Symposium

SURGICAL PROBLEMS IN CHILDHOOD

HERBERT E. COE, M.D., Seattle, Chairman; ALEXANDER H. BILL, Jr., M.D., Seattle; ORVAR SWENSON, M.D., Boston; C. EVERETT KOOP, M.D., Sc.D., Philadelphia; HENRY W. HUDSON, Jr., M.D., Boston; OSWALD S. WYATT, M.D., Minneapolis

INTRODUCTION
HERBERT E. COE, M.D.

At the Toronto meeting of the American Academy of Pediatrics it was suggested that the Surgical Section be responsible for a portion of the program at the next annual meeting, the presentations to be in the form of a symposium. Articles relating to surgical conditions in infants and children frequently appear in current medical literature presenting opinions which are often divergent, or even conflicting, and members of the Academy have often commented on this apparent confusion. It seemed timely, therefore, to select several of the more common of these conditions and assign each to a member of the Surgical Section for a discussion which might reasonably be expected to represent one of the views more generally accepted by surgeons primarily interested in children. Complete unanimity is of course not to be expected nor desired, as an honest difference of opinion promotes healthy discussion and progress.

Several of the comments on the presentations indicated that panel discussions on some of the subjects would be most interesting and might well be included in future programs.

The close attention and favorable reaction of the audience was most gratifying, and it was regrettable that Dr. Potts who planned and coordinated the Symposium was prevented by illness from acting as chairman. Illness also prevented Dr. Wilkinson from presenting his discussion on "Bronchiectasis" but fortunately his time could be made available for the Honorary Life President of the Surgical Section, Dr. William E. Ladd, whose excellent address will be long remembered by all who heard it.

PECTUS EXCAVATUM (FUNNEL CHEST)—A MEDICAL OR SURGICAL PROBLEM?
ALEXANDER H. BILL, JR., M.D.
(To be published as an original article)

INGUINAL HERNIA IN INFANTS AND CHILDREN
ORVAR SWENSON, M.D.

This study is based on 506 infants and children on whom herniorrhaphies were performed. Two hundred seventy-one of the patients were infants under 2 years of age, and practically all 64 patients who were treated for incarceration were in this lower age group.

Patients who presented themselves with left inguinal hernia were carefully examined on the right side. Of the 153 patients with left inguinal hernia a sliding sensation on palpation of the cord on the right side prompted bilateral exploration on 73, and 65 of these patients were found to have right inguinal hernial sacs as well as the obvious left hernia. Out of the 80 with left-sided hernia in whom the right side was not explored 12 have so far returned for repair of a right hernia. These statistics emphasize the importance of considering bilateral repair in patients who present themselves initially with a left inguinal hernia. On the other hand, patients who present themselves with a right inguinal hernia rarely have a left. Out of 245 patients who presented themselves with right
Inguinal hernias it was decided to do bilateral exploration on 17 after careful examination of the left side. In 15 of these a left inguinal hernia was found. Out of the 228 patients only 4 subsequently presented themselves with a left inguinal hernia. This figure is probably inaccurate because some patients may have had a second herniorrhaphy elsewhere. It appears that patients with initial left inguinal hernia have about a 50% chance of developing one on the right side. On the other hand, those patients who present themselves with a right inguinal hernia only have a slight chance of subsequently developing one on the left side.

There have been relatively few postoperative complications in this group of 506 patients. There were no deep wound infections in any of the patients. In 4 incisions superficial redness occurred, and one or more subcuticular silk sutures extruded from the wound. In view of this we believe subcuticular closure with collodion painted on the wound and no gauze dressing is amply justified.

There was one recurrence in this series. The single postoperative death occurred in an infant with incarceration which could not be manually reduced and required an emergency operation.

**UNDESCENDED TESTICLE: DIFFERENTIAL DIAGNOSIS AND MANAGEMENT**

C. Everett Koop, M.D., Sc.D. (Med.), F.A.A.P.

The phenomenon of an empty scrotum may indicate undescended, retracted or absent testicles. Traditional misconceptions concerning the empty scrotum include the belief that cryptorchidism is far more common than it is, that it is frequently corrected spontaneously, that the testicles finish their embryologic descent at puberty, and that injected hormones are beneficial in hastening the descent of the testicle or in making certain of that process at puberty.

Careful examination of the patient's inguinal area and the attempt to milk the testicle into the scrotum will indicate whether one or both testes are present, whether a testicle high in the inguinal canal can or cannot be pushed into the lower scrotum, and whether the condition is unilateral or bilateral. Any combination is possible—testes may be unilaterally or bilaterally not palpable, retracted, or embryologically undescended. Any 2 conditions may co-exist.

If a testicle can be brought into normal anatomic position by manipulation, that gonad is physiologically retracted and the patient needs no therapy.

If the testicle can be palpated but cannot be brought into the normal position by manipulation, a congenital defect is present which cannot be corrected by nonsurgical means, except in the very rare case in which the undescended testicles are part of an endocrine arrangement with other obvious stigmata.

When a testicle cannot be palpated in the scrotum or canal, it means that the testis is either atrophic, nonexistent, retroperitoneal, or impossible to feel because of over-lying inguinal fat.

Only the undescended or nonpalpable testis is a therapeutic problem. If either of these is unilateral, the problem of sterility is not of primary concern. The indications for operation in unilateral cryptorchidism are cosmetic, physiologic, or associated with the indirect inguinal hernia which is almost always present with an undescended testicle.

When the problem is bilateral, the avoidance of sterility is of primary concern. We suggest surgical treatment of unilateral or bilateral undescended or non-palpable testes.

Success with operation almost always depends on the length of blood supply. Since the blood supply is usually more elastic and redundant in young children, there is an age of election for orchidopexy. Certainly, the operation should be accomplished in the preschool years and our experience would indicate the greatest number of successful procedures can be expected in the very young.

A definitive opinion concerning the future position of the testicle can usually be made in the first postoperative months.

**BLEEDING FROM THE BOWEL**

Henry W. Hudson, Jr., M.D.

Bleeding from the bowel, large in amount and recognizable as blood, is not only alarming but also is an indication of a surgical emergency. A sporadic incident, with blood in small amount, justifies an expectant attitude and the educated guess that the explanation is minor trauma. Reference
is made to some of the general disturbances in which bleeding may be a sign but this discussion is limited to conditions which have surgical implications. Foreign bodies whether ingested or introduced through the anus, local trauma, and blood swallowing are mentioned. Diaphragmatic hernia, Meckel's diverticulum, duplication of segments of the intestinal tract, atypical intussusception, polyp or polyps, are discussed and illustrative cases cited. Other lesions included are hemangioma involving the bowel wall, carcinoid lesions, leiomyoma, carcinoma and portal hypertension. Reference is made to the disturbingly large group in which no diagnosis is established even after investigation, including exploratory laparotomy, has been carried out. In this group, trauma from unrecognized foreign bodies is a suggested explanation.

When a patient with melena or suspected melena presents, when no physical abnormality is discovered, and when hematologic study is negative the diagnostic approach may be as follows:

1. Chemical or microscopic confirmation that what appears to be blood is blood
2. Digital and endoscopic examination
3. X-ray examination by means of barium enema
4. Proctosigmoidoscopic examination after suitable preparation and, usually, under anesthesia with preparation to follow by
5. Abdominal exploration under full anesthesia with adequate exposure and with an orderly inspection and palpation of the intestinal tract from the rectum to the cardia.

INTUSSUSCEPTION IN INFANCY

O. S. WYATT, M.D.

After the first few weeks of life acute intussusception is the most frequent type of intestinal obstruction encountered during infancy. It behooves every physician to substantiate or rule out this entity once suspicion is aroused.

Any infant that has passed blood and mucus by bowel must be seen within the hour, and for one of us to give the mother an assuring answer, or prescribe over the telephone is pure neglect, and abuse of our obligations and responsibilities.

If the onset is violent it is probably a tight intussusception and the baby will be in shock. Fully 50% of babies with intussusception do not present shock. Vomiting is not an early symptom in acute intussusception. Assumption of the knee-chest position is almost pathognomonic for enterocolic intussusception. "Red-current jelly" stool rarely occurs under 6 hours.

Administration of chloral hydrate helps to carry out satisfactory abdominal palpation. The triad of (1) intermittent abdominal pain, (2) blood and mucus by bowel, (3) palpable abdominal tumor makes the diagnosis of intussusception certain.

Many intussusceptions can be reduced by barium enema, when seen in the 1st 4 to 12 hours. Given a late intussusception or a very shocky baby do not attempt reduction by a barium enema, this is definitely a surgical problem.

Now I presume it is heresy for a pediatric surgeon to talk about the nonsurgical management of acute intussusception. On the contrary, I have become convinced that about 50% of early intussusceptions can be treated safely in this manner. As a result the management of early acute intussusception becomes as much a problem for the pediatrician and roentgenologist as for the surgeon.

Certain pitfalls must be kept in mind when reducing an intussusception with a barium enema. They are: 1. incomplete reduction; 2. injury to appendix and its blood supply; 3. over-looking an enteric intussusception; 4. rupture of the gut.

I do not agree that it is quite as easy or safe as some quarters would like us to believe, but I do believe that with acute observation and repeated examinations you can keep your baby out of trouble.

Again may I emphasize that a barium enema is not justified as a therapeutic agent, if the onset of the intussusception was violent and the baby presents severe shock. Neither do I feel that barium should be used if you are dealing with an intussusception that is over 12 hours in duration. Even after blood has been passed I can see no objection to using barium as a diagnostic measure, but if the intussusception cannot easily and readily be reduced, surgery should be resorted to at once.

A thorough gastric lavage must be done, and an indwelling gastric catheter in place before going to surgery. Shock if present must be treated, an intravenous catheter in place, and functioning properly. Have glucose flowing, plasma connected, and blood available.
At surgery inspect ileocecal junction to make sure reduction is complete. Search for a Meckel's and if involved in intussusception remove. If the appendix has been caught in the intussusception remove. Perhaps more frequently than we realize, appendiceal pathology may initiate an intussusception.

In closing may I again emphasize careful history, early examination and diagnosis, followed by immediate reduction, and I am confident that the mortality of intussusception in infants will be markedly reduced throughout the nation.
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