INTESTINAL DUPLICATION

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INTRODUCTION

Intestinal duplication is a rare anomaly. A number of terms descriptive of the individual specimen have been used in literature. Ladd in 1937 introduced the term duplication to these malformations. Numerous theories have been put forward to explain them. The vacuolation theory of Bremer is most commonly accepted. Clinical presentations of this condition are equally numerous.

In this article we present three cases seen in the Unit of the Senior Surgeon, Singapore General Hospital, during the last twelve months, to highlight the difficulty one usually encounters in preoperative diagnosis and the principle of surgical treatment for this rare condition.

CASE REPORTS

Case 1

The child was first seen at the Paediatric Medical Unit at the age of 9 months with gastroenteritis and iron-deficiency anaemia. He was treated and discharged well for convalescence. One month later he was re-admitted for diarrhoea and abdominal distension. Physical examination showed a distended abdomen. X-Ray of the abdomen showed gaseous distension of the bowels. The child was treated conservatively with intravenous drip and intragastric suction without improvement.

Laparotomy revealed a cyst 5 cm. × 6 cm. arising from the mesenteric border of the distal small gut. There was a perforation and brownish fluid was oozing from it. A stalk about 8 cm. long extended from the cyst to the root of the mesentery. The peritoneal cavity was filled with brownish fluid and there were numerous adhesions among the loops of the small bowel. The cyst was excised. The adjacent intestine proper was noted to be non-viable. This segment was excised and the continuity of the bowel re-established. Appendicectomy was also done. Histology reported an enterogenous cyst lined by gastric mucosa. The post-operative period was uneventful.

Case 2

A seven year old child was first seen at the Casualty Department for lower abdominal pain and tenderness. He was referred to the Paediatric Medical Unit as a case of urinary tract infection. Here examination revealed visible peristalsis and two freely mobile globular masses in the abdomen.

Laparotomy revealed duplication of the mid portion of the ileum, consisting of two distended segments (15 cm. and 10 cm. long respectively) intimately connected with each other. A segment of the ileum with the duplication was resected, and the bowel continuity re-established. The appendix was also removed. Histology showed the cyst to be lined with flattened intestinal epithelium with no villous projections, and a normal muscle coat with neurons in its walls.

Case 3

A one month old child was first seen at the Paediatric Medical Unit with a history of vomiting after feeds, abdominal distension and a slow weight gain since birth. Examination revealed a distended abdomen. The haemoglobin level was 7.9 gm.% and the peripheral blood film showed hypochromic normocytic anaemia. The signs and symptons were ascribed to poor feeding techniques. The child was treated and discharged with a haemoglobin level of 8.6 gm.%. But the mother did not bring her up for follow-up treatment as advised.

For the next three months the child continued to fail to thrive and was treated by numerous general practitioners and Chinese "Sinsehs" without improvement.

The child was finally admitted to the surgical ward for intestinal obstruction. Physical examination revealed a dehydrated patient with a tympanitic distended abdomen, but no fluids were elicited. Barium enema showed no abnormalities of the large bowel. The patient did not improve with conservative treatment and laparotomy was done. A small duplication cyst about 3 cm. in diameter was found adjunct to the ileo-caecal valve. A short segment of the terminal ileum with the cyst, the caecum and part of the ascending colon were excised, and the ileo-colonic anastomosis re-established.

Post-operatively, the child continued to have abdominal distension. A second laparotomy revealed adhesions at and around the ileo-colonic anastomotic site. The adhesions were freed and the anastomosis re-fashioned.

This time the post-operative period was uneventful and the child was discharged well.

DISCUSSION

Intestinal duplications are usually discovered in infancy and childhood, but they may be discovered at any period of life. The diagnosis is usually made

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at laparotomy for intestinal obstruction as occurred in our three cases, though occasionally in the course of investigating abdominal pain, a plain X-Ray of the abdomen may reveal an unusually dilated pocket of gas, or a gas and fluid level. A barium meal and follow through may outline the duplication in those cases where there are communications with intestine proper.

Intestinal duplications can only be treated by means of surgery. In dealing with these lesions it is important to note that it is difficult to separate the duplication from the gut proper because the two possess a common muscular wall, and that the arteries and veins of the continguous portions of the alimentary course over the surface of the cyst, making attempts at dissection dangerous. In removing a duplication, a segment of intestine has to be resected along with it. This is illustrated in our case 1. The duplication was initially dissected out. But the blood supply to the adjacent gut was insufficient and hence a resection of this was carried out also. Resection of a segment of intestine with the duplication, followed by primary anastomosis is the treatment of choice. In duodenal duplication, a window is made between the duplication and the duodenum proper. In the rare instance of the long segment type, stripping of the lining mucosa may avoid a massive resection.

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