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SECONDARY ILEAL VOLVULUS: A CASE REPORT ON UNCOMMON CAUSE OF SMALL BOWEL OBSTRUCTION

General Surgery

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ABSTRACT

Small bowel volvulus is an uncommon presentation in the context of intestinal obstruction. It presents in acute condition with pain abdomen associated with distension of abdomen and vomiting. Its severity depends on the time of presentation of the patient, that may cause ischemia of the bowel followed by strangulation and gangrene. CECT Abdomen -Pelvis is the investigation of choice, but early clinical diagnosis is the need of an hour to prevent the complications of the obstruction and reduce the morbidity and mortality. Surgery is the mainstay of treatment, though the decision of approach is taken during the operation as experienced by the operating team. Volvulus can be Primary or Secondary; in primary there is no anatomical defect associated, while the secondary type is associated with an anatomical defect.This case reports a presentation of a patient with Secondary ileal volvulus with ileal stricture in our Emergency Department and the management of the same with brief review of the literature.

KEYWORDS

small bowel obstruction, ileum, volvulus, small intestine, stricture

INTRODUCTION

Small bowel volvulus is a rare entity in the differentials of acute intestinal obstruction. It presents with pain in central abdomen , distension of abdomen associated with vomiting and with no passage of stool and flatus. Prompt clinical diagnosis is necessary to combat the increased risk of morbidity and mortality. If time permits, post resuscitation, radiological investigations like X-ray Abdomen, CECT Abdomen can be utilized to confirm a diagnosis. Further it relies on the surgical team as to how to approach in the presented situation of the patient for the favorable prognosis of the condition.

CASE PRESENTATION

A 40 years old male patient, farmer by occupation, presented to Surgical emergency with a 3 day history of sudden onset of pain abdomen in the central compartment with distension of abdomen associated with multiple episodes of vomiting and non passage of flatus but stool. He gave a history of regular drinking of country made liquor. He had no previous history of altered bowel habit and abdominal surgery. He had no co morbidities like Hypertension or Diabetes Mellitus. The rest of the history was unremarkable. Physical examination revealed an average built man with ill looking face with tachycardia (118 bpm) and normotensive with rest of the vital parameters within normal limit. Clinical examination revealed distended abdomen with mild tenderness and absent bowel sounds. Rest of the systemic examination was within normal limits.

INVESTIGATIONS

Routine blood investigation revealed low hemoglobin count with leucocytosis, elevated liver enzymes and normal renal function test. ABG analysis revealed Metabolic acidosis. X-ray Abdomen Straight depicted Dilated bowel loop with multiple air-fluid levels in the central abdomen. Diagnosis was made after the series of investigations as Acute Intestinal Obstruction probably due to small gut involvement.

TREATMENT

After resuscitation, Exploratory Laparatomy was performed in Emergency Surgical OT. At laparatomy, it was seen that small bowel was distended with a ileal stricture (Figure 1) at around 8-10cm distal to IC junction and ileal segment was rotated (Figure 2) on its axis just proximal to the stricture. Bowel was healthy with no gangrenous changes. Derotation of the twisted segment was done and after resection of the stricture segment, End Ileostomy was made from the proximal segment of ileum in the Right side of abdomen, with the closure of the distal segment. Post-op was uneventful and discharged on 12th day post surgery and was in regular follow up. After 3 months, patient underwent a Re-exploratory Laparatomy for ileostomy closure, and End-to-Side Ileo-Transverse Anastomosis was done. Post-op was uneventful and patient was in regular follow up and has no abdominal complaints.

DISCUSSION

Volvulus is a kind of mechanical obstruction , with twisting or axial rotation of a portion of bowel around its mesentery. This rotation may lead to obstruction only or vascular occlusion as well resulting in the gangrene of the portion of the bowel. The most common site of volvulus is located at the sigmoid colon (75%) followed by caecum (22%)1. Small bowel volvulus is rare and only few cases have been reported worldwide. Volvulus of the small bowel accounts for <7% of all cases of small bowel obstruction1. Small Bowel Volvulus may be categorized into primary or secondary. In Primary, there is torsion of a segment of small bowel mesentery in the absence of congenital bands or postoperative adhesions 2. The theory behind primary small bowel volvulus occurring is based on strong abdominal muscles, high peristaltic tone as well as the presence of a bulky meal in the small bowel. The bulky bolus of food enters the proximal small bowel, causing the loop to descend inferiorly. This displaces empty small bowel loops upwards, initiating the rotation of the mesentery and causing volvulus. Another theory suggests that, a longer mesenteric length and shortness of the mesenteric root allows for abnormal mobility of a segment of small bowel predisposing to volvulus1. In Secondary, there is an underlying lesion upon which the mesentery can twist, including various causes like adhesive bands, mesenteric or omental defects, volvulus around the stoma2. It can occur at any age, but primary type mainly occurs in children and young population; whereas secondary type is seen in the older age group3. The clinical symptoms varies from sudden onset of pain abdomen with distension of abdomen followed by nausea and vomiting. The severity depends on the degree of vascular compromise following the obstruction. Following the Blood investigations, which reveals leucocytosis, that may or may not reflect the severity of the obstruction. In agreement with Bizer et al., Frazee et al., and Sarr et al., there was seen a positive association between a leukocytosis greater than 18,000/cm3 and gangrenous small bowel3.

The diagnosis can be initially made by Plain radiograph like X-ray abdomen that shows large dilatation of a small bowel loop signifying small bowel obstruction. Because the volvulus is around the superior mesenteric artery, we can also perform Color Doppler study which depicts The 'Whirlpool Sign'. This sign has the sensitivity of 92% and the specificity of 100%4. However, to confirm the diagnosis, Contrast Enhanced CT scan of Abdomen -Pelvis is the investigation of choice. The ' Whirl Sign' seen on CT scan has the sensitivity of 60% and the specificity of 94%5. Both the 'whirl sign' in CT and the 'whirlpool sign' in sonography indicate early surgical intervention. Buranasiri et al.'° have reported the characteristic angiographic appearance of small-bowel volvulus known as a "barber pole sign," which is caused by spiraling of the branches of the twisted superior mesenteric artery6. Cynn and Hodes" documented that gas in the mesenteric vein (without portal venous gas) is indicative of gangrene in the small intestine secondary to volvulus7. The mainstay of management is Exploratory Laparatomy at the earliest to prevent the strangulation of the bowel and hence the gangrene. The mortality associated with small bowel volvulus has been quoted as high as 42–67%. Mortality from this clinical entity is directly related to the time elapsed from symptom

onset to surgical intervention1. The appropriate surgical treatment depends on the intra-op findings on OT table. While many a times simple de-rotation of the volvulus is done, that will show the reversal of ischemic changes upon the release of the twisting. In primary volvulus, fixation is recommended if resection is not performed, with reports of recurrence as high as 30% of patients who underwent simple derotation only1. When the segment is gangrenous, resection s required. Depending on the site of the volvulus and the length of the gangrenous segment, either primary resection and anastomosis is done or ileostomy can be done. Duration of vascular compromise is a factor that leads to infarction of the bowel. So the final and appropriate decision is always made on OT table by the operating team. So the reporting of such uncommon cases with varied intra-op conditions makes the surgeon aware of the different possible options to combat and the outcomes associated with that.

Fig 2: Intraoperative photograph showing ileal volvulus, proximal to ileal stricture.

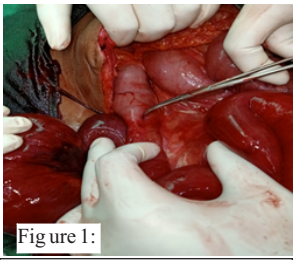

Fig 1: Intraoperative photograph showing ileal stricture.

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