OF 8 YEARS EXPERIENCE

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One hundred forty-four esophageal balloon dilatations in 48 children have been performed at our institution over an eight year period. Age ranged between 2 months and 17 years. Etiology of the stenosis was anastomotic in the majority of patients. Other less common causes included caustic ingestion, congenital abnormality, inflammatory, peptic, and restrictive fundoplication.

Fifty percent of patients were successfully treated with a single dilatation. Of the patients whose symptoms recurred after the initial dilatation, 88% had significant gastro-esophageal reflux. Balloon dilatation was successful in nearly all patients after reflux was controlled. Stricture resection was required in only three patients. A total of 15 dilatations was needed for symptomatic relief on one patient, but successful outcome was achieved in nearly all others with 1 to 3 dilatations. Two patients developed esophageal perforation secondary to the balloon dilatation. This complication was documented at the time of the procedure and responded well to non-operative management.

In summary, balloon dilatation is a safe and effective technique for the treatment of esophageal stenoses in children.

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ANALGESIA REQUIREMENTS FOLLOWING OPEN AND LAPAROSCOPIC FUNDOPPLICATION

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Aim: To compare the morphine analgesia requirements for paediatric laparoscopic and open fundoplication.

Method: The analgesia requirements of 36 children were studied (open n = 18, laparoscopic n = 18). Data included postoperative morphine requirements, adjuvant analgesia (caudal anaesthetic, wound infiltration, non steroidal anti-inflammatory drugs), pain and sedation scores, days of morphine analgesia required, and complications. The morphine prescribing was monitored by the acute pain team (anaesthetist or pain control nurse) independently of the surgical team. The pain score was graded using nursing and parental observations.

<table>
<thead>
<tr>
<th>RESULTS (*statistically significant)</th>
<th>OPEN</th>
<th>LAPAROSCOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age Range</td>
<td>0-5</td>
<td>6-13</td>
</tr>
<tr>
<td></td>
<td>6-13</td>
<td>0-5</td>
</tr>
<tr>
<td>Number</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Mean Age</td>
<td>1.99</td>
<td>8.78</td>
</tr>
<tr>
<td></td>
<td>3.5</td>
<td>9</td>
</tr>
<tr>
<td>Mean Total Morphine (mg/kg)</td>
<td>0.517</td>
<td>0.502</td>
</tr>
<tr>
<td></td>
<td>0.343</td>
<td>0.508</td>
</tr>
<tr>
<td>Mean Day 1 Morphine (mg/kg) *</td>
<td>0.181</td>
<td>0.191</td>
</tr>
<tr>
<td></td>
<td>0.343</td>
<td>0.404</td>
</tr>
<tr>
<td>Pain Scores</td>
<td>1.3</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>1.14</td>
<td>1.27</td>
</tr>
<tr>
<td>Mean Days of Morphine *</td>
<td>2.4</td>
<td>2.22</td>
</tr>
<tr>
<td></td>
<td>1.182</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Analysis of the data reveals no significant difference in the total amount of analgesia required following either technique. Laparoscopic fundoplication required significantly more morphine on the first postoperative day (p < 0.0125) and significantly fewer days of analgesia (p < 0.05). Adjuvant analgesia and pain scores were not significantly different, suggesting similar levels of analgesia from the respective regimes.

Conclusions: The overall morphine requirements for laparoscopic and open fundoplication are similar, but significantly fewer days of morphine analgesia are required following the laparoscopic procedure. If the morphine requirements are representative for pain, the data suggests a quicker return to normality rather than reduced pain following laparoscopic fundoplication.

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THE UNCUT COLLIS-NISSEN FUNDOPICATION:
RESULTS IN 79 CONSECUTIVE HIGH-RISK CHILDREN

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Purpose: Nissen fundoplication fails to control gastroesophageal reflux (GER) in up to 25% of children with neurologic impairment of chronic lung disease. The uncut Collis modification lengthens the intra-abdominal esophagus and recreates an acute angle of His, improving the anti-reflux effect without opening the stomach. This study reviews the results and incidence of GER in pediatric patients following uncut Collis-Nissen fundoplication.

Methods: Seventy-nine consecutive children had an uncut Collis-Nissen fundoplication performed over a 5-year period. Median age was 1.4 years (range one month to 18 years). Risk factors for GER included neurologic impairment (77%), chronic lung disease (38%), and esophageal atresia (3%). Indications for surgery were failure to control GER medically, with respiratory complications (73%), esophagitis (67%), and/or failure to thrive (61%). Pathologic GER was documented by pH probe, endoscopy, or upper gastrointestinal radiography. Concurrent procedures included gastrostomy tube placement in 84% and pyloroplasty in 42%. Follow-up data was available for all patients.

Results: GER was controlled in 98% of patients after a median follow-up of 1.8 years. Thirty-four percent had mild gastrointestinal symptoms requiring medication, and one patient required a feeding jejunostomy for severe retching. There were minor postoperative complications in 23%, major complications in 3%, and one postoperative mortality. Eleven late deaths were unrelated to surgery.

Conclusion: The uncut Collis-Nissen fundoplication provides excellent control of GER in children, and is associated with acceptable morbidity and low mortality. It is indicated particularly in children with neurologic impairment and/or chronic lung disease.

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THE EFFECTS OF TRACHEAL OCCLUSION ON TYPE II PNEUMOCYTES IN FETAL LAMBS

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Fetal tracheal occlusion (TO) has been shown to lead to lung hyperplasia in various animal models and this procedure has already been carried out in human fetuses with CDH.

Purpose: To examine the effects of TO on Type II pneumocytes.

Methods: TO was carried out with a Swan Ganz or Fogarty catheter. Group I: Specimens from fetuses who underwent TO for 3 weeks or 1 week before delivery near term (morphometric changes previously reported). Group II: TO for 2 weeks then the balloon was deflated for 1 week before delivery.

All specimens were analyzed using the surfactant protein C (SPC) mRNA as a specific marker for Type II pneumocytes. Total RNA was isolated from frozen lung tissue and Northern blots were hybridized with a CDNA probe specific for sheep SPC. In situ hybridization studies were done on sections from paraffin-embedded tissue. Electron microscopy (EM) was also used to evaluate and quantitate Type II cells.

Results: TO results in a dramatic decrease in Type II pneumocytes as shown by SPC mRNA expression on Northern blots and by the number of cells expressing SPC after in situ hybridization. This was confirmed by EM (1.3 type II cell per 50 mm² of alveolar surface vs 20 cells/50 mm² in controls). Release of the TO one week before sacrifice allowed a recovery of Type II cells.

Conclusion: Lung growth after TO appears to occur at the expense of Type II cell differentiation. Strategies are needed to compensate for this before human application.

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COLLAGEN INDUCES CYTOKINE RELEASE BY FETAL PLATELETS: IMPLICATIONS IN SCARLESS HEALING

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Objective: This study was designed to test the hypothesis that collagen, present at the site of injury, is a poor inducer of cytokine release by fetal platelets. This may help explain the minimal inflammation characteristic of fetal wounds.

Methods: Platelets were isolated from the blood of 6 fetal swine at day 80 of gestation (term = 114 days), re-suspended in plasma and incubated with arachidonic acid (0.5 mg/ml) (a potent agonist of fetal platelets), collagen (0.19 mg/ml), or saline for 6 minutes. The plasma was then analyzed for platelet-derived growth factor (PDGF)-AB and tranforming growth factor (TGF)-β1 by enzyme-linked immunosorbent assays; and the platelet pellets examined ultrastructurally by transmission electron microscopy (TEM). Data were analyzed by paired Student’s t-test.

Results: The TEM of arachidonate-treated platelets showed the cells to be aggregated in clumps and devoid of granules. Collagen-treated platelets had undergone conformational changes but with no difference in the quantity and homogeneity of their secretory granules compared to saline-treated controls. There was a significant increase in TGF-β1 release into plasma following treatment with collagen (6.64 ± 0.36 ng/ml) and arachidonate (7.64 ± 0.77) compared to control (4.74 ± 0.36) p < 0.05. Likewise, PDGF-AB release was significantly higher following collagen (0.22 ± 0.02 ng/ml) and arachidonate treatment (0.44 ± 0.04) compared to control (0.09 ± 0.02) p < 0.05.

Conclusion: We conclude that fetal platelets do release cytokines in response to collagen despite the poor aggregation noted. Therefore, impaired aggregation to collagen cannot solely explain the minimal inflammation following fetal wounding.

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DOES EXTRACORPORAL LIFE SUPPORT (ECLS) BENEFIT NEONATES WITH CONGENITAL DIAPHRAGMATIC HERNIA (CDH)?
THE APPLICATION OF A PREDICTIVE EQUATION

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Survival of CDH neonates remains poor despite the advent of ECLS. We previously identified 4 independent survival predictors of CDH neonates, treated by our center, between 1983-1993 (ventilatory index (Vi), PaCO\textsubscript{2}, birthweight (BW), 5 min. APGAR). Combined these predictors, via logistic regression analysis, our equation, \( P = \left[1 + e^{1.9 - 0.65 \text{APGAR} - 0.032 \text{BW} + 0.005 \text{Vi} + 0.003 \text{PaCO}_2}\right]^{-1} \), standardized the survival rates for degree of illness. This allowed a direct comparison of patient survival before and after ECLS availability to determine whether ECLS improved outcome.

62 CDH neonates received conventional therapy between 1983-1993 (66% survival). Since ECLS availability in 1994, we treated 32 CDH patients (69% survival). All patients underwent treatment regardless of their predicted outcome. Eighteen patients received conventional therapy; 16/18 survived (89%). Fifteen of the 16 neonates who survived were predicted correctly (94%). Forteen patients underwent the same care with the addition of ECLS; 6/14 survived (43%). Six of the 8 neonates predicted to survive, lived. All 6 patients predicted to die, died despite the addition of ECLS. The mean hospital cost, per ECLS patient that died, was $277,264.75 \pm $59,500.71 (SE).

An adjusted odds ratio analysis (O.R.), using the 4 independent predictors, assessed the risk associated with adding ECLS (= 1.25, 25% increased risk of death with ECLS). Although our cohort was small, the O.R. strongly suggested no advantage of ECLS, even when adjusting for degree of illness.

At our center, ECLS failed to improve outcome of neonates with CDH.
A UNIQUE PRESENTATION OF ACTINOMYCOSIS IN A CHILD

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Actinomycosis of the thyroid gland has been reported only 14 times since its first description in 1894. We present a unique case of such a lesion occurring in a 10-year-old girl who presented with a painless, non-inflammatory left neck mass of three weeks duration. Physical exam revealed a firm, nontender mass measuring 3 X 4 cm within the left thyroid lobe. The overlying skin demonstrated no inflammatory changes. Ultrasonography revealed a solid, homogeneous mass within the superior pole of the left thyroid lobe. Multiple enlarged left sided cervical lymph nodes were also noted and a presumptive diagnosis of thyroid neoplasm was made. Within one week, however, this lesion became erythematous and fluctuant and needle aspiration was attempted unsuccessfully. Operative incision and drainage followed and a large abscess containing bright green granules was evacuated. Histological examination of these particles revealed classic sulfur granules containing the Actinomyces organism. Postoperatively a three month course of penicillin was given and following the removal of her wound packing, the incision healed uneventfully. Actinomycoses of the thyroid gland is extremely rare and its occurrence in childhood has not previously been reported in the English literature. In the current report the discrete nature of this lesion led to the presumptive diagnosis of a neoplasm. Cervicofacial actinomycosis is thought to develop from an intraoral source and spreads by direct extension rather than by lymphatic or hematogenous routes. The subject of the current case report had no intra-oral pathology. It is therefore suggested that access to the thyroid gland for the Actinomyces organism may be via an intact thyroglossal duct. Treatment with drainage and long-term penicillin administration is associated with complete recovery in the majority of cases.

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INTRA-HEPATIC BILIO-DIGESTIVE DERIVATION FOR COMPLETE EXTRA-HEPATIC BILIARY OBSTRUCTION IN CHILDREN

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Intrahepatic bilio-digestive anastomosis (IHBDA) is rarely practiced in pediatric surgery. We intend to report 2 children who have been successfully treated utilizing this method.

Patient I A 6 year-old-boy had total gastrectomy and distal esophagecetomy for a fibrosarcoma misdiagnosed as plasmacytoma. Subsequently, the disease progressed, invading and destroying: the left lobe of the liver, porta hepatitis and infiltrating segments V and VIII; causing severe pruritus and jaundice. After investigation, the boy was operated in June 1993. A hepatotomy of segment VI was performed, the main bile duct of this segment isolated and a termino lateral cholangio-jejunostomy Roux-y performed. After 34 months the jaundice has regressed and the boy is still living with good liver function tests.

Patient II A 1 year-old-boy received a reduced liver transplant (segments II, III and L/IV) for type 4 glucogen storage disease in 1990. In 1994 following recurrent episodes of cholangitis he was reoperated for bile duct stenosis, a new anastomosis was performed. After 3 months jaundice recurred. Cholangiography showed complete obstruction of the left duct up to the junction of the ducts of segment II and III. By hepatotomy the main branch of segment III was identified and anastomosed termino-laterally with a 6 x 1 cm gastric tube vascularized by the right gastric artery. After 2 years the boy is jaundice and cholangitis free, pre-op bilirubin 117/113 (normal 21/3), post-op 17/9.

First described by Longmire and Sandford in 1948, IHBDA is possible in children. This procedure is only indicated as rescue in circumstances where extra-hepatic biliary tree is completely obstructed.

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PROSTAGLANDIN AND HYPERTROPHIC PYLORIC STENOSIS

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The etiology of infantile hypertrophic pyloric stenosis has not been
established. It has been theorized that pyloric spasm sets up a vicious cycle of
partial obstruction and further spasm leading to eventual muscular hypertrophy.
We report three cases where prostaglandin infusion was temporally related to
gastric outlet obstruction with two infants progressing to "classical" pyloric
stenosis.

Material: Two male infants born with transposition of the great vessels
were given PGE1 infusion at 0.05 microgram/kg/min for 132 and 128 hours
respectively before definitive repair. Postoperatively they had large "spit ups".
Twelve and 36 days respectively after stopping the PGE1, pyloric stenosis was
established by palable olives and by barium and ultrasound studies. Pyloromyotomy was uncomplicated.

Case 3 was a male infant with pulmonary atresia placed on PGE1
infusion. On the next day contrast studies showed complete pyloric obstruction.
Gastrostomy on day 10 with a diagnosis of congenital pyloric web showed
mucosal hypertrophy but no thickening of pyloric muscle. Severe pyloric spasm
accounted for findings on contrast study.

Discussion: Both PGE1 and PGE2 can produce antral mucosal
hypertrophy and delayed gastric emptying. PGE2 also mediates the delayed
gastric emptying due to Interleukin 1 beta (IL1) and hypertonic saline.
Increased PGE2 has been associated with mucosal hyperplasia and progressive
lengthening of the pyloric channel and pyloric thickening demonstrated by
ultrasound. We suggest that initial mucosal hypertrophy (as in case 3) and
pyloric spasm from prostaglandin excess is the stimulus for hypertrophy of the
pyloric muscle leading to classical pyloric stenosis.

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Tel. (816) 234-3575 Fax (816) 234-3575
CONGENITAL PULMONARY LEIOMYOSARCOMA WITHOUT NON-IMMUNE HYDROPS

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Congenital lung tumors are exceedingly rare and are frequently associated with non-immune hydrops fetalis. We report the case of an infant with a congenital leiomyosarcoma of the right lung born after 35 weeks gestation following premature rupture of membranes. An antenatal ultrasound performed during the second trimester was considered normal. After birth, respiratory distress was noted with Apgars of 5 and 6 at 1 and 5 minutes respectively, but the infant did not demonstrate any hydropic changes. Intubation was required as was aggressive cardiorespiratory support including the administration of surfactant. Chest radiography and computerized tomography revealed a right lung mass and a tentative diagnosis of congenital cystic adenomatoid malformation was made. Because of persistent respiratory symptoms, surgical resection was proposed at three days of age. Thoracotomy revealed a solid mass involving the entire right lung and a right pneumonectomy was performed. Her postoperative course was complicated by pulmonary hypertension requiring nitric oxide therapy, multiple episodes of central venous thrombosis and systemic hypertension. She was discharged at two months of age with evidence of significant chronic disease in the remaining lung. Pathological examination revealed a 6 x 4 x 4.5 cm mass occupying the upper and lower lobes of the right lung with preservation of the middle lobe. Histology was that of a leiomyosarcoma. Only nine cases of this rare congenital tumor have previously been reported and in six, hydrops was present. Associated mortality was high with only four infants surviving the neonatal period. The case reported herein was not associated with hydrops and a favourable outcome followed surgery. Although a malignant tumor, complete resection is generally curative in the absence of metastasis.

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SCROTOSCHISIS ASSOCIATED WITH CONTRALATERAL MECONIUM PERIORCHITIS

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Scrotoschisis, a congenital defect of the scrotal wall associated with extracorporeal testicular ectopy, has been previously reported only twice. Meconium periorchitis is another rare scrotal anomaly indicative of an antenatally healed gastrointestinal perforation. We present a third case of scrotoschisis and the first associated with meconium periorchitis. Several hours after birth of an otherwise-normal term baby boy, scrotal exploration was performed with orchidopexy and primary closure of the scrotal wall defect. At four months of age the baby underwent a contralateral inguino-scrotal exploration with excision of a peritesticular mass of calcified meconium. The role of a normally developed scrotum in testicular descent and causes of calcified scrotal masses in infants are discussed.

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FETOSCOPIC ND: YAG-LASER COAGULATION FOR TWIN-TWIN TRANSFUSION SYNDROME IN CASES OF ANTERIOR PLACENTA

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Purpose: In twin-twin transfusion syndrome, interruption of anastomosing placental blood vessels is suggested as a mode of treatment. We report on our experience and technique in six cases of fetoscopic Nd:YAG-laser coagulation where the placenta was anterior.

Methods: In six patients (18-22 weeks), anastomosing blood vessels were coagulated using Nd:YAG-laser. Though minimal skin incision, and under ultrasound guidance, a 12 French cannula is placed, avoiding major uterine vessels and the anterior placenta. A 1,2 mm fiber scope in a dual working sheat, bent 35°, allows complete covering of the placenta. All vessels crossing the intertwin membrane were coagulated with a 400 μm fiber, using a non-touch technique, in continuous mode, and with a maximum output of 45 watts.

Results: One patient delivered two healthy babies at 33 weeks. Three pregnancies are ongoing with both fetuses well at gestational ages between 19 and 32 weeks. In one patient, the donor twin died in utero six weeks postoperatively from cardiac failure and hypertensive cardiopathy. The receptor twin was born alive at 29 weeks. In one patient an intraoperative uterine bleeding occurred, leading to a retromniotic dissection, and the intervention needed to be aborted. Twelve weeks after the procedure, at a gestational age of 32 weeks, this pregnancy is still ongoing. No maternal complications occurred.

Total fetal survival at the time of this report is 11/12 (91.6%)

Conclusion: Nd:YAG-laser coagulation in cases of anterior placenta is technically feasible and safe, using open trocar placement and a bent endoscope.

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BOTULIN TOXIN USE IN PEDIATRIC ESOPHAGEAL ACHALASIA: A CASE REPORT

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Objective: Esophageal achalasia (EA) has been historically treated by esophageal dilatation, myotomy with or without fundoplication. Botulin toxin's use in pediatric EA has not been described previously. Our objective was to observe the efficacy of Botulin toxin (Botox-Allergan) injection into the lower esophageal sphincter (LES) for EA.

Methods: Complete history and physical was performed. Upper gastrointestinal contrast study and esophageal manometry were performed before and one week after the Botulin toxin injection. Twenty-four hour pH study and chest X-ray was done prior to the injection. Clinical follow-up allowed documentation of symptoms.

Results: An eleven year old boy had a 9 month history of frequent pneumonia and productive cough and a one year history of chest discomfort and odynophagia. Chest X-ray showed changes secondary to aspiration. Following UGI series, 24 hour pH study (0% reflux), esophageal manometry an endoscopy was performed revealing a large volume of retained food. A 4 quadrant injection was performed with a total of 100 units of Botulin toxin into the LES. UGI series showed improvement in esophageal emptying. Esophageal manometry showed impressive improvement in LES pressure (pre-injection mean 44.1 mm Hg to post-injection mean of 16.6 mm Hg), % relaxation (pre-30% to post-58.5%), and duration of relaxation (pre-1.9 seconds to post-11 seconds). The patient has not had any further respiratory symptoms and has no further chest pain or odynophagia.

Conclusion: Botulin toxin injection is simple and effective for EA. A proposal for a multicenter pediatric trial is presented to determine overall response and duration of results.

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UNUSUAL FINDINGS IN THE INGUINAL CANAL:  
A REPORT OF 4 CASES

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We present 4 previously unreported pathological entities of the inguinal canal.

A 3-month old boy presented with an inguinal mass. Groin exploration revealed a cystic lymphangioma within a hernial sac. Complete resection was followed by imaging studies confirming the absence of associated lesions. There is no recurrence at one-year follow-up. This is the first documented isolated inguinal canal lymphangioma.

A 15-month old female presented with a small irreducible inguinal nodule. Groin exploration showed a mass outside a hernial sac, histologically a neuroblastoma. A small primary para-aortic tumor was found radiologically and successfully resected. Inguinal canal neuroblastoma metastases have not been previously reported.

Another 6-year old female presented with an irreducible groin mass and was explored for probable incarcerated ovary. An epidermoid inclusion cyst was found inside the inguinal canal, with no evidence of hernia. There are no previous reports of such cysts of the inguinal canal in children.

A 14-year old female had undergone bilateral inguinal hernia repairs soon after birth. She presented with a painful groin swelling, and imaging studies confirmed the presence of an ovary close to the previous repair. Groin exploration revealed a large hemorrhagic ovarian cyst in an intact hernial sac. Successful ovarian cystectomy and hernia repair were curative. This is the first report of an incarcerated ovarian cyst in the pediatric population.

Not all inguinal masses are hernias, and an awareness of rare other etiologies will allow appropriate preoperative investigations to be performed in suspicious cases.

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THE USE OF A NEW 9 FR BALLOON-TIPPED CANNULA FOR ENDOSCOPIC FETAL SURGERY IN THE OVINE MODEL

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Purpose: To access the amniotic cavity with a cannula which presents leakage of amniotic fluid and membrane dissection, is atraumatic to the fetus and has a small diameter. The use of a 9 Fr inner diameter (ID) flexible balloon-tipped cannula is described, inserted using a Seldinger technique.

Methods: In ten time-dated pregnant ewes, at 90 days gestation (term = 145), a 5 mm balloon cannula was inserted through a mini-hysterotomy. A 5 mm endoscope was then used to monitor the performance of the experimental cannula. An 18G needle was inserted in the uterus, avoiding placental cotyledones and fetal trauma. Next, a J-wire was inserted and the dilator-peelway assembly was pushed in, dilating the puncture site radially. After removal of the dilator, the cannula was introduced, the balloon was inflated, and the sheath was peeled away. The cannula was withdrawn until the balloon rested snugly against the membranes, and a silicone disc secured its position on the external surface. At the end of surgery the puncture site was closed with a suture placed through the myometrium.

Results: In all cases, the consecutive insertion of needle, dilator and peelaway sheath could be performed without bleeding, fetal trauma or membrane dissection, although slight tenting of the membranes occurred during dilatation. During intra-uterine manipulation for up to two hours, no leakage through the puncture site or membrane dissection occurred. The ultra-short, round-tipped intra-amniotic part of the cannula prevented direct fetal trauma during surgery. The malleability of the cannula allowed flexible instrumentation.

Conclusions: This new cannula can be inserted without complications, and meets all the requirements for endoscopic fetal surgery. In addition, its small diameter allow safe insertion through highly vascularized areas and its flexibility permits the use of a wide variety of instruments.

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HEMANGIOMA OF THE UMBILICAL CORD MIMICKING AN OMPhALOCELE

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Background: The intrauterine diagnosis of abdominal wall defects is usually straightforward and highly accurate. However, a large cavernous hemangioma of the umbilical cord, misdiagnosed both antenatally and immediately following birth as an omphalocele, nearly led to a major intra-operative mishap.

Case report: A 33-year old multiparous woman was referred for an obstetric US because of an elevated alpha-fetoprotein. Serial US examinations, starting at 15 weeks, were consistent with an omphalocele. Following birth at 38 weeks, the 4.2 kg girl's examination was again consistent with an omphalocele (sac: 9 x 7 cm, abdominal wall defect; 3 cm). She had no other anomalies. During the operation, a significant amount of blood loss occurred while attempting to enter the "omphalocele sac". The sac did not contain intestine or liver but consisted of multiple varicosities of intestinal size and blood clots. A tourniquet was applied, the mass and an intra-abdominal extension along the umbilical vein were removed, and the child recovered well. Histologic examination showed capillary and cavernous hemangioma.

Comment: Twenty-six cases of hemangiomas of the umbilical cord are reported. The lesion most frequently originates from the umbilical arteries but may also occur in the umbilical vein or vitelline capillaries. The placental end is most often affected. These hemangiomas represent a spectrum in anatomy and clinical presentation. They have a significant intra-uterine and post-natal morbidity and mortality, particularly if not recognized.

Conclusion: Despite its rarity, hemangioma needs to be considered in the differential diagnosis of cord masses and atypically appearing "omphaloceles". It should also be added to the growing list of causes of elevated alpha-fetoprotein.

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SURGICAL PANCREATIC COMPLICATIONS INDUCED
BY L-ASPARAGINASE

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Pancreatitis has been noted to be a potential complication in 2-5% of
patients undergoing treatment with L-asparaginase for a variety of pediatric
neoplasms, but rarely has surgical intervention been necessary. We present two
fulminant cases of L-asparaginase induced pancreatitis and review the current
literature. The first patient is a 15 year old boy who underwent induction
chemotherapy with L-asparaginase for non-Hodgkin's lymphoma. He presented
with diffuse patchy necrosis of the pancreas as well as a large infected
pancreatic pseudocyst. He subsequently required operative debridement of the
pancreas and external drainage of the pseudocyst. He is currently doing well.
The second patient is a 5 year old boy who was treated with L-asparaginase for
a diagnosis of acute lymphoblastic leukemia. Within three weeks of initiation
of therapy, he developed fulminant pancreatitis which progressed to multi-
system organ failure. CT scan demonstrated extensive pancreatic necrosis
involving 90% of the gland. He underwent surgical debridement of his necrotic
pancreas and wide drainage of the lesser sac. Postoperatively he improved but
subsequently developed multiple complications including erosion of his
gastroduodenal artery with a significant intra-abdominal bleed which was
controlled with angiographic embolization. He subsequently developed erosion
of his endotracheal tube into the innominate vein and expired. L-asparaginase
induced pancreatitis has been described following therapy for various pediatric
neoplasms, and the reported cases have usually been self-limiting. However,
our cases demonstrate potentially fatal sequelae of this complication, and
mandate early diagnosis with appropriate surgical intervention in this setting.

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CAPSULECTOMY: A CURE FOR THE PAGE KIDNEY

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Hypertension is an uncommon complication after renal trauma in children. We treated a 16 year old boy who developed hypertension after blunt renal trauma by capsulectomy of the kidney.

Case report: A 16 year old boy sustained a left perinephric hematoma, splenic laceration and left femur fracture in a motor vehicle collision. He was treated non operatively for the intra-abdominal injuries. Four months post-injury he developed progressive hypertension. Evaluation revealed a left perinephric fluid collection with compression of the kidney on CT scan, diminished perfusion to the left kidney on renal scan, a normal renal Doppler study and a normal renal angiogram. Twelve months post-injury the kidney was explored through the flank with hilar control. A dense pseudocapsule containing serous fluid and a fibrotic renal capsule compressing the parenchyma was removed. The patient had an uneventful recovery and remains normotensive at 28 months follow-up with near equalization of renal perfusion on renal flow scan.

Conclusion: We recommend that patients with renal trauma be followed for the development of hypertension. If hypertension develops evaluation with CT scan, renal flow scan, Doppler or renal angiogram should be performed. If parenchymal compression from a fibrous encasement, diminished perfusion and normal arterial anatomy is found, a Page kidney is the cause of the hypertension. Renal capsulectomy can be curative.

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SURGICAL AND ANAESTHETIC CONSIDERATIONS OF LAPAROSCOPIC SWENSON PULLTHROUGH IN INFANTS

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Objective: Laparoscopic techniques are increasingly being adopted by pediatric surgeons for advanced procedures. We aimed to define the optimal surgical and anaesthetic conditions to perform a laparoscopic pullthrough.

Method: A literature review was done to define the ideal procedure and patient position. Subsequently three males underwent laparoscopic Swenson pullthrough at ages 3.5, 10, 11 months for biopsy proven Hirschsprung’s disease. All procedures were primary pullthrough except the youngest who had a colostomy as a neonate.

Results: The patient was positioned transversely at the end of the operating table with legs elevated on an overhead bar. This allowed surgical access from the direction of the patient’s head, right side and perineum. The anaesthetist had full access to the left side of the patient. Temperature, \( CO_2 \) peak inflation pressure, \( O_2 \) saturation and EKG were continuously monitored. Following \( CO_2 \) insufflation to 12 mm Hg via a verres needle, three 5 mm trochars were inserted in the upper abdomen. Mesenteric blood vessels were controlled with the 5 mm Endoscopic Allport rotating multiple clip applier (Ethicon) and the perirectal dissection was completed with a hook cautery down to the pelvic floor. The mobilized bowel was prolapsed out of the anus and biopsies were performed. Swenson coanal anastomosis was completed without colostomy. Average operative time was 5 hours. There were no complications. One patient had simultaneous colostomy closure.

Conclusion: This approach is simple, combining satisfactory anaesthetic access and monitoring with excellent surgical visualization. It is our preferred technique for the surgical management of Hirschsprung’s disease in infants.

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LAPAROSCOPIC PULLTHROUGH PROCEDURE FOR
THE TREATMENT OF HIRSCHSPRUNG’S DISEASE IN INFANTS
AND CHILDREN USING THE HARMONIC SCALPEL

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Hirschsprung’s disease in infants has routinely been treated by a three
stage process requiring a diverting colostomy, pullthrough procedure, and then
colostomy takedown. This algorithm requires multiple hospitalizations and
surgeries over a period of several months. We have adopted a laparoscopic
approach which allows the surgery to be performed in one or two stages with
a marked decrease in morbidity and hospital stay.

From March 1995 to March 1996, 12 infants and children, ages 7 days
to 8 years and weighing 2.3 kg to 32 kg, underwent laparoscopic pullthrough
procedures. Eight had primary pullthroughs while four had a previous diverting
colostomy.

The laparoscopic portion of the pullthrough was performed using 3 or
4 ports, size 3.5 mm or 5 mm and the ultrasonic dissector. The final
submucosal dissection was performed transrectally starting 1 cm above the
pectinate line. The rectal anastomosis was hand sewn and no patient was left
with a diverting colostomy. Operative time averaged 2 hours and 40 minutes.
Average time to feeds was 1.2 days and the average days to discharge was 3.5.
There were no operative complications. All patients are stooling spontaneously
at least daily and there have been no episodes of colitis.

This preliminary report shows that the one stage laparoscopic pullthrough
is safe and effective.

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PEDiatric LaparoScopIC ENDORECTAL PULLTHROuGH FOR HIRSCHSPRUNG’S DISEASE

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We report our experience between October 1994 and February 1996 of nine laparoscopic endorectal pullthrough repairs for Hirschsprung’s disease. There were five boys and four girls with ages, at the time of surgery, ranging from 18 days to 15 years old. Two of the patients had a previous colostomy. The other seven patients underwent primary laparoscopic endorectal pullthrough as described by Georgeson in the Journal of Pediatric Surgery, July 1995. Mean postoperative stay was three days. There was no mortality. Mean operative time was 3.2 hours (range of 2.5 to 4.3 hours) with a mean blood loss of 13 cc. All patients, except two, began clears on postoperative day one or two and fully tolerated a diet for age by postoperative day three. Pain medication requirements were minimal. Follow-up ranged from two months to a year. Two patients developed colitis within two months period. One patient had temporary postoperative constipation and one patient had continued soiling on follow-up. We did not routinely dilate these patients after surgery. Only three patients required dilatation after surgery. All patients’ subjective evaluation indicated satisfaction with the results. We feel the financial and medical benefits of the laparoscopic approach make it the procedure of choice for both single and two-stage repair for short segment Hirschsprung’s disease when compared to the conventional endorectal pullthrough procedure.

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PROXIMITY INJURY BY THE HARMONIC SCALPEL
DURING DISSECTION

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The harmonic scalpel is a high frequency (55 kilohertz) oscillating instrument that is reported to have a decreased dispersion of energy to surrounding tissues. It has been demonstrated to ease dissection as well as decrease blood loss during dissection of highly vascularized tissues. To determine if it is safe to proximity tissues during dissection, it was used to dissect portal vein from pancreas, renal artery and vein from renal hilum and ureter from the retroperitoneum of adolescent swine. Dissection techniques were similar to those described by the company. When completed, tissue was removed, formalin fixed and microscopic analysis performed to determine tissue viability. Dissection was technically simple with no obvious injury to vessels or ureter. Microscopic analysis, however, revealed marked mural injury to both vessels and ureter with areas of transmural necrosis. Though portal vein was dissected from the pancreas with ease and without perforation, analysis demonstrated diffuse injury through adventitia and muscularis but not including the endothelial layer. Microscopic evaluation of the ureter demonstrated a more marked cellular injury than when compared to cautery dissection using similar techniques. This study indicates that care must be taken when using the harmonic scalpel. Though its energy dispersion may be less than that of cautery, it is still capable of causing transmural injury to vascular structures and ureter in proximity to dissection.

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THE EFFECT OF LOW DOSE COMBINATION IMMUNOSUPPRESSION ON NUTRIENT ABSORPTION

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Small bowel transplantation is being performed in the pediatric population using FK506-based immunotherapy. However, FK506 has been shown to impair growth in animal studies. This is a potentially serious side effect for the growing pediatric patient. Therefore, the effects of low dose oral FK506 combined with rapamycin (RPM) and mycophenolate mofetil (MM) on animal growth and nutrient transport were evaluated in the normal Lewis rat. Control animals (n = 10) received 1 ml of intralipid carrier once daily orally. Drug animals (n = 10) received oral FK506 0.3 mg/kg/d, RPM 2 mg/kg/d, and MM 20 mg/kg/d suspended in 1 ml of intralipid. Weight gain was measured weekly. Animals were sacrificed after four weeks of treatment and in vitro small intestinal transport studies were performed. Mean 24 hour drug trough levels at sacrifice were: FK506 1.42 ng/ml, RPM 5-10 ug/L (range only), and MM 318 ug/L (range 55-1178).

<table>
<thead>
<tr>
<th>Weight Gain (%)</th>
<th>n</th>
<th>Jejunum</th>
<th>Ileum</th>
<th>Jejunum</th>
<th>Ileum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10</td>
<td>40.4 ± 16.8</td>
<td>51.3 ± 19.3</td>
<td>11.0 ± 3.2</td>
<td>21.8 ± 1.1</td>
</tr>
<tr>
<td>Drug</td>
<td>10</td>
<td>57.3 ± 13.6</td>
<td>69.5 ± 12.6</td>
<td>12.6 ± 2.0</td>
<td>17.0 ± 2.7</td>
</tr>
</tbody>
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Data expressed as mean ± SD; also, short-circuit current in µA/cm²/cm², V-max; maximal transepithelial Na⁺/glucose transport in mmol/cm²/hr; H-Insulin, transepithelial flux in nmol/cm²/hr; C-Mannitol, transepithelial flux in nmol/cm²/hr. *Significant difference (p<0.05) by Student's t-test.

Although weight gain was impaired, this was less than in previous studies with FK506 monotherapy at higher doses. There were no significant differences in glucose transport or passive solute permeability in either group. Accordingly, low dose combination therapy may be less toxic to the small intestine than FK506 monotherapy at higher doses but general growth inhibition remains a potential obstacle to widespread application of this drug to pediatric transplant recipients.

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A COMPARISON BETWEEN ANAL ENDOSONOGRAPHY AND EMG, AND MANOMETRY IN INTERMEDIATE OR HIGH ANORECTAL ANOMALIES

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Aims: To assess the correlation between the images of anal endosonography and electromyography (EMG), and manometry in patients with intermediate or high anorectal anomalies

Patients and Methods: Fifteen children (5 with intermediate and 10 with high type anomalies), ages 7 to 18, were examined. Kelly's clinical scores was used for a maximum of 6 points. Anal endosonography was performed to obtain the images of the external sphincter (EAS) and the internal anal sphincter (IAS). EMG of the EAS was recorded by surface electrodes. Anal resting pressure and the anorectal reflex were examined.

Results: In 2 of the 5 with intermediate anomalies, who gained 5 or 6 points, the image of EAS was clearly identified, and phasic activity and activity during further rectal filling were found in EMG recordings. In the remaining 3 patients who gained 4 or 2 points, however, the image of EAS was less identified and the activity during further rectal filling was not increased. The image of IAS was not obtained in all of the 5 patients, and the anorectal reflex was present in only one of the 5. Two of the 10 with high type anomalies gained 5 points. In these 2 the images of IAS and EAS were identified, and phasic activity was observed. In the remaining 8 the image of EAS was identified. However, the image of IAS was missing in 6 of the 8. The anorectal reflex was absent in all of the 10.

Conclusion: Good anal function after surgery for intermediate or high anorectal anomalies correlated well with endosonographic images and with EMG findings. In some of high type anomalies the image of IAS was identified, although the anorectal reflex was absent in all of the high type.

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ANAL REEDUCATION FOR POSTOPERATIVE
Fecal incontinence in congenital diseases
of the rectum and anus

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Despite meticulous surgery, some children with congenital diseases of the
rectum and anus may remain incontinent. From October 1993 to March 1996,
14 patients have been referred to an anal reeducation clinic. Eleven of them
have been initially treated for anal imperforation, and three for Hirschsprung’s
disease. Mean Kelly score at referring was 1.46 (0-4.5). All patients were
treated by sessions of low frequency (10-50 Hertz) electrical stimulation
through an anal probe and biofeedback training coupled with home exercises.

Initial evaluation allowed us to identify three main problems occurring in
these patients: lack of proprioception towards their own continence muscles,
use of synergist muscles to compensate, and inversion of command. After a
mean course of 10 visits, children corrected their abnormal motor commands
and erroneous use of accessory muscles. They were able to isolate their
continence muscles with success, which gained in strength, rapidity of response
and duration of contraction. Mean Kelly score went up to 3.07 (0.5-5.5).

These results are still preliminary, but clearly indicate that anal
reeducation gives these children a better knowledge of their anatomy. It
increases their motivation and discipline towards continence, and, for most of
them, their quality of life.

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THE RISK OF VENTRICULOPERITONEAL SHUNT INFECTION IN PATIENTS WITH ABDOMINAL SEPSIS

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Eleven cases have been published in the English literature describing patients with ventriculoperitoneal shunts (VPS) that develop abdominal sepsis not caused by the VPS.

Objective: To determine the risk of VPS infection when abdominal sepsis occurs.

Methods: A retrospective chart review from three Ontario children’s hospitals was done. Abdominal sepsis was subdivided into diffuse peritonitis, localized peritonitis, or sepsis without viscus perforation. Abdominal sepsis was also subdivided into ruptured ileocystoplasty or gastrointestinal sources. A positive cerebrospinal fluid (CSF) culture was considered evidence of VPS infection.

Results: Seventeen episodes of abdominal sepsis in sixteen patients were analyzed. Age ranged from 2 months to 19 years (median 11 years) including 2 females and 14 males. Abdominal infection resulted from appendicitis (6), small bowel perforation (4), gastric perforation (2), acute cholecystitis (1), ischemic colon (1), and ruptured ileocystoplasty (3). The 3 patients with ruptured ileocystoplasties presented with diffuse peritonitis and none of these shunts were externalized. Six patients with diffuse peritonitis had their shunts externalized. Three of these six had positive CSF cultures. Five patients with localized peritonitis (1 shunt externalized) and 3 patients without perforated viscus (no shunts externalized) had uncomplicated clinical courses.

Conclusions: Patients without diffuse peritonitis or with ruptured ileocystoplasty did not develop shunt infection. This is lower than the 50% rate of VPS infection with diffuse peritonitis (uncorrected $\chi^2 p = 0.031$). This review lends support for the externalization of VPS in patients with diffuse peritonitis. The data for localized peritonitis is insufficient.

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Controversy remains concerning optimum management of the impalpable undescended testicle in boys. We reviewed our experience over the past 13 years to try to determine an optimal approach. Of 1305 patients treated for undescended testicles between February 1982 and December 1995 157 boys (12.03%) had impalpable testes. Seventeen boys had bilateral impalpable testes for a total of 174 impalpable testes included in this study. One hundred forty-eight boys, 13 with bilateral impalpable testes, had groin exploration as initial management. Five boys with unilateral impalpable testes were found to have no testicle on groin exploration and no hernia sac associated. Further retroperitoneal dissection (4 patients) or laparoscopy (1 patient) confirmed an absent testicle. One patient with a unilateral impalpable testicle and absent testicle with a hernia sac, on exploration was found to have an intra-abdominal testicle on subsequent laparoscopy. Orchidopexy at groin exploration was definitive management in all cases except 2 treated with orchiectomy for grossly malformed testicles.

Nine boys had laparoscopy as initial management, 4 with bilateral undescended testes. All testicles were treated with subsequent groin exploration and orchidopexy except 1 removed because of gross malformation.

In this review hernia sacs were significantly associated with undescended testicles \( (p < .00001 \text{ Fisher Exact Test}) \). The absence of a sac may therefore suggest an alternate diagnosis, i.e., ectopic testicle or vanishing testicle.

We suggest from this experience that groin exploration be the initial management of the impalpable testicle with further exploration indicated for an absent testicle and an associated hernia sac and no further exploration necessary for an absent testicle and no hernia sac.
PEDIATRIC SURGEONS ACTIVITIES AND FUTURE PLANS

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Objective: To survey CAPS members on their practice with the hope to reflect needs.

Material and methods: A questionnaire was mailed to 86 CAPS members.

Results: We received 50 questionnaires (58%), with 85% males and 14% females. Sixteen percent of the respondents have no children, 6% did not answer, and 8% expect to have more. Among surgeons with children, 13% reduces the number of hour worked weekly (2 hours to > 1 day) for a number of years (2-5). Women were more likely to reduce their workload than men. Most surgeons practice in an academic (64%) or a mixed setting (25%), with only 10% involved in private practice. On average, 59% of the time is devoted to patient care, whereas teaching and research each take on average 10% of the surgeon’s time, and administration about 9%. The respondents worked on average 56 hours per week, and 46 weeks per year. Age, sex, and place of training did not influence the number of weeks worked per year. Sex did not significantly affect the number of weekly hours worked. There was a decrease in the number of hours worked with increasing age, and surgeons with a spouse working full-time tend to work less hours. When asked about their preference for the next 5 years, 32% of surgeons prefer to decrease their level of activity, and 14% prefer to retire. A recurring theme in surgeons’ comments was the need for increased time for teaching and/or research, and less administrative work. Finally, 62% of the respondents were very satisfied with their work, 26% were satisfied, and 12% were unsatisfied.

Conclusion: Lifestyle and family commitment have an impact on pediatric surgeons’ activity which should be considered when analyzing needs.

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CONTINUOUS EPIDURAL INFUSIONS FOR PERIOPERATIVE PAIN IN INFANTS LESS THAN 2 YEARS

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Objective: To determine safety and effectiveness of epidural anesthesia in infants under 2 years of age during the perioperative period.

Design: Retrospective chart review of patients registered on pain service data base over 1 year at University children’s hospital.

Patients: Forty-seven patients under 2 years of age receiving 49 continuous epidural infusions (CEI) for a variety of orthopedic, urologic and general surgical procedures during 1994.

Methods: Forty-six patients received CEI of bupivacaine alone, while 3 received either narcotic or narcotic-bupivacaine combinations. Failure of CEI is defined subjectively as a persistent pain during CEI. Patient characteristics, length of infusion, concomitant narcotic use, hospital days, side-effects and complications occurring during CEI were compiled from orders, nursing and progress notes.

Measurements and main results: There were 22 male and 27 female procedures, with mean age of 0.95 years and mean weight of 8.84 kg. The mean duration of epidural infusion was 50 hours (range 9 to 94). Forty-five CEI's (92%) were considered successful. Patients with successful CEI's received 0.12 mg/kg while failed CEI's received 0.32 mg/kg of supplemental morphine. Mean hospital days were 5.7 for successes and 6.0 for failures, respectively. No deaths, seizures, arrhythmias or hypotension occurred during any of the 49 CEI's. Complications included apnea in 2 patients receiving morphine or fentanyl CEI. FEVERS were noted in 12 patients (25%) and accidental patient removal in 11 (22%). There were no complications during catheter insertion. No children experienced motor blockade or pressure sores related to sensory blockade during the infusion. Other infrequent complications included swelling or erythema at the insertion site (6%), mechanical problems (5%), and fecal soiling (2%).

Conclusions: CEI is safe and subjectively effective for perioperative pain management in infants < 2 years old in experienced hands.

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CHRONIC BRONCHITIS IS A COMMON 
LONG-TERM COMPLICATION OF OESOPHAGEAL ATRESIA

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Objective: To study long-term bronchial mucosal changes in oesophageal atresia patients.

Patients and methods: Follow-up bronchoscopy was performed on 43 of 76 long-term survivors with oesophageal atresia and anastomosis at the age of 2.1 - 14.6 (mean 8.0) years. Biopsy specimens for histology were obtained in each case. Histological findings were graded into four categories: normal finding, mild inflammation, moderate inflammation, and severe inflammation. The patients were personally interviewed and the hospital records were retrospectively analysed.

Results: Histological chronic inflammatory changes were found in 35 of the 43 patients (81%). In 15 patients the inflammation was graded as mild, in 17 as moderate, and in 3 patients the inflammation was severe. For analysis, the patients were divided into two groups: 1. normal findings or mild bronchitis (n = 23), and 2. moderate or severe bronchitis (n = 20). There was no difference in subjective symptoms between the two groups. Surprisingly, there was also no difference in the occurrence of tracheomalacia or history of GOR between the groups. Nine of thirteen (69%) patients who originally had a long gap atresia had moderate or severe bronchitis, while 11 of 30 (37%) patients with a "normal" gap atresia had moderate or severe bronchitis. Eight of the 11 patients (73%) with a fistulous fossa longer than 1.5 cm had moderate or severe bronchitis, while 12 of the 32 patients (38%) with a shorter fistulous fossa had moderate or severe bronchitis.

Conclusions: Chronic bronchitis is common in oesophageal atresia patients. It's occurence does not correlate with clinical symptoms. Further studies are required to find out the clinical significance of these observations.

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Objective: Surgical Aid to Children of the World (SACOW) is an international organization recognized all throughout the world. By request, of pediatric surgeons in developing nations, SACOW sends U.S. and Canadian pediatric surgeons to teach their colleagues how to modernize their surgical procedures by assisting them in the operating room and teaching them new surgical techniques.

Material: Now seventeen years old, we have been to fifteen countries. We have been represented by 70 surgeons and physicians throughout the United States and Canada and have invited 24 surgeons from our "host" countries to work and learn in the U.S. for a period of 3 months each.

Results: Our impact has been overwhelming. We have been responsible for and would like to discuss:

1. A new Children's Hospital in Beijing, China
2. Total reorganization of children's care in Kenya
3. Upgrading pediatric surgery and pediatric care in Guatemala
4. Dramatic modification of children's surgical care in Hungary and Bulgaria

Conclusion: It was said SACOW has been the most important teaching device in those countries since children's care-developed as a specialty.

Our future plans to visit Bosnia, with a partnership from the Albert Schweitzer Institute for the Humanities, have been delayed until peace is more firmly established.

I would like to discuss the organization, past development, and future progress.

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MICROVASCULAR REPAIR OF INJURIES TO THE FEMORAL AND POPLITEAL VESSELS IN CHILDREN

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Vascular injuries in the small child present especially challenging technical problems. Because of the small size of the vessels, standard operative repair, even using magnifying loupes, may result in narrowing of the vascular lumen and ultimate thrombosis. We have treated four children with extensive lower extremity vascular injuries using microvascular techniques. The mechanism of injury was circular saw injury (2 years old), crush injury to the knee (2.5 years old), avulsion of the popliteal fossa by a car bumper (2 years old) and mid-shaft femur fracture (3 years old). The patient with a mid-shaft femur fracture sustained an isolated femoral artery injury. Two patients had combined popliteal arterial and venous injuries and the patient injured by the circular saw transected both the femoral artery and vein. One patient had a concomitant peroneal nerve injury which was repaired as well. Following a four compartment fasciotomy, external fixation of the associated femur fracture (2) or tibial fracture (1) was accomplished. Reversed, autologous saphenous vein graft was used for femoral artery replacement in 2 patients, and for replacement of the popliteal artery in 2 patients. Primary repair of the venous injury was possible in one patient with autologous saphenous vein used in 3 patients. Microsurgical anastomoses were accomplished using 8-0 or 9-0 interrupted nylon sutures. The patients have been followed for 5, 3, 1 and 1 years. The first 3 patients have had patency of both artery and vein demonstrated by Doppler at 5, 1.5 and 1 years following reconstruction and have normal ambulation and limb growth. The use of the microscope, coupled with standard vascular surgical techniques, allows more precise repair of these complicated injuries with successful long term patency.

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SEGMENTAL INTESTINAL TRANSPLANTATION; FEASIBILITY AND IMMUNOSUPPRESSION STRATEGIES

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Intestinal transplantation (IT) is being done in children: problems include insufficient donors and rejection. Because cyclosporine (CsA) provides inadequate immunosuppression, the more potent and toxic FK506 is used. We hypothesized that segmental IT would provide adequate nutrient absorption for growth; further, related SIT could be immunologically advantageous, allowing the use of CsA.

IT was performed in juvenile pigs, transplanting the terminal 150 cm of ileum; control animals underwent proximal resection, leaving the identical segment of ileum. "Conventional" immunosuppression was FK506, donor/recipients were unrelated. Related IT was done between litter mates, with MHC typing done by polymerase chain reaction-restriction fragment length technique; immunosuppression was CsA. Animals were followed for 40 days, monitoring weight gain, feed intake, and intestinal permeability using DTPA. Animals were euthanized and nutrient measured in vitro.

<table>
<thead>
<tr>
<th>RESULTS</th>
<th>n</th>
<th>Survival (days)</th>
<th>Technical Rejection</th>
<th>Wt Gain %</th>
<th>Intestinal* permeability</th>
<th>Intestinal glucose transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controls</td>
<td>5</td>
<td>40</td>
<td>0</td>
<td>37 ± 19</td>
<td>0.9 ± 0.4%</td>
<td>50.0 ± 15.6</td>
</tr>
<tr>
<td>CsA related</td>
<td>20</td>
<td>21 ± 15</td>
<td>3</td>
<td>14 ± 14</td>
<td>1.2 ± 1.4%</td>
<td>45.8 ± 9.9</td>
</tr>
<tr>
<td>FK506 non related</td>
<td>9</td>
<td>12 ± 11</td>
<td>2</td>
<td>2</td>
<td>-22% ± 2%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

* % urinary recovery of oral DTPA + delta intestinal short circuit induced by addition of 64mM glucose μA/cm²/hr.
† p < 0.05 of CsA group

Controls and the non-rejecting CsA treated/related groups grew well. However FK506 treated animals had a high rate of rejection, and severe weight loss.

These results suggest that segmental IT is possible, however FK506 therapy is toxic. Related donor/recipient pairs appears immunologically advantageous, but a reduction in rejection rates is required prior to use clinically.

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MORPHOLOGICAL CHANGES IN THE ENTERIC NERVOUS SYSTEM OF THE TRANSPLANTED FETAL RAT INTESTINE

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Purpose: It has been reported that in adult small intestinal graft, extrinsic nerves are absent and intrinsic nerves are intact. Fetal intestinal grafts overcome temporary ischemic changes to develop in adult recipients in contrast to adult grafts with vascular anastomosis, suggesting that the function and morphology of the enteric nervous system (ENS) may be different from that of the adult grafts. In this study, the ENS of the fetal intestinal grafts was examined histopathologically.

Methods: Forty-four fetal small intestines from Lewis rats were transplanted syngeneically into the subcutaneous region of the adult rats without vascular anastomosis and 32 grafts survived macroscopically. The grafts were removed at 2, 4, 6, and 8 weeks (n = 8 each) after transplantation and examined using (1) H&E staining, (2) AChE and NADPH diaphorase histochemistry and (3) protein gene product 9.5 (PGP) 9.5, S-100 protein, glial fibrillary acidic protein, tyrosine hydroxylase, nerve growth factor receptor and neuropeptides (calcitonin gene-related peptide, vasoactive intestinal peptide, neuropeptide Y, somatostatin and substance P) immunohistochemistry, and compared to the intestines of 2, 4, 6 and 8 week-old rats (n = 5 each) which acted as controls.

Results: ENS of the fetal grafts was different from the controls as follows: (1) Tyrosine hydroxylase and neuropeptide Y immunoreactivity in the fetal grafts was present but markedly reduced, suggesting that the extrinsic innervation exist. (2) Hyperganglionosis in the myenteric plexus was seen in the 6- and 8-week grafts. (3) AChE activity was increased in circular muscle and lamina propria, suggesting cholinergic hyperinnervation. (4) S-100 activity was increased in lamina propria. (5) Calcitonin gene-related peptide, one of the intrinsic peptides, was increased in the 6- and 8-week grafts.

Conclusion: This is the first report which shows that the transplanted fetal intestine retains extrinsic and intrinsic enteric nervous system.

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ANTERIOR EXPOSURE OF SPINAL DEFORMITIES AND TUMORS
A TWENTY-YEAR EXPERIENCE

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Data from 505 patients (1976-1995) who underwent anterior spinal
exposure was retrospectively analyzed. There were 222 males and 283 females
with a mean age of 14.5 years; 166 had thoracic exposure (T), 300
thoracoabdominal (TA), 44 retroperitoneal (R), and 7 transperitoneal (TP); 17
had repeat exposure (5 had initial exposure elsewhere); 70% had scoliosis, 25%
kyphosis, 27% a neuromuscular disorder (NMD) and 6.7% a tumor. One
hundred and forty-one (27%) had anterior exposure only: 376 (73%) had
anterior exposure and posterior exposure as a single or as a two-stage
procedure; 4.2% had a vascularized pedicle rib graft; and 21% a strut graft.
Average ICU stay was 2.5 days, 6.2 days for NMD (p < 0.05); average chest
tube drainage was 595 ml, 618 ml for NMD; average ileus was 3.4 days, 4.1
days for NMD (p < 0.05); average time until chest tube removal was 3.0 days,
3.5 days for NMD; and average length of stay was 15.4 days, 19.3 days for
NMD (p < 0.05). Mechanical ventilation over 96 hours was required in 31
patients, however 66% had a NMD (p < 0.05). Overall morbidity was 9.8%,
7.9% for NMD. Complications occurred most frequently with T exposure
(12%) and were not more frequent for tumor or repeat exposure.
Complications included effusion and/or pneumothorax (22), superior
mesenteric artery syndrome (8), vessel injury (7), and other (14). Over half
(57%) of the vessel injuries occurred in NMD. Differences between the 1976-
1985 period and the 1986-1995 period were: a shorter length of stay and a
majority of one stage combined exposures in the latter period. We conclude
that anterior exposure of spinal deformities and tumors has a low morbidity in
the average pediatric patient, and longer hospitalization, prolonged mechanical
ventilation, and a greater chance of vessel injury in children with a
neuromuscular disorder.

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DO CHILDREN WITH REPAIRED LOW ANORECTAL MALFORMATIONS HAVE NORMAL BOWEL FUNCTION

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Aim: To compare bowel function of patients who had undergone repair of a low anorectal malformation with bowel function of normal healthy children.

Material and methods: The bowel function of 40 patients (29 males, 11 females, median age 7, range 3-13) with low anorectal malformations was evaluated by a multivariate scoring method based on a questionnaire. All patients were toilet trained for defecation and micturition. All patients were also evaluated clinically and the outcome was graded as excellent (normal bowel function), good (no or minor social limitations, fair (marked social limitation) or poor (total incontinence). Fifty-four healthy children with a similar age and sex distribution were used as controls.

Results: Twenty-one (52%) patients with normal bowel function had continence scores which were within the range of the scores of healthy children (patients 19.3 ± 0.7 vs controls 19.1 ± 1.3). Fifteen patients had a good clinical outcome. The mean score in this group was 16.3 ± 2.4 (p < 0.0001). Four patients with a fair outcome had a mean score of 10.5 ± 2.9. Constipation requiring dietary or medical treatment was reported by 17 patients (42%) and 4 of the controls (7%). Daily soiling was reported by 5 patients (13%) and none of the controls. None of the patients had urinary incontinence, occasional wetting was found in 27% of the patients and 33% of the controls (p = 0.689).

Conclusion: Only half of the children with low anorectal malformations have age-appropriate normal bowel function. Long term follow-up of these patients in order to manage the main functional problems, constipation and soiling, is warranted.

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THE CECOSTOMY BUTTON:
A NEW METHOD OF BOWEL CLEANSING

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Following our development of the enema continence catheter to facilitate the administration of large volume enemas in the management of fecal incontinence we have found that some teenagers have abandoned the procedure as too tedious and/or esthetically distasteful. Consequently we developed the "cecostomy tube" method of dealing with the problem of fecal incontinence. Done under local anesthesia and radiologic control, a small self-retaining catheter (10 F.) is inserted into the cecum. An irrigating solution can easily be self-administered, and the entire colon is emptied of fecal material. The rectum remains empty for two or more days, and there is not any inadvertent passage of stool. After six weeks we replace the original self-retaining catheter with a low profile "button" which is commercially available or with one of our own design.

We have now inserted such buttons in 24 of 44 patients who had had a previously inserted cecostomy tube for the purpose of bowel cleansing. Their ages range from 4 to 20 years, with a mean age of 10.8 years.

There have been no significant consequences and patients and parents alike have all expressed immense satisfaction with this method of management of their fecal incontinence. The main advantages are the absence of "mess" and the ease with which the entire colonic irrigation can be carried out. These individuals are at once rendered both socially continent and quite independent.

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THE PAEDIATRIC BOWEL MANAGEMENT CLINIC.
INITIAL RESULTS OF A MULTIDISCIPLINARY APPROACH
TO FUNCTIONAL CONSTIPATION IN CHILDREN

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Objectives: The multifactorial nature of paediatric functional constipation suggests that a multidisciplinary management approach may be superior to any single-discipline therapy. We tested this hypothesis in a newly created paediatric bowel management clinic (BMC).

Methods: Delated data were collected prospectively on all patients seen in the clinic over the first year. Both quantitative and qualitative analyses were performed. Satisfaction with care in the clinic was measured using the Measure of Processes of Care tool, then compared to a normative sample. Finally, patient characteristics were correlated to satisfaction with care in all scales.

Results: Ninety-five patients, all previously treated unsuccessfully for constipation, were seen by a team comprised of a physician, clinic nurse, dietitian, and psychologist. Mean age was 5.3 years with equal gender distribution. Between the first and last visits recorded, soiling at home decreased from 63% to 37%, at school from 24% to 11%; rectal bleeding decreased from 23% to 13%, rectal pain from 47% to 11%, and abdominal pain from 73% to 49%. Qualitative data analysis showed the significant psychosocial impact of constipation in patients and their families. In the Measures of Processes of Care, scores for the BMC were higher than normative in all scales except "Providing general & specific information". Satisfaction with care showed a statistically significant correlation in all scales with the severity of symptoms on clinic entry.

Conclusions: A multidisciplinary approach to functional constipation leads to both patient/parent satisfaction and significant short-term improvement. Further studies will examine the long-term impact of the clinic.

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INTESTINAL VASCULAR ANOMALIES IN CHILDREN

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Aim of study: To clarify the clinical presentation, the diagnosis modalties, the treatment and the pathology of vascular anomalies of the intestines in childhood.

Methods: All children with intestinal vascular anomalies and significant GI bleeding who were referred to our institution from 1975 to 1995 were reviewed. Clinical, radiological, endoscopic, scintigraphic, surgical and pathological data were analyzed.

Main Results: 13 lesions were identified in 9 children (5 males and 4 females). The median age of clinical onset was 8 years. Only 2 patients presented with a complex syndrome (Klippel-Trenaunay = 1, Osler-Rendu-Weber = 1). According to angiographic criteria, 7 patients had isolated venous malformations and 2 had arteriovenous malformations. The intraoperative localization of the lesions was a major problem because they usually did not involve the serosa, and the main findings were a few slightly dilated mesenteric veins. Treatment was conservative in 4 children, while 5 were treated by intestinal resection. The main pathological findings consisted of dilated and abnormal veins in the mucosa and submucosa.

Conclusion: Selective angiography should not be delayed in patients with GI bleeding if all other investigations are negative. Because these lesions are rarely recognizable on operative inspection, precise preoperative angiographic localization of intestinal vascular anomalies is essential, in order to allow for a safe and limited resection of the involved bowel segment.

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IMPROVED RESULTS FOR BILIARY ATRESIA USING AN EXTENDED HILAR DISSECTION

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The failure rate of surgical correction for biliary atresia remains high. We hypothesized that an extended hilar dissection as proposed by Toyosaka (JPS 1994, 29:896) would allow for improved drainage of neobiliary ducts, while use of postoperative steroids and long-term antibiotics would ameliorate ongoing scarring. This was combined into a prospective protocol used in 6 consecutive patients seen from 02/94 - 02/95. All patients underwent initial exploratory laparotomy with liver biopsy and operative cholangiogram; an extended drainage procedure was performed with good bile drainage achieved in 5 patients. Postoperatively patients were treated with steroids x 5 days (methylprednisolone 1 mg/kg/d) and antibiotics (ampicillin, followed by septra x 6 months).

Results:

<table>
<thead>
<tr>
<th>AGE</th>
<th>n</th>
<th>BILIRUBIN (µmol/L)</th>
<th>ALBUMIN (mg/dL)</th>
<th>AST (iu/L)</th>
<th>WEIGHT (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Kasal (48 ± 20 days)</td>
<td>6</td>
<td>201 ± 70</td>
<td>32 ± 10</td>
<td>290 ± 160</td>
<td>3.9 ± 0.8</td>
</tr>
<tr>
<td>2 m post-op</td>
<td>5</td>
<td>47 ± 22</td>
<td>34 ± 2.8</td>
<td>82 ± 13</td>
<td>5.2 ± 1</td>
</tr>
<tr>
<td>6 m post-op</td>
<td>5</td>
<td>24 ± 14</td>
<td>31 ± 5</td>
<td>77 ± 21</td>
<td>7.0 ± 1.2</td>
</tr>
<tr>
<td>12 m post-op</td>
<td>5</td>
<td>30 ± 24</td>
<td>36 ± 8</td>
<td>96 ± 50</td>
<td>9.0 ± 1.7</td>
</tr>
<tr>
<td>16 m</td>
<td>4</td>
<td>34 ± 25</td>
<td>30 ± 3.0</td>
<td>127 ± 79</td>
<td>10.2 ± 1.8</td>
</tr>
</tbody>
</table>

Postoperatively, 3 children have had episodes of cholangitis treated with IV antibiotics, all have recovered. The one initial non-responder has gone on to successful liver transplantation. One further child is being evaluated for transplant. However, the results of this small series are better than those reported in the literature, and suggest this approach be tried with longer term follow-up in a large cohort of patients.

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PENTOXIFYLLINE REDUCES INTESTINAL REPERFUSION INJURY

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Objective: Leukocytes as well as oxyradicals play a key role in the reperfusion injury where microcirculatory derangements after ischemia are also contributers. The aim of this study was to determine the effects of pentoxifylline in reperfusion injury of the small bowel as a leukocyte stabilizer, free radical scavenger and microcirculatory regulator.

Material and methods: 96 male Spraque-Dawley rats were used to determine the biochemical histopathologic and blood flow changes of the 30 minutes reperfused small intestines following 30 minutes of a warm ischemic insult. Animals were divided into six groups as sham operation, pentoxifylline sham operation, ischemia, pentoxifylline ischemia, reperfusion and pentoxifylline reperfusion. 50 mg/kg pentoxifylline (PtX) was administered intraperitoneally 15 minutes before ischemia. Sixty of the 96 rats were used to determine histopathologic changes (Chiu grade), malondialdehyde (MDA) and myeloperoxidase (MPO) levels of the small intestines (n = 10). Thirty-six of the 96 rats were used to determine blood flow changes of the small intestines by using 133 Xe clearance technique (n = 6). All data were expressed as mean ± SE. Mann Whitney-U test was used to evaluate significant differences between the groups.

Results: Biochemical, histopathologic and scintigrapic results were shown in the table.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>MDA (nmol/g tissue)</th>
<th>MPO (unit/g tissue)</th>
<th>FLOW (ml/100 g/min)</th>
<th>CHIU GRADE (0-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sham</td>
<td>26.39 ± 5.99</td>
<td>0.81 ± 0.21</td>
<td>31.53 ± 3.22</td>
<td>0.59 ± 0.17</td>
</tr>
<tr>
<td>Sham + PtX</td>
<td>25.63 ± 3.93</td>
<td>0.79 ± 0.21</td>
<td>38.81 ± 8.66</td>
<td>0.69 ± 0.16</td>
</tr>
<tr>
<td>Ischemia</td>
<td>30.63 ± 3.85</td>
<td>0.60 ± 0.21</td>
<td>0</td>
<td>2.90 ± 0.23</td>
</tr>
<tr>
<td>Ischemia + PtX</td>
<td>31.63 ± 3.16</td>
<td>0.85 ± 0.16</td>
<td>0</td>
<td>2.80 ± 0.25</td>
</tr>
<tr>
<td>Reperfusion</td>
<td>46.75 ± 7.46*</td>
<td>1.70 ± 0.74*</td>
<td>73.75 ± 1.80*</td>
<td>4.40 ± 0.22*</td>
</tr>
<tr>
<td>Reperfusion + PtX</td>
<td>56.13 ± 4.09</td>
<td>0.53 ± 0.10</td>
<td>31.53 ± 3.22</td>
<td>2.80 ± 0.25</td>
</tr>
</tbody>
</table>

*p < 0.05

Conclusion: We conclude that pentoxifylline pretreatment before reperfusion stabilizes blood flow, decreases MPO and MDA levels to the normal, and attenuates mucosal damage.

Dr. Hüseyin Dindar
Ankara Üniversitesi Tip Fakültesi
Çocuk Cerrahisi Anabilim Dalı
06100 Dikimevi Andara, TURKEY

Tel. (90) 312 3623125    Fax (90) 312 2400624
EFFECT OF MAJOR SURGERY ON NEUTROPHIL CHEMOTAXIS
AND ACTIN POLYMERIZATION IN NEONATES AND CHILDREN

C. Merry, D.J. Reen, P. Puri
Children’s Research Centre, Our Lady’s Hospital for Sick Children,
Dublin, IRELAND

Aim: We have examined the effect of major surgery in neonates and older children on neutrophil (PMN) chemotaxis and on actin polymerization, an essential early step in PMN movement.

Method: Isolated PMNs from the following subjects were studied: Healthy adult volunteers (n = 28), healthy term newborns i.e. umbilical cord blood (n = 21), stable newborns undergoing major surgery (gestational age 31-41 weeks, mean 38 weeks, n = 7), stable infants and older children undergoing major surgery (age 6 weeks-16 years, mean 45 months, n = 14). Samples from surgical patients were collected preoperatively, hourly during the procedure, immediately postoperatively, and at 48 hour postoperatively.

A millipore filter assay of chemotaxis was used; the distance migrated by PMNs towards 10% zymosan activated serum (ZAS) in 1 hour through a 3 µm filter was measured. Relative filamentous (polymerized) actin was assayed by flow cytometry, expressed as relative fluorescence intensity (RFI).

Results: Mean preoperative newborn PMN chemotaxis (18 ± 7µm) was not significantly different from healthy newborn cord PMN (17 ± 4µm) (p > 0.05). The mean preoperative PMN chemotaxis in older children (24.0 ± 7.7µm) was similar to healthy adult values (24.0 ± 4.0µm). Mean PMN chemotaxis in surgical newborns at 1 hour, post closure, and at 48 hours was 20.8 ± 3.3µm, 19.7 ± 4.0µm and 19.0 ± 7.0µm whereas older surgical patients had chemotactic activity of 24.8 ± 8.6µm, 27.0 ± 14.2µm, and 32.2 ± 9.8µm, respectively. Peak actin polymerization following formyl methionyl leucyl phenylalanine (FMLP, 10nM) stimulation was significantly diminished in healthy newborns compared to adult PMN. (RFI = 1.6 ± 0.4 vs 2.2 ± 0.5, P < 0.005). Preoperative surgical newborn PMNs had similar actin polymerisation levels (RFI = 1.6 ± 1.01) to healthy newborns while older preoperative children had similar levels (RFI = 1.9 ± 0.4) to adults. Chemotaxis or actin polymerisation did not significantly change in either group during or following surgery.

Conclusion: Despite reduction in neutrophil chemotaxis and actin polymerisation in healthy newborns, there is no further impairment of these neutrophil functions during or after major surgery. Our data suggest that PMN chemotactic function is resistant to the stress of uncomplicated major surgery in neonates and older children.

CAPS Sponsor: Dr. Ray Postuma
Mr. Prem Puri
Children’s Research Centre
Our Lady’s Hospital for Sick Children
Crumlin, Dublin 12, IRELAND

Tel. (353) 1 4558111  Fax (353) 1 4550201
ASSOCIATION CANADIENNE DE CHIRURGIE PÉDIATRIQUE

28ième

Réunion Annuelle

HALIFAX

18-20 Août 1996
VINGT-HUITIÈME Congrès Annuel

ASSOCIATION CANADIENNE de CHIRURGIE PÉDIATRIQUE

18-20 Août 1996

Sheraton Halifax
1919 Upper Water Street
Halifax (Nova Scotia) CANADA
B3J 3J5

(902) 421-1700
PROGRAMME SCIENTIFIQUE ET SOCIAL

Samedi, le 17 août 1996

09:00 - 17:00  Réunion du Conseil de l’ACCP
15:00          Inscription
18:00 - 22:00  Réception de Bienvenue, Maritime Museum of the Atlantic

Dimanche, le 18 août 1996

07:00 - 17:00  Inscription
07:00 - 08:00  Petit Déjeuner
07:45 - 08:00  Mot de Bienvenue et Ouverture du Congrès
08:00 - 10:00  Première Session scientifique
10:00 - 10:30  Pause-Santé
10:30 - 12:00  Deuxième Session scientifique
12:00 - 13:00  Fred MacLeod Lecture: Soeur Nuala Patricia Kenny

Lundi, le 19 août 1996

08:00 - 09:00  "2 minutes/2 diapos"
09:00 - 10:30  Troisième Session Scientifique
10:00 - 10:45  Pause-Santé
10:45 - 12:45  Quatrième Session Scientifique
13:00          Déjeuner d’Affaire des Membres
18:15          Départ de l’autobus pour la Réception du Président et le Banquet du Président
19:00          Réception du Président
19:30          Banquet du Président, Shore Club, Hubbard’s (Nova Scotia)

Mardi, le 20 août 1996

07:00 - 08:00  Petit Déjeuner
08:00 - 09:40  Cinquième Session Scientifique
09:40 - 10:15  Pause-Santé
10:15 - 11:50  Sixième Session Scientifique
11:50 - 12:05  Break
12:05 - 13:00  "Surgeons on the Firing Line"
13:00          Ajournement
MOT DE BIENVENUE DU PRÉSIDENT

Bienvenue à Halifax !

Le succès de notre 28e réunion annuelle est déjà assuré.

C'est toujours avec plaisir que nous nous retrouvons chaque année pour échanger nos diverses expériences cliniques et scientifiques tout en nous donnant l'occasion de souhaiter la bienvenue à nos nouveaux membres et à nos invités. C'est également un moment privilégié dans l'année où nous nous retrouvons pour renouer nos bonne amitiés et en faire de nouvelles.

J'aimerais remercier le coordinateur, Salam Yazbeck, Joyce et Michael Giacomantonio, nos hôtes d'Halifax, ainsi que Goeff Blair, le président du comité de programme, pour leur bon travail d'organisation.

Je vous invite tous à participer ensemble à cette nouvelle assemblée où vous êtes assuré d'apprendre et de vous amuser en même temps.

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

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

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

Programme d'Éducation Médicale Continue
Afin de réussir à améliorer la qualité des soins chirurgicaux pédiatrique, l'Association Canadienne de Chirurgie Pédiatrique a lancé un programme d'éducation médicale continue pour les médecins, le personnel infirmier ainsi que pour les autres travailleurs du domaine de la santé de l'enfant. Un fonds d'éducation fut créé afin de pouvoir soutenir ce programme.
Le Fonds d'Éducation couvre, tous les ans, les frais de visites de chirurgiens pédiatiques reconnus venant donner des conférences et enseigner dans différents centres médicaux canadiens. Il fournit un chirurgien pédiatrique conférencier à la réunion annuelle de la Société Canadienne de Pédriatrie. Le Fonds d'Éducation permet aussi à l'Association de commanditer tous les ans une session scientifique au congrès du Collège Royal des Médecins et Chirurgiens du Canada. Il soutient enfin le congrès annuel de notre association. 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 charitables. 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.
Secrétaire-Trésorier de l'ACCP
Hôpital Sainte-Justine
3175, Côte Ste-Catherine
Montréal (Québec) CANADA
H3T 1C5

Téléphone (514) 345-4688
Fax (514) 345-4964
E-mail Secretary@caps.ca
## PRÉSIDENTS

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<td>Harvey Beardmore</td>
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<td>Colin Ferguson*</td>
<td>Winnipeg</td>
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<tr>
<td>1975-1977</td>
<td>Jim Simpson*</td>
<td>Toronto</td>
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<td>1977-1979</td>
<td>Sam Kling</td>
<td>Edmonton</td>
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<td>Gordon Cameron</td>
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<td>1985-1987</td>
<td>Stanley Mercer</td>
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<td>1987-1989</td>
<td>Alex Gillis</td>
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<td>1989-1991</td>
<td>Jacques C. Ducharme</td>
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<td>1991-1993</td>
<td>Sigmund H. Ein</td>
<td>Toronto</td>
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<td>1993-1995</td>
<td>Angus Juckes</td>
<td>Regina</td>
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<tr>
<td>1995-</td>
<td>Jean G. Desjardins</td>
<td>Montréal</td>
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* décédé

## SECRÉTAIRES-TRÉSORIERS

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<tr>
<td>1989-1995</td>
<td>Ray Postuma</td>
<td>Winnipeg</td>
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<tr>
<td>1995-</td>
<td>Salam Yazbeck</td>
<td>Montréal</td>
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MEMBRES FONDATEURS

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

* 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'érrable ainsi que la date 1967.

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

Description

Le rouge et le violet des armes 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'érrable du Canada et la date de fondation de notre association (1967).

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

29e Congrès Annuel
3-7 Octobre 1997
The Banff Park Lodge Hotel, BANFF

30e Congrès Annuel
25-27 Septembre 1998
TORONTO*

31e Congrès Annuel
24-26 Septembre 1999
MONTRÉAL*

32e Congrès Annuel
22-24 Septembre 2000
OTTAWA*

* dates et lieux sont ceux des congrès du Collège Royal
COMMUNICATION DES RÉSIDENTS

Les présentations faites par les résidents en chirurgie sont jugées par un panel constitué de 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 250$. 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 1995

MEILLEUR TRAVAIL CLINIQUE

Dr. Julie A. MILLER

"Congenital cystic adenomatoid malformation (CCAM) in the fetus:
Natural history and predictors of outcome"
J.A. Miller, J.E. Corteville, J.C. Langer
Washington University, St. Louis (Missouri) USA

MEILLEUR TRAVAIL EXPÉRIMENTAL

Dr. V.A. EVRARD

"Under water - Nd:YAG laser-coagulation of blood vessels in a rat model"
V.A. Evrard, J.A. Deprest, P.V. Baller, T.E. Lerut, K. Vandenberghe, I.A. Brosens
Centre for Surgical Technologies, Leven, BELGIUM

FÉLICITATIONS DR. MILLER ET DR. EVRARD !
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10. Liaison with Trauma Assoc. of Canada:
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    - M. Hoffman
    - D. St-Vil
    - D. Wesson

CAPS Committee:
- N. Wiseman
- R. Postuma (assistant)

The underlined 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:
- Dr. Salam Yzbeck, Hospital Site, Juxtina, 3175 Cote St. Catherine, Montreal, PQ, H3T 1C5, Canada, tel.(514) 345-4455
- Fax: (514) 345-4064
- E-mail address: secretary@caps.ca
CONFÉRENCIÈRE INVITÉE

Soeur Nuala Patricia Kenny, BA, MD, FRCPC


Docteur Kenny est reconnue dans tout le pays comme enseignante et médecin bioéthicien. Elle est très souvent invitée à titre de conférencière. En 1991, elle fut professeur visiteur au Hasting Centre for Ethics et en 1993, elle obtint une bourse du Collège Royal en éducation médicale continue pour aller au Kennedy Institute of Ethics à l'Université Georgetown.


Nous nous faisons aussi un plaisir de vous informer que

**SOEUR NUALA PATRICIA KENNY**

est la CONFÉRENCIÈRE INVITÉE du

**COLLEGE ROYAL DES MÉDECINS ET CHIRURGIENS DU CANADA**