Current Experience With Boley's Endorectal Pull-Through

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ABSTRACT

During the past eight years, thirtyone patients with Hirshsprung's disease have been treated in our institution. Seventeen cases within this group have undergone a Boley's modification endorectal pull-through. There are 11 males and 6 females in the series. Fifteen patients with aganglionosis involve the rectosigmoid colon, one involves the rectum and one extends to splenic flexure. None of the patients have urinary tract anomalies. There has been no post operative deaths. Two minor complications have occured. The average follow up period is 9.6 months. The functional results post-operatively have been excellent. The thirteen patients over the age of 3 years are completely toilet trained. The remaining patients are too young to be toilet-trained, but they are continent in the sense that they do not soil between bowel movements.

Congenital aganglionic megacolon (Hirschsprung's disease) is one of the most important gastrointestinal problems encountered in infancy and childhood. During infancy this entity accounts for approximately one-third of all cases of neontal intestinal obstruction.[1] The congenital absence of ganglion cells in the rectum or colon leads to ineffective conduction of peristalsis, resulting in functional obstruction. Prompt diagnosis, decompression of proximal ganglionated bowel, and a definitive pull-through procedure are the accepted therapeutic approaches to this disease.

Presently, the three most common operation for the definite treatment of Hirschsprung's disease are Swenson (introduced in 1948)[2], the Duhamel's (introduced in 1956)[3], and Soave's procedures. Each of the procedures has been modified in recent years in order to increase the ease of performing the operation and to decrease the associated complications. The Soave's procedure was introduced in 1963[4] as an endorectal pull-through procedure without a distal anastomosis. The operation was modified in 1968 by Boley[5] to include a primary anastomosis at the anus. One of the problems associated with this modification is the difficulty in performing the lower anastomosis at the anus. Coran et al[6] described a technique to facilitate the performance of this lower colonic anastomosis.

Our aim of this communication is to report our experience with modified endorectal pull-through and to emphasize the safety of primary colo-anal anastomosis without colostomy.

METHODS

From April, 1980 through March 1988, 31 patients have been treated for Hirschsprung's disease at Salmaniya Medical Centre, Bahrain. Of these group 17 patients have undergone Boley's modification of endorectal pull-through. Eleven were males and six were females. A male to female ratio was 1.9 to 1. The age span at the time of definite operation was 6 to 36 months with a mean of 9.6 months. All 17 patients have been carefully followed post-operatively. The follow-up period has ranged from 5 to 94 months, with an average follow up of 49 months.

There have been 15 patients with aganglionosis of rectum and sigmoid colon, one patient with aganglionosis of rectum and one patient with aganglionosis extending to the splenic flexure. None of our patients had urinary tract anomalies.

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As soon as the diagnosis of Hirschsprung's disease was confirmed, a daily rectal and colonic irrigation with normal saline solution started. The preparation for definite procedure starts when the loaded colon evacuated. If the infant was less than three months of age or less than 5Kg, daily bowel irrigation continued in the ward after his discharge till he is 3 months old. The pre-operative bowel preparation in all 17 patients consisted of liquid diet for 3 days, oral neomycin and mitronidizole, and rectal and colonic irrigation for 48 hours prior to surgery. Each patient received systemic gentamicin and cefuroxime for 12 hours prior to the pull-through procedure and for 5 days post-operatively.

Operative procedure performed as a combined abdominal-perineal operation. The details of the procedure we perform in our institution have been described by Boley[5]. We use a suprapubic incision. The dissection of rectal mucosa continued down to 5 mm above the dentate line. Posterior myectomy performed by excising a 10 mm strip of posterior muscular wall of the rectum. An end to end colo-rectal anastomosis was performed 5 mm above the dentate line with single layer of interrupted silk. No back up colostomy is done at or before the time of definite surgery. The urethral catheter and redivac drain are removed 24 hours post-operatively. The child usually started on oral feeding 72 hours after surgery. A rectal examination is performed on the tenth post-operative day, if everything is satisfactory, the patient is discharged from the hospital.

RESULTS

There has been no operative-related mortality in our series. The morbidity was low, considering the complexity of the procedure and the age of the patients involved. There was one minor complication, bilateral post-operative epididymoorchitis. This unusual complication might have occured as a result of urethral catheterization, urine culture was sterile and no urinary tract anomalies were detected.

The 100% follow-up in our series have allowed us to completely evaluate the functional results post-operatively and they have been excellent. Thirteen are completely toilet-trained with no reported incidence of incontinence. However, three are still too young to fully evaluate incontinence and toilet-training. Nevertheless, based upon Swenson's criteria for sphincteric control in children not yet toilet-trained, that is, the mother's observation that the child is perfectly clean between bowel movement (2-3 times/day)[7], incontinence does not appear to be problem in these patients. None of these patients had recurrent chronic constipation.

DISCUSSION

Since Soave[8] initially reported his series of patients, the endorectal pull-through procedure has become one of the preferred methods of treating Hirschsprung's disease. Boley's modifications had improved the morbidity and mortality. The functional results in many series[9,10] including ours certainly support the conclusion that mortality and function of lower colon are excellent following this technique. In our series we had no operative death. Many recent published reports[10,11] had no mortality in their small series of patients treated with Boley's modifications of endorectal pull-through for Hirschsprung's disease. We had one minor complication, epididymoorchitis, which we presumed was a result of urethral catheterization. Urine culture failed to show any organism and urological workup was negative. It might be advisable to avoid the urethral catherterization, and empty the bladder by manual compression at the time of surgical procedure. None of these patients had wound infection. In this series our overall morbidity rate 5.8% which is comparable to other reported series[9].

CONCLUSION

Our approach to an infant with Hirschsprung's disease consist of regular rectal and colonic irrigation, followed by a definite endorectal pull-through procedure without a protective colostomy at approximately 3 months of age or when the infant is 5 Kg. This approach has been utilized in 17 children with aganglionosis in our institution. We conclude that primary colo-anal anastomosis is safe without protective colostomy. We strongly believe that colostomy can increase morbidity, hospital stay and expenses.

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