Sigmoid Volvulus Necessitating Total Colectomy

Asrar Ahmad, Irum saleem, Mahwish Mahboob Bhutta, Mashal Ahmed, Namra Sohail Raja, Rafia Durrani

ABSTRACT:

Sigmoid volvulus is a well-known cause of large bowel obstruction. Its management includes urgent endoscopic decompression or emergency laparotomy. The gangrenous sigmoid colon is resected with either end to end anastomosis or Hartmann's procedure. Here we present a rare presentation of sigmoid volvulus causing gangrene of the whole colon. It was probably due to double closed loop obstruction caused distally by the volvulus itself and proximally by the competent ileo-caecal valve. It was managed by total colectomy with terminal ileostomy and Hartmann's procedure. To our knowledge only one such case report has been published in the literature so for.

Keywords: gangrene, ileostomy, laparatomy, volvulus.

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INTRODUCTION:

A volvulus of colon is defined as twisting of a part of colon on its mesentery. The two most frequently encountered types are sigmoid and caecal volvulus.[1] The incidence of volvulus presenting as a cause of large bowel obstruction (LBO) is almost 15% in USA[2]. The patient presents with severe pain abdomen, abdominal distension and absolute constipation. Diagnosis can be made with X-Ray abdomen, contrast studies and CT scan abdomen. Prompt treatment is required in order to prevent ischaemic injury to the bowel wall that will lead to gangrene of the involved loop of sigmoid colon. Here we present a rare case report of sigmoid volvulus which caused gangrene not only of the sigmoid, but also involved the caecum and rest of colon up to the volvulus. To our knowledge this will be the second case report of a sigmoid volvulus causing double closed loop LBO leading to gangrene of whole colon.

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CASE:

A 32 year- old soldier was evacuated to a field hospital from a post near Afghanistan border with complaints of severe colicky pain abdomen for three days. The pain had gradually increased in intensity for one day and would not relieve with even intravenous nalbuphine or ketorolac. He also complained of absolute constipation and abdominal distension for two days. He had anorexia and nausea but denied any history of vomiting. On examination he had tachycardia and was dehydrated. His blood pressure was 100/70 mm of Hg. The abdomen was distended and tense. He had guarding and tenderness all over the abdomen but there was no rigidity. Bowel sounds were sluggish. X-Ray abdomen showed distended large gut loops with air fluid levels in both the limbs of volvulus as well as caecum (Figure. 1). The diameter of the caecum was more than 8 cms suggestive of an impending perforation. CT scan was not available. Complete blood counts showed haemglobin of 12 G/dl and neutrophilic leukocytosis. Serum electrolytes were normal. Nasogastric tube was passed, intravenous fluids and antibiotics strarted and he was prepared for emergency laparotomy. On exploration, there was gangrene of the sigmoid volvulus (Figure.2). But there was also distension and full thickness gangrenous patches on the large gut from caecum to descending colon. Detorsion of volvulus was done after decompression and the whole large bowel was packed in hot saline packs for 15 minutes. Patient was also administered 100% oxygen. The colour of gut from caecum to descending colon improved but the full thickness gangrenous patches remained the same (Figure.3). Total colectomy was carried out. End ileostomy was made in right lower quadrant and the distal end was closed as Hartmann's procedure. Patient

had uneventful recovery and was evacuated to tertiary care hospital on 1st post-operative day. He was discharged on the 10th post-operative day and followed up in OPD. He had reversal of ileostomy after three months at the same tertiary care centre and had an uneventful recovery.

DISCUSSION:

Sigmoid volvulus is the third most common cause of colonic obstruction.[3] The exact aetiology is still unknown. However, it occurs due to the redundant and elongated sigmoid based on a narrow mesentery[4]. Constipation and high fibre diet are also considered as important predisposing factors.[5] It is usually considered a disease of the elderly age but can occur in children even. Our patient was a young soldier. Constipation could have been a predisposing factor in our condition because soldiers are deployed at remote posts with poor access to safe and potable water and moreover, it was in the month of July, thus predisposing them to dehydration. Patients present with the classical signs of LBO with pain, distension and absolute constipation. Our patient had severe continuous pain probably due to delayed presentation and gangrene of the involved loop. The diagnosis can be made on plain X-Ray abdomen, CT scan abdomen or contrast studies. The diagnosis can be done X-Rays alone.[6] We had only this facility available at our set up. Different procedures like rectal tube deflation, sigmoidoscopic deflation, laparoscopic detorsion and sigmoidopexy are carried out in the management of sigmoid volvulus. The American Society of Colon and Rectal Surgeons guidelines suggest that endoscopy (rigid or flexible) should be carried out first in order to rule out gangrene of the gut as well as initial decompression of the colon.[7] Once there is gangrene or failure of the endoscopic detorsion then urgent resection is indicated. Sigmoid colectomy shall also be carried out later on in cases managed successfully with endoscopic decompression. When there are signs of gangrene of the bowel then emergency surgery is mandatory but it carries high morbidity and mortality.[8] Resection and anastomosis as well as Hartmann's operation can be done. Hartmann's procedure is to be preferred in complicated cases.[9]

Figure 1. X-Ray Plain abdomen in standing position showing air fluid levels in sigmoid loops as well as distended caecum and ascending colon

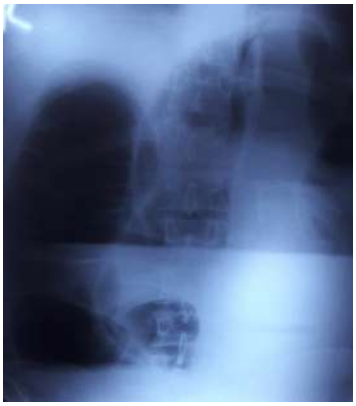


Figure 2. Distended and gangrenous loop of sigmoid Colon

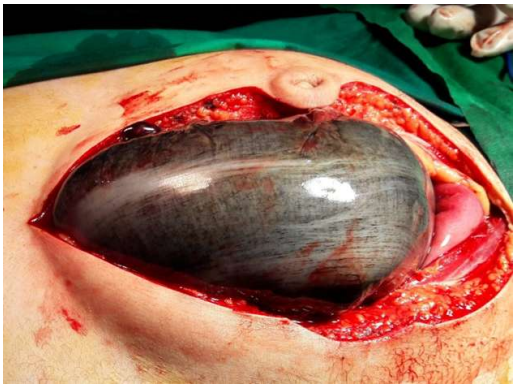
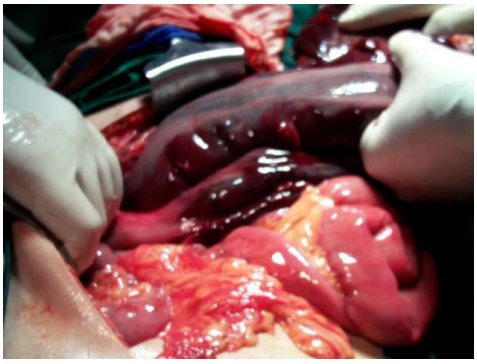


Figure 3. Gangenous sigmoid as well as transverse colon



In our case there was not only gangrene of the sigmoid loop but it involved the complete colon. We assume that there were simultaneously two closed loop obstructions. One was the volvulus and the other obstruction was due to the competent ileocaecal valve. A competent ileocaecal valve is found in about 75% of the population.[10] A literature search was carried out on from 1980 to 2017 on PubMed and pakmedinet using the terms "sigmoid Volvulus", "Colectomy" and "Hartmann's Operation". We could find only one similar case report published so for by Sali PA et al in the International Journal of Case Reports.[11] They also operated on a 27 year-old young male patient. It can be assumed that young patients presenting with sigmoid volvulus need prompt treatment to avoid such a catastrophe.

CONCLUSION:

Sigmoid volvulus is not an uncommon condition. Gangrene of the involved loop of sigmoid is also frequently associated; however, gangrene of the entire colon due to double closed loop obstruction is un-heard of. A high index of suspicion is needed to diagnose it especially in a young patient. An early diagnosis can avert the catastrophe of gut gangrene and septic shock.

Authors Contribution:
Asrar Ahmad: Design, writing the final draft, data collection and analysis
Irum Saleem: Research conception
Mahwish Mahboob Bhutta: Data collection and analysis
Mashal Ahmed: Data collection and analysis
Namra Sohail Raja: Research conception, design,
Rafia Durrani: Research conception, data collection and analysis

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