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Sigmoid Volvulous in a 13-Years Child, A Rare Cause of Large Bowel Obstruction at Temeke Regional Referral Hospital, Dar-Es-Salaam-Tanzania

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ABSTRACT

Sigmoid volvulus is a rare cause of intestinal obstruction in the pediatric age group. Rotation of the redundant sigmoid colon about its narrow mesenteric base results in vascular compromise and large bowel obstruction. Predisposing factors for sigmoid volvulus are redundant sigmoid colon, Hirschsprung's disease, congenital anomalous fixation of the colon, and chronic constipation. If it is not diagnosed in time, it may lead to serious complications such as gangrene, perforation, septic shock, and eventually death. Thus, the condition warrants prompt evaluation and treatment. Here, we report a case of sigmoid volvulus in a child with redundant sigmoid colon in the Southern part of Tanzania.

Keywords

Sigmoid volvulus, Hirschsprung's disease, Gangrene, Pediatrics.

Introduction

Sigmoid volvulus is characterized by torsion of the sigmoid colon around its mesenteric axis, causing luminal obstruction and potential vascular compromise. While frequently encountered in adults, especially the elderly, its occurrence in the pediatric population is extremely rare. In children, it accounts for fewer than 5% of all reported cases globally. Sigmoid volvulus is an exceptionally rare and potentially life-threatening condition in the pediatric age group. A high index of suspicion is necessary to reach a diagnosis and avoid morbidity and mortality [1,2].

Case Report

A 13-years-old boy, with no previous disease/comorbidities, presented to the emergency department with complaints of abdominal pain and abdominal distension, obstipation, and multiple episodes of vomiting for the past three days. The pain was colicky in nature, initially intermittent and thereafter becoming constant. He had no history of recurrent episodes of constipation or difficulty in the passage of stools. His birth and development history were noted to be normal, with no specific history of late passage of meconium or any operative or invasive procedures. Clinical examination revealed a moderately built and nourished child with Tanner stage 2, and upper abdominal distension.

The child was noted to have tachycardia, tachypnoea, dyspnea, and signs of moderate dehydration. Abdominal examination revealed upper abdominal distension with umbilicus in the midline, guarding, rebound tenderness and absent bowel sounds with digital rectal examination revealing empty rectum. Blood and biochemical parameters were within the normal limits. A plain radiograph (Figure 1) of the abdomen in standing posture revealed a massively dilated colonic loop with a classical "Coffee Bean" sign with an elevated left hemidiaphragm giving a strong suspicion of Sigmoid Volvulus.

After resuscitation, the patient was taken to the operating room for an emergency exploratory laparotomy. Intra-operative findings revealed a gangrenous Sigmoid Volvulus of 360° around its mesentery (Figure 2). The twisted part of the sigmoid colon appeared longer (40cm long) than expected in a pediatric age group, being the cause of the volvulus. Therefore, the child underwent sigmoidectomy with Hartmann's colostomy.

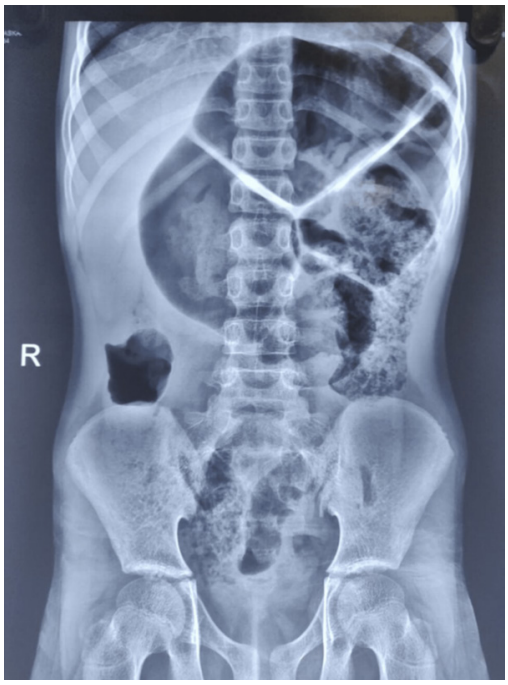

Figure 1

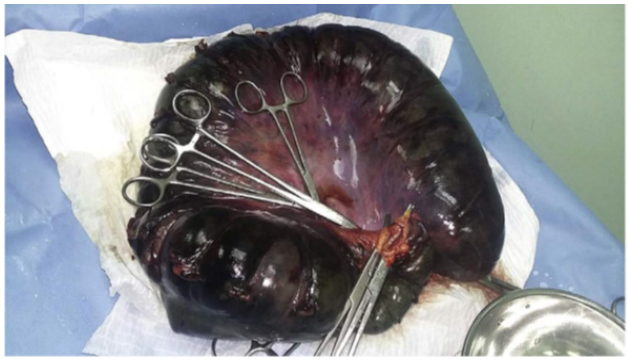

Figure 2

Discussion

Volvulus can develop at any segment of the large bowel, but it is commonly seen in the sigmoid colon due to the long mesentery and inherent anatomy. However, volvulus involving sigmoid colon in the pediatric age group is extremely rare entity [3].

The pathophysiology often involves redundant sigmoid colon, chronic constipation, or congenital anomalies like Hirschsprung's disease and intestinal malrotation. However, idiopathic cases without identifiable predisposing factors have been reported [1,4]. The predisposing factor in the present case seems to be redundant sigmoid colon as intra-operatively we found abnormally longer sigmoid colon than it was expected at the age of 13yrs.

The patients usually present with sudden onset of colicky abdominal pain followed by abdominal distention and absolute constipation. The pain is felt in the lower abdomen toward the left iliac fossa. Distension is primarily in the upper abdomen rather than the lower. Vomiting is often a late symptom. The sensation of tenderness is spread all over the abdomen with resonance on percussion. Bowel sounds are usually sluggish [5,6]. The current case presented with similar findings; gurding and rebound tenderness were due to presence of gangrenous bowel (Figure 2).

Diagnosing Sigmoid Volvulus in children requires a thorough history and clinical examination; this can be aided by radiological imaging. In stable patients, an abdominal X-ray is a useful initial investigation, which can reveal the classic "coffee bean" sign; however, they are only diagnostic in about 30% of case [1,3,7]. If uncertainty persists or if there is suspicion of perforation or ischemia, a CT scan of the abdomen and pelvis may be more diagnostic. CT findings, such as the "whirlpool" or "bird's beak" signs, are considered diagnostic of SV and can also provide valuable insight into the cause of the obstruction and its associated complications, which represents the rotation of the mesentery [3,4,7]. Abdominal x-ray in the present case clearly revealed classic "coffee bean" sign (Figure 2) hence there was no need for further diagnostic tests.

Sigmoidectomy with either primary anastomosis or colostomy is the definitive treatment for Sigmoid Volvulous. Recurrence is common when detorsion without resection is performed (operative: 25%, non-operative: 35%) [8,9]. In the current case since the twisted bowel segment was none viable therefore we perfomed sigmoidectomy and Hartmann's procedure.

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