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Case Report

Rare Clinical Presentations of Chronic Sigmoid Volvulus in Young Adults: Report of Two Cases

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Abstract: ***Background*:** Sigmoid volvulus is among the common causes of intestinal obstruction worldwide**.** It usually occurs in elderly patients and rarely reported in children and young adults. Chronic form of sigmoid is a rare surgical condition in which patient can present with equivocal symptoms and signs of intestinal obstruction. ***Case presentation: Case 1*:** A 22 year old male university student presented with a long-standing history of abdominal discomfort and passage of loose stool. He occasionally experienced constipation and abdominal distension whenever he ate carbohydrate rich food. On admission at BMC, he had abdominal distension and hypertympanic percussion note on abdominal examination. Abdominal x-rays revealed features of sigmoid volvulus and patient was later prepared for elective laparotomy. Resection of a redundant sigmoid colon and primary anastomosis was done. ***Case 2:*** A 17 year old male referred from a peripheral district hospital with six months history of painless abdominal distention. During this period, he suffered from frequent attacks of early satiety and occasional constipation. On admission at BMC, his abdomen was distended with hypertympanic percussion note and exaggerated bowel sounds on abdominal examination. Abdominal x-ray and barium enema revealed features of sigmoid volvulus. Sigmoidectomy followed by primary colorectal anastomosis was done. ***Conclusion*:** Sigmoid volvulus should be considered as a differential diagnosis when attending young patients with a long-standing history of abdominal distension and constipation.

Keywords: Sigmoid volvulus, young adults, abdominal distenstion, constipation.

BACKGROUND

Colonic volvulus is the third most common cause of large bowel obstruction and volvulus of the sigmoid colon has been documented to be the most common form of volvulus worldwide [1-3]. Sigmoid volvulus occurs when the sigmoid colon twists axially around a narrow mesentery base, leading to strangulation, ischemia, gangrene and perforation. It constitutes around 25% of the bowel obstruction cases reported in developing countries compared to 10% in industrialized countries [2, 3].

Patients with sigmoid volvulus usually present with a short duration history of abdominal pain, absolute constipation, abdominal distension and occasional vomiting [2]. It is commonly described in patients presenting with chronic constipation, specifically is commonly seen in elderly patients diagnosed with bowel obstruction. Occasionally, sigmoid volvulus has been described in young age [4-6]. We hereby, present two cases aged 17 and 22 years (mean age 19.5 years) diagnosed with sigmoid volvulus at Bugando Medical Centre (BMC), a tertiary institution serving the Northwestern Zone of Tanzania along the shores of Lake Victoria and also the teaching hospital for the Catholic University of Health and Allied Sciences (CUHAS).

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CASE PRESENTATION

Case 1

A 22 year old male university student attended at the BMC Surgical Clinic with a long-standing history of abdominal discomfort and passage of loose stool. Over the past five months, he had noticed worsening of symptoms by experiencing on and off relative constipation and abdominal distension whenever he ate carbohydrate rich foods. Before being referred to the BMC Surgical Clinic, he had several physician reviews in which routine investigations of full blood picture, urinalysis, stool analysis and culture were unremarkable.

On examination, he was wasted, not pale with stable vital signs. There were no signs of dehydration or shock. His abdomen was mild distended eliciting a hypertympanic percussion note but normal digital rectal findings. Abdominal x-rays showed features of sigmoid volvulus (Figure 1). The patient was informed of findings and an elective laparotomy and sigmoidectomy was planned. At laparotomy, a redundant sigmoid volvulus twisted 360° in a clockwise direction without vascular compromise was observed (Figure 2). Resection of the redundant Sigmoid colon followed by primary anastomosis was done successfully and patient sent back to the surgical ward for postoperative care. He recovered well without any complications and discharged after three days post-operatively. The patient was followed-up for six months and he had a successful convalescence without any new complaints.

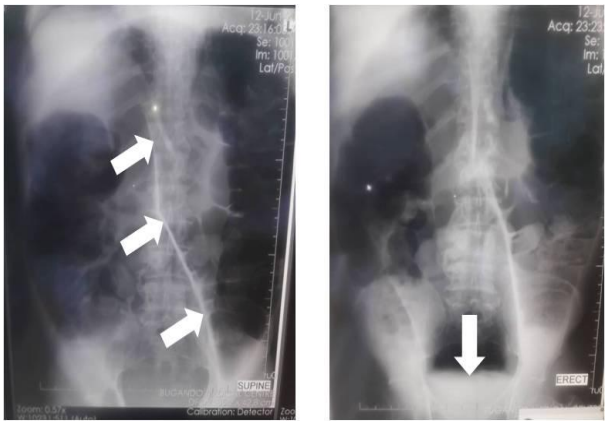

Figure 1: Case 1 supine abdominal x-ray (left) showing hyperlucent dilated ahaustral sigmoid bowel loops, approximation of the medial walls of the sigmoid loops as a summation line (white arrows); erect abdominal x-ray (right) demonstrating an air-fluid level (white arrow) in keeping with sigmoid volvulus

Figure 2: Intra-operatively, Case 1 showing a viable, distended and redundant sigmoid colon

Case 2

A 17 years old boy referred from a peripheral district hospital with a six month history of painless abdominal distention. During this period, he suffered from frequent attacks of early satiety and occasional constipation. He denied history of fever, weight loss, anorexia or diarrhea. He was attended at peripheral hospitals as a case of constipation and amoebiasis without significant relief. Physical examination at BMC revealed a healthy young boy who was not dehydrated with stable vital signs. His abdomen was distended with a hypertympanic percussion note and exaggerated bowel sounds with an empty rectum on digital rectal examination. Evaluation for possible Hirschsprung's disease was done with a negative rectal biopsy result since he recalled to have been having constipation history since childhood. Initially, he reported to have at least a single episode of constipation each month but gradually progressing to two or three weekly, which was controlled by taking fruits and drinking plenty of water. Abdominal x-ray and barium enema showed features of sigmoid volvulus (Figure 3). An elective laparotomy was scheduled and in which we found viable distended and redundant sigmoid volvulus twisted 360° along its mesenteric axis (Figure 4). We successfully resected Sigmoid colon followed by primary colorectal anastomosis. He recovered well post operatively and discharged on fourth day with fairly good condition. Two weeks and one-month post-surgery review showed that the patient had recovered very successfully with no any new complaints.

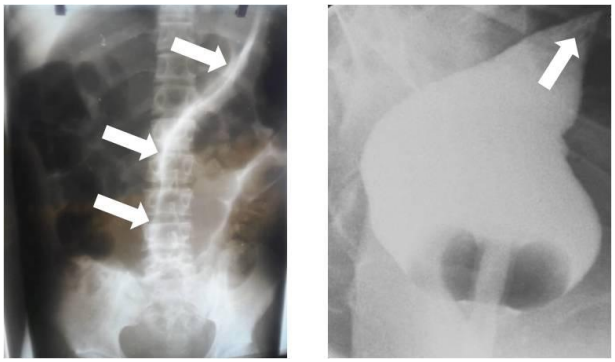

Figure 3: Case 2 abdominal x-ray (left) showing hyperlucent dilated ahaustral sigmoid bowel loops, approximation of the medial walls of the sigmoid loops as a summation line (white arrows) pointing towards the pelvis; barium enema (right) shows a contrast tapering at the rectosigmoid junction with a typical bird's beak deformity (white arrow)

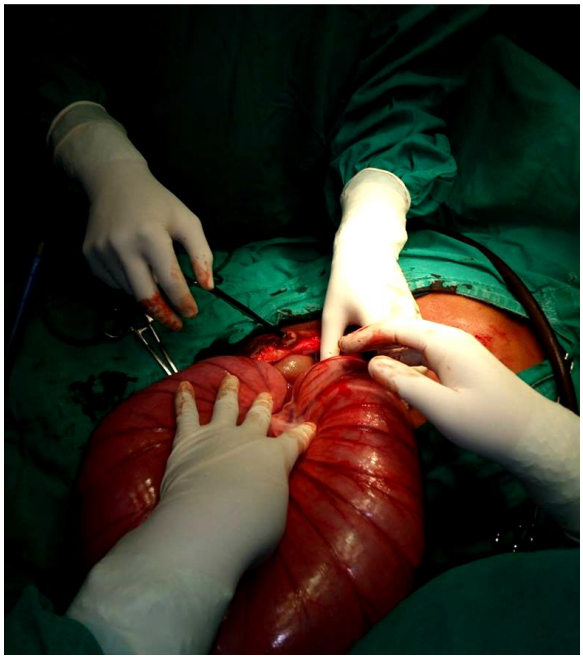

Figure 4: Intra-operatively, Case 2 showing a viable sigmoid colon twisted in a 360°clockwise direction

DISCUSSION

Sigmoid volvulus has been described to be a disease of the elderly usually occurring in older adults with a mean age of ranging from 50 to 70 years at presentation in different geographical locations and a higher incidence in men [1, 2]. However, sigmoid volvulus can rarely occur at any age, with case reports in infants and children, as well as in otherwise healthy teenagers and younger adults [4-6]. Our two cases represent a rare young age presentation of sigmoid volvulus at 17 and 22 years old respectively.

Majority of patients usually present with sub-acute form of sigmoid volvulus in which patient will complain of abdominal pain, distention and constipation for a short duration of time [1-3, 7]. The presented two cases had chronic sigmoid volvulus with symptoms lasting for more than 3 months. Apart from usual symptoms of abdominal distension, both cases were accompanied with vague symptoms eluding the clinical diagnosis of sigmoid volvulus. In our first case patient, presented with symptoms of passing loose stool and history of on and off constipation whenever he took carbohydrate rich diet while our second case patient presented with recurrent and frequent attacks of early satiety and occasional constipation throughout the duration of his illness. These unusual presentations in our cases should raise an alarm of ruling out sigmoid volvulus whenever we attend patients with a longstanding history of abdominal distension or constipation.

Abdominal X-ray has been used as radiological tool for evaluating patient with features of intestinal obstruction in most of resource limited settings. In patient with sigmoid volvulus, It shows markedly distended bowel loop, which assumes an inverted *U*-shaped appearance, with the limbs of the sigmoid loop directed toward the pelvis. The colonic haustra may be lost and progressive distention elevates the sigmoid loop under one side of the diaphragm. An upright radiograph shows a greatly distended sigmoid loop with air-fluid levels mainly on the left side of the abdomen and extending toward the right hemidiaphragm. If additional radiologic studies are necessary, computed tomography (CT) scan or barium enema may be obtained. Barium enema along with plain films can increase diagnostic accuracy in patent with equivocal radiographic findings. [7]. Our two cases had typical radiological findings which were strongly suggestive for sigmoid volvulus which aided in making a decision for explorative laparotomy. Additionally, barium enema in Case 2 aided in making the diagnosis of sigmoid volvulus in a patient with atypical clinical presentation. Apart from abdominal x-ray and barium enema, we also recommend if available, timely endoscopic evaluation of patients with equivocal symptoms and signs of intestinal obstruction.

The most unique intraoperative findings in our cases were the lack of bowel obstruction or vascular compromise of the twisted segment of colon. In our opinion, these two cases demonstrate a conceptually reasonable situation where in a greatly redundant colon can twist on its pedicle without causing either intestinal obstruction or vascular compromise. Difficult to say whether or not twisting occurrs suddenly or gradually. These two cases demonstrated that even in rare circumstances, a 360° volvulus can occur without vascular compromise or complete bowel obstruction.

Surgery is definitive treatment of sigmoid volvulus in which resection of the redundant sigmoid colon followed by primary anastomosis is recommended for viable sigmoid volvulus [8, 9]. We managed to resect and primarily anastomosed the

sigmoid colon in both cases and all patients recovered well within a short hospital stay.

CONCLUSION

The two cases presented emphasize the importance of considering sigmoid volvulus as a differential diagnosis when attending young patients with a long-standing history of abdominal distension and constipation.

Ethical Consideration

Written informed consent was obtained from all patients for publication of this case report and accompanying images. This case report was approved by Joint CUHAS/BMC Research, Ethics and Review Committee.

Availability of data and materials: Not applicable.

Competing interests: The authors declare they have no competing interest.

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Author's contribution

GG, AK, FM, RS and PN participated in management of patients and preparation of the manuscript, YM, PK, RF, NA, CR, SJ, GN, HT, AN and PC participated in manuscript revision. All authors read and approved final manuscript.

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