16th

Annual Meeting
Réunion Annuelle

MONTREAL
September 10-12, 1984

Canadian Association of Paediatric Surgeons
l’Association Canadienne de Chirurgie Infantile
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 in 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 commonest cause of death in childhood. Now 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.
SOCIAL PROGRAM

SUNDAY, SEPTEMBER 9th, 1984:

WELCOMING RECEPTION

Place: Dr. Jacques and Monique Ducharme
640 Dawson
Town of Mount Royal, Quebec
H3R 1C6

Time: 19:00       RSVP

MONDAY, SEPTEMBER 10th, 1984:

C.A.P.S. BANQUET

Place: Laurentian Room
Queen Elizabeth Hotel
Montreal, Quebec

Time: 19:00       RSVP
FUTURE ANNUAL MEETINGS

17th ANNUAL MEETING
VANCOUVER, B.C.
September 9-12, 1985

18th ANNUAL MEETING
TORONTO, ONTARIO
September 22-25, 1986

19th ANNUAL MEETING
WINNIPEG, MANITOBA
September 11-15, 1987

20th ANNUAL MEETING
OTTAWA, ONTARIO
September 23-27, 1988
## CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS
### L'ASSOCIATION CANADIENNE DE CHIRURGIE INFANTILE

### PRESIDENTS

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<th>Year</th>
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<th>City</th>
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<tr>
<td>1967-1972</td>
<td>Harvey Beardmore</td>
<td>Montreal</td>
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<td>1973-1974</td>
<td>Colin Ferguson</td>
<td>Winnipeg</td>
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<td>1975-1976</td>
<td>Jim Simpson</td>
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<td>1977-1978</td>
<td>Sam Kling</td>
<td>Edmonton</td>
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<td>1979-1980</td>
<td>Pierre Paul Collin</td>
<td>Montreal</td>
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<td>1981-1982</td>
<td>Barry Shandling</td>
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<td>1983-1984</td>
<td>Gordon Cameron</td>
<td>Hamilton</td>
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### SECRETARY-TREASURER

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CANADIAN ASSOCIATION OF PAEDIATRIC SURGEONS
L'ASSOCIATION CANADIENNE DE CHIRURGIE INFANTILE

DIRECTORS
President
Past President
3rd of Three Years
2nd of Three Years
1st of Three Years
Secretary-Treasurer

Gordon Cameron
Barry Shandling
Ray Postuma
Alexander Gillis
Raymond Cloutier
David Girvan

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Nominating
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Local Arrangements
Membership and Credentials
Publications
Health Care Data
Ethical and Moral Issues
Education Fund
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Constitution and Bylaws

Barry Shandling
J.C. Ducharme
Salam Yazbeck
Thomas Goodhand
Sigmund Ein
Phil Ashmore
Pierre Soucy
Ray Postuma
Pierre Paul Collin
Barry Shandling
Barry Shandling
Alexander Gillis
canadian association of
paediatric surgeons

l'association canadienne de
chirurgie infantile

Mon/lun Sep 10 0900 GATINEAU
(Le Reine Élizabeth)

CHAIRMAN/LE PRÉSIDENT: GORDON S. CAMERON, Hamilton

0900 ANNUAL BUSINESS MEETING
RÉUNION D'AFFAIRES ANNUELLE

1115 FRED MCLEOD LECTURE
THE SPECTRUM OF CONGENITAL DEFORMITIES OF THE
CHEST AND THEIR OPERATIVE CORRECTION

Mark M. Ravitch
Montefiore Hospital
Pittsburgh, Pennsylvania, USA
symposium
pediatric surgery/chirurgie infantile

Royal College in cooperation with the Canadian Association of Paediatric Surgeons

le Collège Royal en collaboration avec l'Association canadienne de chirurgie infantile

Mon/lun Sep 10 1330 GATINEAU
(Le Reine Élizabeth)

ETHICAL PROBLEMS IN PEDIATRIC SURGERY – A PANEL DISCUSSION
PROBLÈMES D'ÉTHIQUE BIOMÉDICALE EN CHIRURGIE PÉDIATRIQUE – DISCUSSION DE GROUPE

CHAIRMAN/LE PRÉSIDENT: FRANK M. GUTTMAN, Montreal

1330 PANEL DISCUSSION

Panel Members
Mark Ravitch
Alex Haller
Stanley Mercer
Harry Bard

CHAIRMAN/LE PRÉSIDENT: SAMI A. YOUSSEF, Montreal

ABSTRACT/RÉSUMÉ
NO.

313 1530 POSTOPERATIVE RESPIRATORY FAILURE IN CONGENITAL DIA-
PHRAGMATIC HERNIA: EXPERIMENTAL STUDY IN LAMBS: Ugo de Luca,
Raymond Cloutier, Jean-Martin Laberge, Département de chirurgie, Université
Laval, Québec, et l'Hôpital de Montréal pour Enfants, Montréal
1545 MALIGNANT SACROCOCCYGEAL TERATOMA (ENDODERMAL SINUS, YOLK SAC TUMOR) IN INFANTS AND CHILDREN A 32 YEAR REVIEW. S.H. Ein, K. Mancer, S. Debo Adeyemi, The Hospital for Sick Children, Toronto

1600 ÉTUDE DU pH OESOPHAGIEN CHEZ 176 PATIENTS AVEC TROUBLES RESPIRATOIRES. Mamadou Ndoye, Arie L. Bensoussan, Hervé Blanchard, Département de chirurgie, Hôpital Sainte-Justine, Université de Montréal, Montréal

1615 REMPLACEMENT DE L'OESOPHAGE CHEZ L'ENFANT — ÉTUDE DE 27 CAS. Hervé Blanchard, Jean-Martin Laberge, Olivier Bosc, A.L. Bensoussan, Département de chirurgie, Hôpital Sainte-Justine, Montréal

1630 PEDIATRIC CROHN'S DISEASE: R. Postuma, S.P. Moroz, Departments of Surgery and Pediatrics, Children's Hospital, Winnipeg

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Tue/mar Sep 11  0900  GATINEAU
(Le Reine Élizabeth)

CHAIRMAN/LE PRÉSIDENT: GUSTAVO STRINGEL, Ottawa

ABSTRACT/RÉSUMÉ
NO.


320  0915  DIAGNOSTIC DELAY IN GASTRO-INTESTINAL INJURY WITH BLUNT ABDOMINAL TRAUMA: S. Mercer, L. Legrand, G. Stringel, P. Soucy, Children's Hospital of Eastern Ontario, Ottawa

321  0930  FETAL ULTRASOUND IN CONGENITAL DIAPHRAGMATIC HERNIA: A CLUE TO THE TIMING OF HERNIATION: N.E. Wiseman, F.A. Manning, University of Manitoba, Winnipeg

322  0945  DUPLICATION OF THE ALIMENTARY TRACT: Sami Youssef, Salam Yazbeck, Département de chirurgie, Hôpital Sainte-Justine, Montréal

323  1000  RECTAL PROLAPSE: IS THERE A RIGHT OPERATION?: D.P. Girvan, Division of Pediatric Surgery, War Memorial Children's Hospital, University of Western Ontario, London, Ontario

324  1015  GIANT OMPhALOCELE: A NEW APPROACH FOR A RAPID AND COMPLETE CLOSURE: Salam Yazbeck, Mamadou Ndoye, Jean G. Desjardins, Département de chirurgie, Hôpital Sainte-Justine, Montréal
325 1030 UMBILICAL ARTERIAL CATHETERIZATION IN NEONATES: PEDIATRIC SURGICAL IMPLICATIONS: G. Stringel, M. Richler, S. Mercer, B. McMurray, Children’s Hospital of Eastern Ontario, Ottawa


327 1115 A NEW TECHNIQUE FOR MEASURING ANAL CONTINENCE: B. Shandling, R.F. Gilmour, Ontario Centre for Crippled Children, and Hospital for Sick Children, Toronto

328 1130 MANAGEMENT OF TRACHEOBRONCHOMALACIA WITH CONTINUOUS POSITIVE AIRWAY PRESSURE: N.E. Wiseman, P.G. Duncan, C.B. Cameron, University of Manitoba, Department of Surgery and Anesthesiology, Children’s Hospital, Winnipeg


330 1200 CHOLELITHIASIS IN INFANCY: R.D. Schlechter, J.M. Laberge, S. Youssef, The Montreal Children’s Hospital, McGill University, Montreal
THE OUTCOME OF NEONATES WITH REPAIRED ESOPHAGEAL ATRESIA AND TRACHEOESOPHAGEAL FISTULA COMPLICATED BY MAJOR CARDIOVASCULAR MALFORMATIONS: W.J. Su, T. Izukawa, D. Cook, S. Ein, C. Stephens, R. Rowe, The Hospital for Sick Children, Toronto

CONDYLOMA ACUMINATA IN CHILDREN: G. Stringel, L. Corsini, S. Mercer, Children's Hospital of Eastern Ontario, Ottawa

CONSTIPATION, BLADDER INSTABILITY, URINARY TRACT INFECTION SYNDROME: Salam Yazbeck, Sean O'Regan, Erick Schick, Université de Montréal, Hôpital Ste-Justine, Montréal

EXTENSIVE GASTRIC DAMAGE FROM INGESTED ACID IN CHILDREN: D.A. Gillis, R. Kennedy, Gayle Higgins, The Izaak Walton Killam Hospital for Children, Halifax and the Dr. Charles A. Janeway Child Health Center, St. John's

THE MANAGEMENT OF SURGERY IN ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS): S. Kleinhaus, G. Weinberg, M. Sheran, S.J. Boley, Albert Einstein College of Medicine-Montefiore Medical Center, New York, New York, USA

COMPUTED TOMOGRAPHY LOCALIZATION OF AN ALDOSTERONOMA IN 10 YEAR OLD BOY: Jean-Martin Laberge, Denis Filiatrault, Jacques-Charles Ducharme, Hôpital Sainte-Justine and Montreal Children's Hospital, Montreal

DISTANT POST-OPERATIVE URINARY TRACT INFECTION IN HIRSCHSPRUNG'S DISEASE: Sean O'Regan, Salam Yazbeck, Département de pédiatrie et de chirurgie infantile, Université de Montréal, Montréal

APPENDICITIS AFTER BLUNT ABDOMINAL TRAUMA: Sigmund Ein, Clinton Stephens, Barry Shandling, The Hospital for Sick Children, Toronto

MANAGEMENT OF FECAL INCONTINENCE I: B. Shandling, R.F. Gilmour, Ontario Centre for Crippled Children, and Hospital for Sick Children, Toronto

PRIMARY PERITONITIS IN INFANTS AND CHILDREN – A 14 YEAR REVIEW: Sigmund H. Ein, Gustavo Stringel, Robert M. Bannatyne, The Hospital for Sick Children, Toronto, The Children's Hospital of Eastern Ontario, Ottawa
canadian association
of paediatric surgeons

l'association canadienne
de chirurgie infantile

Wed/mer Sep 12 0900 HÔPITAL SAINTE-JUSTINE
Montréal

CHAIRMAN/LE PRÉSIDENT: PIERRE-PAUL COLLIN, Montréal

DISCUSSION OF PROBLEM CASES IN PEDIATRIC SURGERY

DISCUSSION DE CAS-PROBLÈMES EN CHIRURGIE INFANTILE
abstracts
THE FRED G. McLEOD LECTURE

THE SPECTRUM OF CONGENITAL DEFORMITIES OF THE CHEST

AND THEIR OPERATIVE CORRECTION

Dr. Mark M. Ravitch, Pittsburgh, Pennsylvania

Dr. Ravitch was born in New York City and did his undergraduate education at the University of Oklahoma majoring in zoology and obtained Phi Beta Kappa. He graduated in medicine from the John Hopkins University School of Medicine in 1934. His intern and residency training was at the John Hopkins Hospital, his final year under Professor Alfred Blalock. During the Second World War, he was assistant chief of surgery and chief of thoracic surgery at the United States Army's 56th General Hospital. Following the war, he returned to John Hopkins where he rose to Associate Professor of surgery. In 1952, he moved to New York City where he was Clinical Professor of surgery at Columbia University and at Mount Sinai Hospital. In 1956, he returned to Baltimore and became Surgeon in Chief at the Baltimore City Hospital and Professor of surgery at John Hopkins University. In 1966, he moved to the University of Chicago where he became Professor of Paediatric Surgery and Head of the division of paediatric surgery. In 1969, he moved to Pittsburgh where he now lives and is Professor of surgery at the University of Pittsburgh, Surgeon in Chief at the Montefiore Hospital and on the Senior Surgical Staff of the Children's Hospital of Pittsburgh. He has been a member of numerous professional and scientific societies having served as first vice-president of the American College of Surgeons and the American Surgical Association. He was president of the surgical section of the American Academy of Pediatrics from 1967 to 1969. He has received numerous distinctions, including honorary fellowship in the Royal Australian College of Surgeons and the Royal College of Physicians and Surgeons of Glasgow. He received the Scientific Medal of the Vishnevskiy Surgical Institute, of Moscow in 1962. He has been a recipient of the Ladd Medal of the American Academy of Pediatrics. He has been a visiting professor and special lecturer at universities and hospitals throughout the world. He has written extensively and been the editor of a number of publications, including Current Problems in Surgery since 1964 and the two volume textbook, Pediatric Surgery. His writings have been numerous and covered a wide field of interests. In particular, he is well known for his writings on congenital deformities of the chest wall and their operative correction and is responsible for the introduction of modern stapling techniques in surgery to North America. He has also had a major interest in the historical aspects of medicine and also has written extensively on many non-surgical aspects of medicine and medical care.
POSTOPERATIVE RESPIRATORY FAILURE IN CONGENITAL DIAPHRAGMATIC HERNIA: EXPERIMENTAL STUDY IN LAMBS. Ugo de Luca, Raymond Cloutier, Jean-Martin Laberge, Département de Chirurgie, Université Laval, Québec, et l'Hôpital de Montréal pour Enfants, Montréal.

This experiment was carried out in order to study the effect of a chest tube left in place after surgical correction of a congenital diaphragmatic hernia. Lambs in which diaphragmatic hernia were induced antenatally, were operated upon at birth. After correction of the defect, some animals were left with a chest tube and others without a drainage.

Gaseous exchanges and ventilatory mechanics were studied. Morphometrics of lungs were done in all cases. Preliminary results confirm the clinical impression that postoperative reversion to fetal circulation is due to the insertion of a chest tube attached to an underwater seal after surgical correction of the defect.

MALIGNANT SACROCCGYGEAL TERATOMA (ENDODERMAL SINUS, YOLK SAC TUMOR) IN INFANTS AND CHILDREN - A 32 YEAR REVIEW S.H. Ein, K. Hancock, S. Debo Adeyemi
The Hospital for Sick Children, Toronto, Ontario
Fifteen cases of malignant sacroccgygeal teratoma were treated at our hospital over the last 32 years. These included five cases of endodermal sinus (yolk sac) tumor that arises in benign or immature teratoma, and ten cases of endodermal sinus (yolk sac) tumor that contains no teratoma. Most were females, and only one was a neonate. The presence of symptoms almost always indicated local extension or distant metastases. According to Altman's classification, all but two of these malignant tumors were Types III and IV. The resectability was low, but with aggressive radiotherapy and chemotherapy, second look operations in a few have been possible with increasing optimism for prolonged survival. So far only the newborn seems cured.
ETUDE DU pH OESOPHAGIEN CHEZ 176 PATIENTS AVEC TROUBLES RESPIRATOIRES.
Mamadou N'dove, Arié L. Bensoussan, Hervé Blanchard, Département de Chirurgie, Hôpital Sainte-Justine, Université de Montréal, Montréal.
Entre avril 1981 et octobre 1983, 300 patients ont été explorés par pH métroie à la recherche d’un reflux gastro-oesophagien pathologique. Les 176 patients qui avaient des manifestations respiratoires sont étudiés ici: asthme grave, pneumonies et bronchiolites à répétition, apnées, suffocations avec cyanose. Le reflux gastro-oesophagien a été étudié pendant 20 heures et évalué selon le score de Euler. Il a été jugé absent (0 à 25), moyen (25 à 50), grave (supérieur à 50).
Chez 62 asthmatiques, 42 présentaient un reflux modéré à grave. Dix-sept d’entre eux ont été opérés et nettement améliorés (crises plus espacées, hospitalisations diminuées, suppression de la corticothérapie).
Chez 33 patients avec des pneumonies à répétition, 17 avaient un reflux avec un score de 25 à 50 ou supérieur à 50. Trois ont été opérés et guéris.
Parmi les 18 enfants avec des bronchiolites répétées, 9 avaient un reflux modéré à grave, 4 d’entre eux ont été opérés avec succès.
Trente-trois nourrissons avec des apnées et 27 présentant des suffocations avec cyanose ont été explorés. Aucun n’avait un reflux pathologique.
Nous pensons, actuellement, que l’étude du pH oesophagien est utile pour dépister un reflux pathologique qui aggrave un asthme, ou qui provoque des bronchiolites et des pneumonies à répétition. Par contre, cette étude ne nous a pas permis de démontrer de reflux pathologique dans la genèse des apnées et des suffocations du nourrisson.

Etude rétrospective rapportant l’expérience de 27 remplacements de l’oesophage pratiqués chez des enfants de 1957 à 1980 et qui ont eu une catamnèse variant de 23 ans à 3 ans. Il s’agit de 18 filles et de 9 garçons. L’âge au moment du remplacement a varié de 3½ mois à 6 ans. Les indications: 1) atresie de l’oesophage de type I: 13 cas, 2) atresie de l’oesophage de type III où l’anastomose a été impossible: 5 cas, rupture complète d’anastomose post-correction d’atresie de type III: 2 cas, sténose récidivante post-correction d’atresie de type III: 1 cas, sténose caustique irréversible: 6 cas. Le substitut oesophagien a été un segment colique ou iléo-colique pour 17 patients, un tube gastrique pour 6 patients et un jéjunum pour 4 patients.
Conclusion: le remplacement de l’oesophage doit être limité aux patients chez qui une restauration intégrale de l’oesophage s’avère impossible. Il ne devrait pas être pratiqué avant l’âge de la station debout, soit 12 ou 18 mois.
PEDIATRIC CROHN'S DISEASE
R. Postuma, S.P. Moroz
Departments of Surgery and Pediatrics, Children's Hospital, Winnipeg.

This presentation reviews our 10 year clinical experience (1974–1983) with 33 Crohn's patients; 8 were diagnosed during the first five years and 25 during the second five years of the review. The median age of diagnosis was 13 years, range 5 to 16 years. The main presenting clinical features were abdominal pain (29), weight loss (26), and diarrhea (23). The method of diagnosis included radiological investigations and fiberoptic endoscopy with biopsy. The colon was involved in 20 patients. The therapy included sulfasalazine, steroids, parenteral nutrition (11 patients) including home parenteral nutrition (7 patients) and surgical resection: colectomy and ileostomy (4), resection only (5), appendectomy (2), laparotomy and biopsy (1), perianal surgery (2). There were no deaths.

We conclude that the incidence of pediatric Crohn's disease appears to be increasing, is more common than ulcerative colitis and requires surgical treatment in a high proportion of patients. In our experience the pediatric Crohn's patients respond well to aggressive nutritional therapy including home parenteral nutrition and carefully selected surgical treatment.

HEREDITARY PARATHYROID HYPERPLASIA—AN URGENT SURGICAL PROBLEM IN INFANTS
The Izaak Walton Killam Hospital for Children, Halifax, Nova Scotia

Familial infantile hyperparathyroidism is associated with a uniformly fatal outcome if untreated. Definitive diagnosis is not difficult. Hypercalcemia may be extreme, serum values in our patients having ranged between 3.75 and 6.75 mmol/L. (15–27 mg%). There are extensive osseous changes, even at birth. The disorder is the result of hyperplasia involving all 4 glands. The clinical and biochemical abnormalities are reversible by parathyroidism. Urgent surgical intervention is mandatory.

We have treated 4 infants (2 sets of siblings) ranging in age from 9 days to 6 months. The initial procedure was sub-total parathyroidectomy. A small portion (10–30%) of 1 gland was left in situ in the first 3; in the most recent patient (1983), tiny slivers of 1 gland were implanted in forearm musculature. Early postoperative hypocalcemia was constant in each patient. However, all became hypercalcemic within a few months, and have required re-operation to excise hyperplastic parathyroid tissue. Three ultimately came to total parathyroidectomy. The most recent patient required excision of a portion of the autotransplanted gland. Subsequently he has remained normocalcemic without therapy.

Permanent hypoparathyroidism following complete excision has been managed satisfactorily.

Please note: (A brief color film depicting the gross appearance and ease of identification of hyperplastic glands in the operating theatre is available.)
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TRAUMATIC GASTROINTESTINAL PERFORATIONS IN CHILDREN
The Hospital for Sick Children, Toronto, Ontario, Canada
From 1968 to 1983, 20 children with traumatic perforations of the gastrointestinal tract were treated. Sixteen were secondary to blunt trauma and of these, three were stomach perforations, three duodenal, nine jejunal or mid small bowel one ileal and one caecal. Nine had severe injuries in at least one other system. Diagnostic peritoneal tap or lavage was performed in four patients which prompted early laparotomy. The mean time of injury to O.R. for the remaining twelve patients was 18.8 hours. Significant early postoperative complications attributable to the gastrointestinal injury occurred in ten of the sixteen patients; late complications in only three. There was one death associated with a severe head injury. The correlation between the pathology and laboratory and x-ray findings was unreliable. Delay in the diagnosis and treatment of children with perforated bowel may contribute to their morbidity. Aggressive measures in the diagnosis of this condition, including contrast studies, CT scan and diagnostic peritoneal lavage are at times warranted.

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DIAGNOSTIC DELAY IN GASTRO-INTESTINAL INJURY WITH BLUNT ABDOMINAL TRAUMA
S. Mercer, L. Legrand, G. Stringel, P. Soucy
Children's Hospital of Eastern Ontario, University of Ottawa.
Silent intestinal injury with blunt abdominal trauma is well documented in the adult, but much less in the child. Solid organ injury is treated non-operatively in the child if possible. Peritoneal lavage is rarely performed. Covert gastrointestinal injury is easily missed even with careful observation. Our experience at C.H.E.O. (1974-84) is of 12 cases. There were 2 gastric, 2 duodenal 4 jejunal and 2 colonic perforations. The delay in diagnosis of gastro intestinal injuries averaged 132 hours in 10 patients and 432 hours in 2 colonic perforations. In 3 cases child abuse was implicated and 2 were seat belt injuries. In six, there were serious associated injuries. Even in complete transection free air may not be present in the initial x-rays and peritoneal lavage may be negative. The place of peritoneal lavage and recommendations for serial x-rays of the abdomen are described. There were no deaths in this series.
FETAL ULTRASOUND IN CONGENITAL DIAPHRAGMATIC HERNIA: A CLUE TO THE TIMING OF HERNIATION.
V.E. Wiseman, F.A. Manning. University of Manitoba, Winnipeg.

Antenatal ultrasound diagnoses of congenital diaphragmatic hernia (CDH) were made in 4 patients. The indications for fetal assessment were polyhydramnios in 3 patients and hypertension in 1. The diagnoses were established at 28, 30, 34, and 40 weeks gestation. Diagnoses were confirmed at birth and 3 infants underwent early surgical repair followed by a fatal outcome. The fourth infant expired at 1 hour of age and was found at postmortem to have congenital absence of the right lung. All of the infants had severe hypoplasia of the left lung. A fifth infant born with congenital diaphragmatic hernia underwent fetal ultrasound examination at 38 weeks gestation at which time there was no evidence of CDH. This infant survived following early surgical repair.

It is postulated that visceral herniation occurred between the 38th and 40th week of gestation in this infant with minimal secondary effect upon lung development. In infants with CDH it is generally believed that pulmonary hypoplasia is a secondary phenomenon resulting from encroachment upon the developing lung by herniated viscera. Early gestational herniation results in severe pulmonary hypoplasia incompatible with extraterine survival whereas with late herniation survival is possible. The clinical experience supports this hypothesis.

DUPLICATION OF THE ALIMENTARY TRACT.
Sami Yousef, Salam Yazbeck, Department of Surgery, Hôpital Sainte-Justine, Montreal.

Forty-four patients with duplication of the alimentary tract were seen at Ste-Justine Hospital between 1960-1982, an average of two a year, with no significant change in incidence. There was a slight male predominance. Half presented in the first month, and 75% by the first year of life. No etiologic factors could be identified during pregnancy. The ileum was the most frequent site, followed by the esophagus. Twenty-eight were cystic and 16 were tubular. Only one third of the cystic and half of the tubulars communicated with the main lumen. In the majority, the mucosa of the duplication was of the same type as the adjacent segment. In few, it was different, or contained more than one histologic type. Presenting symptoms were related to location of the duplication, and more specifically, to age of presentation: in the newborn, symptoms were more dramatic, while milder in the older child. Associated anomalies were found in 19 cases, 8 of these were vertebral. In most, the diagnosis was made at time of surgery. Treatment consisted of excision of the duplication. One death occurred, and we had 25% morbidity which was not serious, and in all, recovery was complete. An analysis of our series will be made, in relation to different hypotheses of etiology.
Division of Paediatric Surgery, War Memorial Children's Hospital,
University of Western Ontario, London.

Rectal prolapse in infants and children frequently can be treated
by non-operative methods with excellent results. Periodically,
however, the process is refractory to the usual conservative measures
and surgical intervention is indicated. Numerous operative procedures
have been designed for the correcting of rectal prolapse with the
result that no one operation appears to be entirely satisfactory.
The anatomical and physiological aspects of this problem will be
discussed along with a review of methods of management. An operation
described by Ashcraft and Holder has been used with some modification
in 6 patients over the last several years. The operative technique
will be discussed in detail. Follow-up on these patients along with
the problems encountered will be reviewed.
This operation is felt to be physiologically sound and to present
certain benefits over other suggested operative procedures.

GIANT OMPhALOCELE: A NEW APPROACH FOR A RAPID AND COMPLETE CLOSURE.
Salam Yazbeck, Mamadou N'doye, Jean G. Desjardins, Département de Chir-
urgie, Hospital Sainte-Justine, Montreal.

Giant omphalocele are usually treated in stages. The skin is closed
first and the giant ventral hernia left is dealt with when the patient
is one year old or older. This attitude has many advantages but treat-
ment of the giant hernia may be very difficult and often requires many
operations.

We have used a new approach to this problem in 2 cases. A polyamide
fibre mesh is glued over the skin of the abdominal wall, the thorax and
the lumbar regions. The distance between the apposed recti muscles is
then progressively decreased by repeated inrolling of the polyamide
mesh with running longitudinal sutures on the mesh itself. This re-
duces progressively the hernial content. When the recti are sufficien-
tly approximated a definitive procedure is carried out. In one patient
the giant hernia was completely closed in 3 weeks. Another patient is
presently undergoing the same treatment.

This simple bedside technique does not require any specific antiseptic
measure and may replace advantageously the silastic pouch in many
cases.

Umbilical arterial catheterization (U.A.C.) is common in neonatal intensive care units.

One hundred consecutive newborns having U.A.C. were reviewed. Only polyvinyl chloride barium impregnated catheters were used (Argyle 3.5 and 5.0 French). The commonest indications were respiratory distress syndrome, asphyxia and congenital heart disease. Seventy-five percent were under 2500 gm.

Ampicillin and Calcium are the most common medications (infused in 70 and 65 babies). We had 3 major complications with gangrene of the lower extremity in two cases. Amputation of the foot was needed in one and amputation of the toes in the other. A third case developed gluteal necrosis. In all 3 cases catheter placement was low and had infusion of Ampicillin. In 2 Calcium was also administered. Minor complications were seen in 32 cases. Vascular spasm in the lower limb was commonest.

All catheter tips were cultured and bacterial colonization occurred in 14%. Staphylococcus epidermidis was the commonest organism. Proven necrotizing enterocolitis was seen in 8 cases and suspected in 8 others.

Blanching is a serious sign and was seen in the 3 cases with major complications. Infusion should be stopped immediately. Other routes for infusion of medication are very desirable.

When necrotizing enterocolitis is suspected the catheter should be removed.

FETAL CYSTIC ADENOMATOID MALFORMATION: PRENATAL DIAGNOSIS AND NATURAL HISTORY. NS Adzick, MR Harrison, PL Glick, MS Golbus, RL Anderson, BS Mahony, PW Callen, JH Hirsch, DA Luthy, RA Filly, AA deLorimier. UCSF Fetal Treatment Program, San Francisco, California.

Congenital cystic adenomatoid malformation (CCAM) is a pulmonary maldevelopment that can have a broad spectrum of clinical presentations. We studied the natural history and pathophysiology of CCAM detected prenatally by ultrasound in ten fetuses. Two types of fetal CCAM can be distinguished by gross anatomy, ultrasound findings, and prognosis. Microcystic lesions are usually associated with fetal hydrops and have a poor prognosis (5 cases with 1 survivor). Antenatal diagnosis, maternal transport, and immediate thoracotomy after birth allowed the first reported survival of a newborn with a large microcystic CCAM. Macroscopic lesions are not usually associated with hydrops and have a favorable prognosis (4 of 5 survived). Fetal thoracentesis of one macrocystic tumor did not provide lasting decompression of normal lung tissue in utero. We conclude that fetuses with hydrops are at high risk for fetal or neonatal demise without intervention. Fetuses with CCAM who do not have hydrops have a good chance for survival with maternal transport, planned delivery, and immediate neonatal resuscitation and surgery.

22
A NEW TECHNIQUE FOR MEASURING ANAL CONTINENCE
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Ontario Centre for Crippled Children, Toronto, Ontario. Hospital for
Sick Children, Toronto, Ontario.

95 children underwent measurement of their anal sphincter force
(ASF). A catheter was inserted into the rectum and the balloon di-
tended to result in a sphere with a diameter of 1.5 cms. The catheter
was then pulled out and the maximum pull pressure in grams was recorded
using a Beckman force transducer.

Four groups of children were studied. 12 were normal; 33 had spina
bifida; 20 were normal children under general anaesthesia and 30 had
specific bowel problems such as constipation and encopresis.

The normal unanaesthetized group had an ASF of 526 grams with a
standard deviation of 59. The normal anaesthetized group had an ASF
of 253 grams and a standard deviation of 21. Those with spina bifida
had an ASF of 320 grams and a deviation of 23. However, when the test
was immediately repeated in the latter group, the mean dropped to
0 grams.

Conclusions:
1. Spina bifida patients have a sphincter able to generate an ASF.
2. The ASF in spina bifida is unstable and easily overcome.
3. The unconscious normal child has a consistently lower ASF than
when conscious, but this force is the same even if sequentially
challenged.

We have developed a new modality to measure anal continence. This
has value in assessing results of all forms of anorectal surgical
procedures and facilitates comparison of findings in an objectively
measurable way.

MANAGEMENT OF TRACHEOBRONCHOMALACIA WITH CONTINUOUS POSITIVE AIRWAY
PRESSURE.
N.E. Wiseman, P.G. Duncan, C.B. Cameron. University of Manitoba, Dept.
of Surgery and Anesthesiology, Children's Hospital, Winnipeg.

Three infants presenting with cyanosis and respiratory distress re-
quired early airway support with the use of endotracheal intubation.
Attempts at extubation resulted in recurrent airway obstruction. Their
clinical course was characterized by recurrent episodes of hyperinfla-
tion, atelectasis, and pneumonia. Bronchoscopy, bronchography, and
chest fluoroscopy confirmed the diagnosis of tracheobronchomalacia
noting extensive collapse of the trachea and main stem bronchi. Two of
the infants also had gastroesophageal reflux and recurrent pulmonary as-
piration. In each infant, management of tracheobronchomalacia was car-
rried out with a tracheostomy tube attached to a portable CPAP apparatus.
CPAP was initially maintained at 10 cms. of water and over the course of
management weaning was carried out by decreasing the positive pressure
and treatment time per 24 hour period. Total treatment time ranged from
1/2 to 2 years. Feedings were carried out via gastrostomy and 2 infants
with severe gastroesophageal reflux underwent fundoplication. Two of
the children were in hospital during the entire course of treatment and
one child was managed at home. Each of the 3 infants was successfully
weaned from distending pressure, decannulated and discharged from hos-
pital. The management of severe tracheobronchomalacia with the use of
long-term CPAP appears to be a reasonable alternative to tracheal plication,
tracheal stents, and long segment tracheobronchoplasty.
NECROTIZING ENTEROCOLITIS - A CHRONIC DISEASE.
Divisions of Pediatric Surgery and Neonatology, University of Calgary.

Whereas the overall incidence of necrotizing enterocolitis (NEC) in
high risk nurseries has not appreciably altered, the number of newborns
failing to respond to medical treatment and requiring urgent surgery has
remarkably decreased. Late surgery and diarrhea create prolonged disability.

During the period June 1979 to December 1983, 120 newborns in the
Intensive Care Nursery at the Foothills Hospital in whom a diagnosis of
NEC was made, were studied. 98% of the infants survived the acute episode;
88% with medical treatment only and 10% with the addition of urgent sur-
gery. 2% of the children died as a result of total small and large bowel
necrosis.

Surgery involved exteriorization-resection of the involved necrotic
intestine leaving the infant with a ileostomy and a colonic mucous fistula.
Whereas 50% of infants postoperatively developed colonic strictures, only
4% of the medically treated NEC infants presented later with a colonic
obstruction due to a stricture. No colonic strictures spontaneously resolved.

The most common site of perforation was the ileocecal ascending colon
region. Strictures usually lengthly, developed in the colon most often
in the transverse and descending portions. Stricture development in the
small intestine has not been observed. 5 children (4%) were noted to
have rectal strictures with submucosal fibrosis as far distal as the
dentate line. The possibility of rectal involvement and colonic stric-
ture make a barium enema mandatory prior to closure of the ileostomy.

NEC results in prolonged intestinal morbidity with stricture formation
and difficult stool control as the result of extensive distal ileal and
colonic loss. Prolonged follow-up is necessary in all these children.

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CHOLELITHIASIS IN INFANCY.
R.D. Schlechter, J.M. Laberge, S. Youssef.
The Montreal Children's Hospital, McGill University, Montreal.

Whereas cholelithiasis has been considered a rare disease in infancy,
several reports of calculous biliary disease without associated
hemolytic disease have recently been published. An association between
cholelithiasis and prolonged parenteral nutrition has been suggested.
We have recently treated 4 infants who developed a range of gallbladder
problems associated with total parenteral nutrition (TPN) and normal
biliary anatomy. The patients had a variety of concomitant problems
exclusive of ileal disease. All were maintained on TPN for intervals
ranging from 6 days to 6 months. They varied in age from 2 weeks to 2
years at time of diagnosis. Mode of presentation ranged from acute
cholecytisits to incidental cholelithiasis noted at laparotomy.
Ultrasound documented biliary sludging in 1 case and cholelithiasis
in the 2 other cases; 1 patient had no ultrasound. The 3 operated
patients had multiple mixed stones. Bile cultures were negative in all
cases.

The exact mechanism by which biliary sludging and cholelithiasis
occur is unclear, but the theories include: (1) TPN induced
cholestasis, leading to diminished bile flow and increased risk of
precipitation, (2) increased bile lithogenicity secondary to TPN and
(3) fasting in itself, by suppressing gallbladder contractions.
Recommendations are made for early routine ultrasound as well as
interval abdominal ultrasonography of all infants receiving prolonged
total parenteral nutrition.
THE OUTCOME OF NEONATES WITH REPAIRED ESOPHAGEAL ATRESIA AND TRACHEOESOPHAGEAL FISTULA COMPPLICATED BY MAJOR CARDIOVASCULAR MALFORMATIONS

W.J. Su, T. Izukawa, D. Cook, S. Ein, C. Stephens, R. Rowe
The Hospital for Sick Children, Toronto, Ontario

Since the majority of patients with isolated esophageal atresia and tracheoesophageal fistula can be cured by surgery attention is increasingly being drawn to the situation of this defect with associated malformations that have a bearing on the prognosis, treatment and decision to operate. Therefore 179 newborns operated on for esophageal atresia and tracheoesophageal fistula during a ten year period were included in this report. Two-thirds were male. Fifty-one babies (28%) had major cardiovascular malformations, but these were often one of several other associated anomalies. Half of these newborns weighed less than 2500 grams; and the heavier ones survived more often than those of low birth weight. The most frequent major cardiac malformations were PDA, VSD, ASD, Coarctation of Aorta and Tetralogy of Fallot. The incidence of such cardiac lesions is eight per 1000 live births, but in these 179 newborns, it was 36 times greater. The hospital mortality of our newborns whose repaired esophageal atresia and tracheoesophageal fistula was complicated by a cardiovascular malformation was 49% (21/51).

CONDYLOMA ACUMINATA IN CHILDREN.

G. Stringel, L. Corsini and S. Mercer.
Children's Hospital of Eastern Ontario. Ottawa.

Condyloma Acuminata (venereal warts) are sexually transmitted involving the human papilloma virus. It has become commoner in adults in the last decade. While infection is most often by sexual intercourse, it can be transmitted at birth and with close contact with infected individuals. It is common in marked sexual promiscuity.

Condyloma acuminata in children should alert the physician to the possibility of sexual abuse or early sexual activity. We report 14 cases of condyloma acuminata in children; from 6 months to 17 years. Sex incidence was equal. All had social and family problems in common, except for one who developed perianal condyloma after repeated rectal dilatations after a pull through procedure for Hirschsprung's Disease.

Two cases of sexual abuse were documented. Treatment methods included podophillin, liquid nitrogen, 5 fluorouracil cream, fulguration and laser therapy. An adequate social history was available only in 6 cases. Investigations should include VDRL and cultures for Gonococcus, careful medical and social history for neglect or abuse.
CONSTITUTION BLADDER INSTABILITY, URINARY TRACT INFECTION SYNDROME.
Salam Yazbeck, Sean O'Regan, Erick Schick, University of Montreal, Hopital Ste-Justine, Montreal.

Urodynamic abnormalities may be observed with recurrent urinary tract infection (R.U.T.I.) in children in the absence of uroradiologic abnormalities. 29 children investigated for R.U.T.I. who had uninhibited bladder contractions all had functional constipation. M:F, 1:28; mean age 7 ± 2.6 yrs; mean duration of urinary symptoms 3.25 ± 1.7 yrs. 50% of patients denied constipation as a symptom though questioning did disclose elements suggesting the presence of chronic constipation. 20 patients had enuresis. 8 had encopresis. Urodynamic studies using a Disa 210 system indicated the presence of bladder instability as indicated by the presence of non inhibited contractions during the filling phase of the bladder with an amplitude equal or greater than 15 cm of H2O. By rectal manometry the majority of these children had poor perception of rectal distension until at least 40 ml of air had been injected into the rectal balloon. All patients could tolerate balloon distension of 80 to 110 ml before experiencing discomfort. Patients were treated by phosphate soda enema for one month. Urinary tract infection episodes ceased in 26 patients who followed the regimen. 18 patients had cessation of and 2 improvement of enuresis. Encopresis ceased 3 to 5 days after initiation of treatment. These studies suggested that treatment of constipation allows for return to the normal rectal empty state and allows for cessation of recurrent urinary tract infections and elimination or improvement of enuresis.

EXTENSIVE GASTRIC DAMAGE FROM INGESTED ACID IN CHILDREN
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(D.A. Gillis and Gayle Higgins)
The Dr. Charles A. Janeway Child Health Center, St. John's, Newfoundland
(R. Kennedy)

The accidental ingestion of caustic substances by children is relatively common. Most major injuries occur from strong alkalies and involve burns of the mouth, pharynx and esophagus. Ingested acid produces gastric injury by a combination of heat generation and coagulation necrosis. Esophageal injury from acid is relatively uncommon. Acid gastric injury tends to be subacute, but can be devastating because of delayed clinical signs.

We report 2 children in whom extensive gastric destruction resulted from the accidental ingestion of acid. Neither patient suffered significant esophageal injury. One developed an extensive antral stricture. In the other child, there was so much tissue destruction that he required total gastrectomy. Both patients have survived and are clinically well.
THE MANAGEMENT OF SURGERY IN ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS).
Albert Einstein College of Medicine-Montefiore Medical Center, New York
Recognition of a new transmissible and often fatal disease, AIDS, in the adult population, i.e., homosexuals and IV drug abusers, has attained worldwide attention. Over 35 infants and children, aged from 2 mos to 5 yrs, with a similar disease have been identified at our institution. Sixteen of these have required 29 operations to determine or administer proper therapy: 12 open lung biopsies, 4 thymus biopsies, 9 lymph node biopsies, 4 insertions of Broviac catheters.
Because of potential infection of personnel treating AIDS patients and the compromised immunologic status of the patients themselves special precautions are necessary when operating on these children. These include: 1) personnel coming in direct contact with patients wear gowns, gloves and masks, 2) patients go directly from their isolation rooms to the OR bypassing customary holding areas, 3) disposable anesthe sia circuits and monitoring leads are used, 4) surgeons and scrub nurses doubly gloved and 5) on leaving the OR, all outerwear is discarded in specially marked isolation bags. Specimens are handed to the immunologists in a fresh state for cultures. Lung biopsies were performed through a short left anterior thoracotomy in the 6th intercostal space using the GIA stapler to resect a wedge of lingula. Except for small infants with large thymus glands approachable only through the chest, thymus biopsies were done through a cervical approach.
Utilizing these techniques we have had no mortality or morbidity in our patients, nor to date any infection of hospital personnel. AIDS patients can be operated upon with no unusual complications if proper precautions are taken.

COMPUTED TOMOGRAPHY LOCALIZATION OF AN ALDOSTERONOMA IN 10 YEAR OLD BOY.
Jean-Martin Laberge, Denis Filiatrault, Jacques-Charles Ducharme,
Sainte-Justine Hospital and Montreal Children's Hospital, Montreal.
Primary aldosteronism in children under 16 years of age is usually due to adrenal hyperplasia. Only 7 cases could be found in the literature where it was caused by a solitary adrenal adenoma; all but one were female. We treated a 10 year old boy with hypertension and hyperkalemic alkalosis discovered incidentally during investigation of growth retardation. Computed tomography clearly defined a 1.5 cm nodule in the right adrenal gland and demonstrated a normal gland on the left side. Serum renin and aldosterone levels confirmed the diagnosis of primary aldosteronism. Right adrenalectomy was performed through a posterior approach without exploring the left side. A 1.3 cm adenoma was described at pathology. The patient was discharged from hospital 4 days post-operatively with normal blood pressure, serum electrolytes and serum aldosterone level.
It is important to differentiate patients with adrenal adenoma from those with hyperplasia as the latter do not require surgery. With the high resolution computed tomography now available, this should be the initial imaging modality. It is safer and less invasive than adrenal venous sampling, especially in children. If it does show a solitary nodule, no other tests need to be performed, and a unilateral adrenalectomy can be safely and easily done through a posterior or flank approach. This case appears to be the youngest caucasian boy with aldosteronoma and the first pediatric patient to be diagnosed by computed tomography alone.
DISTANT POST–OPERATIVE URINARY TRACT INFECTION IN HIRSCHSPRUNG'S DISEASE. Sean O'Regan, Salam Yazbeck. Department of Pediatrics and Pediatric Surgery, Université de Montréal, Montreal.

We have previously noted (a) that treatment of constipation in patients with urinary tract infection (U.T.I.) and bladder hyperreflexia resulted in cessation of U.T.I.'s and (b) that encopresis without U.T.I. is associated with bladder hyperreflexia. To determine if conditions potentially associated with constipation were complicated by U.T.I. we have retrospectively analysed charts of 90 patients with Hirschsprung's disease, (HD). Mean age at diagnosis was 1 1/2 yrs. Mean follow-up time was 3.3 yrs. 18 patients had urine cultures prior to colostomy of which 7 were positive (39%), 21 of 30 cultures after the immediate post-operative period were positive after colostomy (70%). Of 44 cultures done post pull through 31 were positive (70%). These data suggest that U.T.I. may complicate the follow-up of patients with HD and may indicate the presence of constipation more commonly than previously thought. These data also suggest that resolution of the anatomic abnormality of HD may not resolve all medico-surgical problems associated with this condition.

APPENDICITIS AFTER BLUNT ABDOMINAL TRAUMA
Sigmund Ein, Clinton Stephens, Barry Shandling
The Hospital for Sick Children, Toronto, Ontario
At our hospital about 300 children a year are operated on with the diagnosis of acute appendicitis, yet blunt abdominal trauma was the etiological factor in only three such cases in the last 10 years. The 3 children (2 boys and 1 girl) ranged from 6 to 15 years. They all suffered blunt abdominal trauma causing abdominal pain and vomiting. Two of the 3 were admitted to hospital and were treated with NPO and IV. Within 5 days the younger 2 patients developed fever with signs and symptoms of peritonitis such that appendicitis was suspected prior to laparotomy. Exploration revealed an acute appendix and 150cc of old blood from a splenic hematoma; (which was left alone) in one boy, and an acute gangrenous appendix in the girl. The 15 year old boy slowly developed signs and symptoms of a pelvic appendiceal abscess, which did not settle on conservative management. He had a difficult appendectomy followed by a stormy course but ultimately a successful result. The intraluminary appendicular pressure may be increased by any sudden force which decreases the intraabdominal space. This force must be of sufficient violence to produce a rupture of the mucosa with resulting infiltration and inflammation. Therefore, any child who has suffered blunt abdominal trauma and, instead of improving, slowly develops peritoneal signs in the lower abdomen should be operated on with the diagnosis of acute appendicitis.
MANAGEMENT OF FECAL INCONTINENCE I
B. Shandling, R.F. Gilmour.

All pediatric surgeons care for some patients with fecal incontinence. Such patients tend to be rejected by society and are in need of much support. Especially pitiful is the lot of children with spina bifida. We have treated 200 patients with fecal incontinence. Initially 27% were on laxatives; 25% were taking suppositories and 25% were being digitally disimpacted daily. 16% were on a low-volume enema routine. All wore diapers. The rest were managed by changing the feces-containing diaper whenever this was possible in order to minimize social disruption.

Results were graded "poor" (no control); "fair" (minimal control); "good" (predictable but management difficult) and "excellent" (no complaints - continent). 88% of patients presented initially as "poor" or "fair".

After treatment 5% were being managed by laxatives, 4% by suppositories and 1% being disimpacted. 5% had modified their diet to manage their fecal incontinence. 84% were on an enema programme.

With our regime of management 81% of patients developed a "good" to "excellent" result and 18% had a "poor" to "fair" result. Factors responsible are discussed.

Of those treated by enema of whom 86% had initially presented with "poor" or "fair" results there is now a "good" to "excellent" result in 84% of the children and almost all wear no diapers now. These data indicate that the largest factor in the gratifyingly improved results can be attributed to the implementation of the enema routine.

PRIMARY PERITONITIS IN INFANTS AND CHILDREN-A 14 YEAR REVIEW
Sigmund H. Ein, Gustavo Stringel, Robert M. Bannatyne
The Hospital for Sick Children, Toronto, Ontario and the Children's Hospital of Eastern Ontario, Ottawa, Ontario.

Primary peritonitis is a diffuse infection of the peritoneal cavity for which there is no obvious focus of infection. It makes up only one to two percent of all pediatric "acute abdomens", and 13 to 17 percent of all infant and childhood peritonitis. During the last 14 years, at two children's hospitals, the two authors have treated a total of 25 infants and children with primary peritonitis (excluding those with cirrhosis, nephrosis or a neuro-surgical ventriculoperitoneal shunts). Almost all of these patients were female and most between five and ten years old. The presenting picture was one of short onset with high fever, vomiting and generalized peritonitis. The infants and children were listless, toxic and all had high white blood cell counts. All were operated on with the diagnosis of ruptured appendicitis. The operative findings were typical in all cases: negative laparotomy, diffuse serositis and cloudy, slimy peritoneal fluid. Appendectomy without drainage was performed in each case. In our series, 14 peritoneal cultures were negative, seven grew E. Coli, three a streptococcal species and one pneumococcus and meningococcus. The morbidity and mortality in our series was zero and this was almost certainly due to antibiotics.
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Le fond d'éducation permet d'inviter chaque année d'éminents chirurgiens pédiatriques étrangers pour enseigner dans différents centres médicaux du Canada. Il permet également à notre Association de déléguer un conférencier en chirurgie pédiatrique lors de la réunion de la Société Canadienne de Pédiatrie. Il rend possible une participation élaborée de notre Association au programme scientifique du Congrès Annual du College Royal des Médecins et Chirurgiens du Canada. Il nous aide enfin à défrayer le coût de la réunion annuelle de l'Association Canadienne de Chirurgie Infantile.

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We gratefully acknowledge the assistance of Robert A. Davis and the Programme Committee of the Royal College of Physicians and Surgeons of Canada in the preparation of this programme.