A Case of Dual Intussusception

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Introduction

Intussusception in adults is a rare cause of intestinal obstruction, accounting for less than 0.1% of all hospital admissions [1]. We present a rare case of a 23 year old male who had complete inversion of the Meckel's diverticulum with heterotopic pancreas as the lead point along with an additional ileo ileal intussusception proximal to it.

Case Report

A 23 year old serving soldier presented with central, intermittent and colicky pain abdomen, increasing in intensity, of one day duration. There was one episode of vomiting and he had not passed stool for three days. There was no relief with antispasmodics. There was no history of diarrhoea, fever, constipation, melena or urinary symptoms. On general examination he was afebrile, normotensive, with normal pulse and respiration. Examination of abdomen revealed tenderness in the umbilical region and distension of abdomen. There was no guarding or rigidity. Bowel sounds were increased in the upper abdomen. Digital rectal examination did not reveal any abnormality.

His haemogram, liver functions, renal profile, blood sugar and serum amylase were within normal limits. Upright radiograph of abdomen showed multiple fluid levels consistent with small bowel obstruction with intestinal obstruction at the level of distal ileum.

He was taken up for laparotomy. Peroperatively about 18 inches from the ileo cecal junction, a segment of small intestine was seen invaginating in the distal ileum. Resection and anastomoses was done. Post operative recovery was uneventful.

An intestinal segment measuring 25.2 cm in length was sent for histopathological examination. Gross examination of the intestinal segment revealed 14 cm of intestinal segment invaginating into the distal segment. The intussusceptum was gangrenous (Fig. 1). About 5 cm from the distal end another diverticulum was seen arising from the antemesenteric border of the intestine. Meckel's diverticulum was inverted, infarcted measured 4.2cms with a lead point which was fleshy, polypoid,

measuring 2.5cms in diameter and completely obstructing the lumen. Cut section was nodular and tan in colour (Fig. 2a & b). The specimen was fixed in 10% buffered formalin, routinely processed and embedded in paraffin. Three-micrometer-thick sections were cut and stained with hematoxylin-eosin.

Microscopic examination of the intestinal specimen revealed transmural infarction of intestine with rest of the intestine showing partial denudation of mucosa and oedema. Multiple sections of the inverted diverticulum showed all layers of the intestine. Histological examination of the fleshy nodule showed pancreatic tissue with acini and ducts with irregular bundles of smooth muscle tissue (Type III heterotopia) [2]. There was no stromal reaction, necrosis, mitosis or dysplasia (Fig. 3a & b).

Discussion

Intussusception is the telescoping of a segment of the gastrointestinal tract into an adjacent one. Adult intussusception is different from child intussusception in many aspects. It is an uncommon and difficult diagnosis and surgical resection is generally required. Ninety percent occur in the small or large bowel and the remaining 10% involve the stomach or a surgically created stoma. The single most common site is the small bowel [1]. 80-90% of all adult intussusceptions have an underlying cause, with neoplasms being the leading cause in approximately 65% of cases. Malignancy is reported to be a leading cause of intussusception in adults [3,4]. Idiopathic intussusception in the small bowel accounts for 8-20% of all cases [1].

Meckel's diverticulum is a true diverticulum containing all the layers of intestine. Ectopic tissue is found in approximately 50% of cases with gastric tissue in 60-85 % and pancreatic tissue in 5-16%. Major complications include bleeding, obstruction, intussusception, diverticulitis and perforation [5].

Pancreatic heterotopia is the presence of aberrant

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Fig. 1 : Resected intestinal segment with gangrenous intussusception

pancreatic tissue possessing its own duct system and vascular supply, with no vascular, neural, and anatomical contact with the normal pancreas. Pancreatic heterotopia can develop due to either metaplasia of multipotent endodermal cells in situ or transplantation of embryonic pancreatic cells to adjacent structures. The common gastrointestinal sites of occurrence include the stomach, duodenum, jejunum, Meckel's diverticulum, gallbladder and oesophagus [2]. Heterotopic pancreas as a lead point of intussusception has been reported [6] with one study describing it as a new variant in the development of vitellointestinal tract malformation [7].

Heterotopic pancreas has been classified into four types. Type I with total pancreatic heterotopia with all pancreatic cell types present, Type II is composed of pancreatic ducts only (the so called canalicular variety), Type III comprise acinar tissue only (exocrine pancreas), and Type IV is of islet cells only (endocrine pancreas) [2]. The histological classification of the heterotopic pancreas in our case was Type III.

Conflicts of Interest

None identified

Fig. (2a & b) : Torsed and inverted Meckel's diverticulum with a polypoid tip, with cut section showing tan coloured nodule (heterotopic pancreas)

Fig. 3a & b : Microphotograph showing pancreatic acini and ducts. Left-(H & E x 10), Right- (H & E x 40) view.

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