

Case Report

Intestinal obstruction due to small bowel volvulus

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ABSTRACT

Primary small bowel volvulus is very rare and has feature of intestinal obstruction. Patient usually has unviable segment of bowel with need of resection intra-operatively. In our case report we present case of 88 years male presented in emergency department with features of bowel obstruction and pre-operative abdominal x-ray showed small bowel obstruction followed by CT scan which revealed small bowel volvulus at terminal ileum. Exploratory laparotomy was done and with untwisting of involved segment without need of resection and patient was discharged uneventfully with normal post-operative recovery and follows up also showed no any issue.

Keywords: Intestinal obstruction, Small bowel, Volvulus, Whirl sign

INTRODUCTION

Volvulus is form of mechanical intestinal obstruction which is caused by abnormal twisting of bowel around axis of its mesentery which may cause impairment of blood supply.^{1,2} In west, the annual incidence is 1.7-5.7 cases per 100 000, but rates of 24-60 per 100 000 have been observed in Africa, Asia, the Middle East and India; this higher rate may be due to high fiber uptake after prolonged fasting.³ Clinically patient present with features of obstruction like abdominal pain, abdominal distension, vomiting and absolute constipation or obstipation.^{1,4,5} Early diagnosis and treatment can prevent increased morbidity and mortality due resection of bowel. Small bowel volvulus is rare and are two types i) primary without any anatomical abnormalities and ii)secondary due to underlying abnormalities.⁵ 'Whirl sign' due to twisting of bowel, mesentery and its vessels in CT scan suggests volvulus.⁶⁻⁸ Small bowel volvulus is rare and creates dilemma in young clinician who have not seen these type of unusual cause of obstruction until CT scan is done. We present 88 years male who was diagnosed with volvulus at terminal ileum who was operated and

discharged with uneventful post-operative course. This case is reported because of its uncommon etiology in elderly age group for obstruction of bowel.

CASE REPORT

A 88 years male patient presented in emergency department with history of gradually increasing generalized pain abdomen for 7 days with not passage of stool and flatus for 5 days. This was associated with multiple episodes of bilious vomiting after few time of taking food. Patient had no history of previous surgery other comorbidities, passage of blood in stool or weight loss. On examination patient heart rate was 90-110 beats per minute with other status were stable. Gaseous abdominal distension without palpable lump with mild generalized tenderness without rigidity was present. Bowel sound was sluggish. Bilateral reducible direct inguinal hernia was also present. Digital rectal examination was normal. Expect decreased total blood count i. e., 2460/cumm other blood investigation was normal. X-ray abdomen in erect and supine view showed air fluid level and dilated central small bowel was seen

(Figure 1). CT scan of abdomen pelvis showed lead point at distal ileum with twisting of adjacent mesentery and swirling of vessel and dilated proximal bowel suggestive of volvulus (Figure 2 and 3). Patient underwent emergency midline exploratory laparotomy after resuscitation with provisional diagnosis of complete bowel obstruction secondary to volvulus was done. About 300 ml of serous fluid present in peritoneal cavity. Twisting of terminal ileum with adjacent mesentery about 270 degree in clock wise direction about 10 cm proximal to ileocaecal junction was found with surrounding bowel healthy was found (Figure 4). Mesentery of terminal ileum was long. De-rotation of twisted ileum was only done without need of resection and anastomosis. Patient had uneventful postoperative courses and discharged on 7th post-operative period. Patient was followed in OPD on 15th post-operative day patient was tolerating normal diet was doing his daily activity normally.

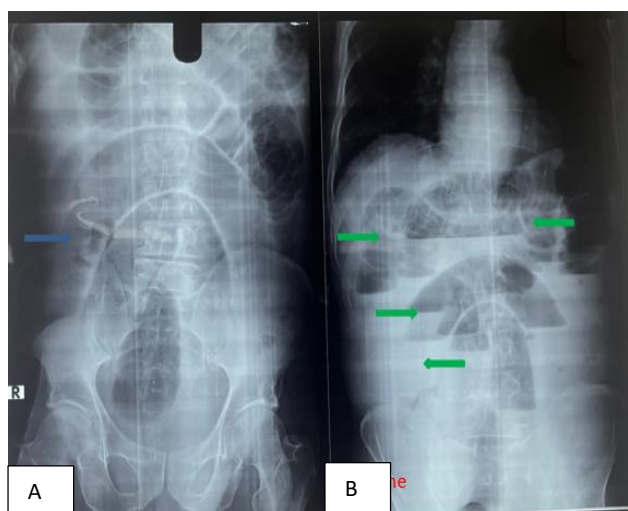


Figure 1 (A and B): Preop non contrast X-ray abdomen supine view of centrally located dilated small bowel (blue arrow) and erect view with multiple air fluid level (green arrow).

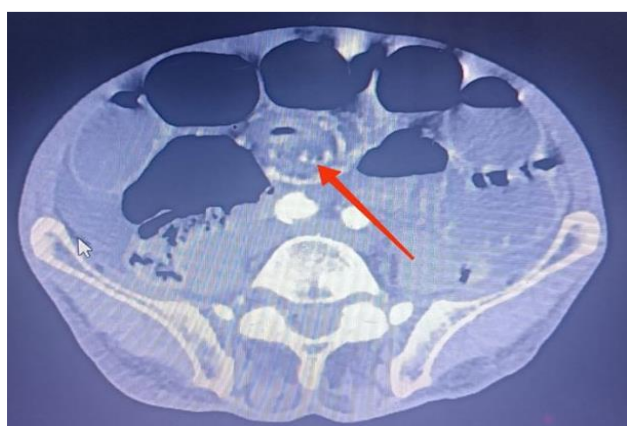


Figure 2: Axial section of contrast enhanced CT scan of abdomen of twisting of mesentery and its vessels around transition point at distal ileum at umbilical region giving whirlpool sign. (Red arrow).

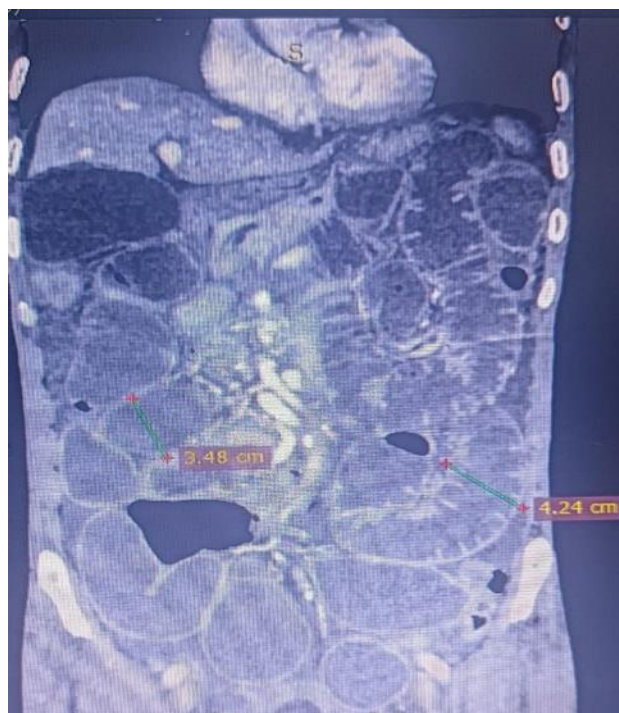


Figure 3: Coronal section of contrast enhanced CT scan of abdomen and pelvis showing multiple dilated small and large bowel loops.

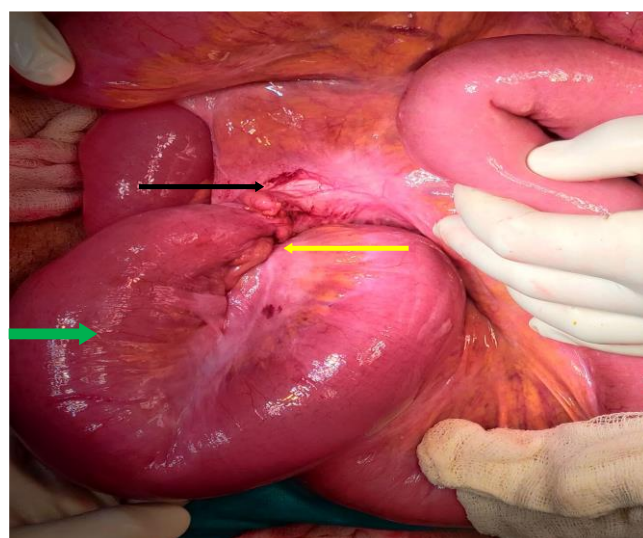


Figure 4: Intraoperative image showing rotated terminal ileum (green arrow), appendix with caecum (black arrow) and twisted mesentery (yellow arrow).

DISCUSSION

Among all patient visiting in emergency department with pain abdomen about 2% patient and 15% patients admitted in surgery department are diagnosed as small bowel obstruction.⁹ Most common cause of small bowel obstruction is adhesive bowel obstruction followed by neoplasm, herniation, inflammatory bowel disease and volvulus.¹⁰ Less than 5% small bowel obstruction is

caused by volvulus.¹⁰ Small bowel volvulus of adult is mostly caused by band or adhesion by previous surgery primary small bowel volvulus is very rare.^{4,9-11} In our case no obvious secondary cause of volvulus was identified though pre-operative reducible bilateral small direct inguinal hernia was present.

Volvulus present with features of complete bowel obstruction.^{11,12} Abdominal x-ray shows dilated bowel loops and air fluid level, typical sign like coffee bean sign may be seen in sigmoid volvulus.¹³ CT scan sensitivity and specificity is 93% and 96% respectively for diagnosis of volvulus but diagnostic rate of small bowel volvulus is about 45%.¹³⁻¹⁵ Findings of small bowel volvulus in CT scan of abdomen are i) Volvulus fulcrum centered on dorsal mesentery ii) Multiple transition points Transition points located ≤ 7 cm from the spine iii) Swirl extending $\geq 180^\circ$ including both bowel and vessels around a fixed obstruction point if any of these is present in CT then sensitivity is 94% and if all 3 are present then specificity is 100%.⁸ Patients with sigmoid volvulus and caecal can be managed non operatively with endoscopically if patient are hemodynamically stable but if there is feature of strangulation and peritonitis than treatment is surgery and mainstay in treatment for patient with small bowel volvulus is surgery.^{10,13,15} Surgical procedure depend upon viability of bowel and cause of volvulus.^{13,15} Main aim of surgery is untwisting of bowel and establishing blood flow and relief obstruction.¹⁶ About 50% may need relook surgery but only detorsion in primary small bowel volvulus may have 30% recurrence though fixing small bowel is technically challenging not well studied.¹⁶ In our case we simply untwisting of bowel was done without resection as bowel was healthy.

So, among many causes of small bowel obstruction primary small bowel volvulus is very uncommon cause of intestinal obstruction. Early diagnosis and prompt treatment is required for treatment in order to save bowel and prevent morbidity and mortality.

CONCLUSION

Primary small bowel volvulus is very rare cause of obstruction and difficult to diagnosis without radiological aid. Patient presented with history of about 1 week patient was stable without full blown peritonitis. We were helped by CT findings gave preoperative diagnosis of volvulus and early surgical management with uneventful recovery. This also highlights importance of pre-operative radiological tools for diagnosis in case of obstruction. Early diagnosis and early treatment saves bowel and patient from morbidity and mortality.

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Ethical approval: Not required

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