

Case Report

Complicated pseudodiverticulosis of small intestine: a rare case report

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Received: 08 July 2019

Revised: 16 August 2019

Accepted: 19 August 2019

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ABSTRACT

Diverticular disease though being a common entity in large bowel is recently noted to occur more proximally as well. In the jejunum, the mucosal outpouchings, called as pseudo-diverticulae, occurs with an incidence of 0.5-1.5%. Diagnosed incidentally as majority of them remain asymptomatic. When they are symptomatic, dyspepsia and bloating, recurrent abdominal cramping, malabsorption and megaloblastic anemia occurs. On occasions it is not uncommon for patients to present with hemorrhage, infections, obstruction or perforation. Perforation, being a rare presentation occurs in less than 6% of the cases. We present a case of a 70 year old male, who presented as acute abdomen, found to have isolated jejunal diverticular perforation intraoperatively.

Keywords: Jejunal diverticula, Perforation, Acute abdomen, Pseudo-diverticulae

INTRODUCTION

Jejunal diverticulae are a rare entity with an incidence of 0.5-1.5%.¹ They are pseudo diverticulae that develop due to interplay between smooth muscle and nerve plexus abnormality, in addition to high segmental intra-luminal pressure.² They are usually diagnosed incidentally. They may be associated with chronic symptoms like abdominal pain, nausea, flatulence, diarrhea and malabsorption.³ Jejunal diverticulosis may be associated with complications in 10-30% of the patients. Diverticulitis, abscess formation, hemorrhage, intestinal obstruction and perforation are most frequently encountered.⁴ Owing to the non-specificity of the symptoms, they remain a diagnostic and therapeutic challenge. Laparotomy remains the management of choice in all cases presenting as acute abdomen. We thus present a case of perforated jejunal diverticulum and discuss the presentation and management of such diverticula.

CASE REPORT

A 70 year old male came with complaints of abdominal pain and constipation for 5 days with undigested vomitus

for 2 days. He also gave history of dyspepsia and bloating following food consumption. Apart from history of tuberculosis, for which he completed ATT 35 years ago, his past and family history were insignificant.

Patient was dehydrated with ill Hippocratic facies. He was pale with a pulse rate of 108 bpm and BP of 130/80 mm hg. He had a distended abdomen with diffuse tenderness and guarding in upper abdomen. No mass palpable per abdomen. Bowel sounds were not heard. Digital rectal examination revealed an empty collapsed rectum with smooth mucosa and grade 2 prostatomegaly.

His blood investigations showed a picture of leukocytosis with a total count of 22,000 cells/mm³ with a shift to the left. His renal parameters were abnormal with urea and creatinine 67 mg/dl and 2.1 mg/dl respectively.

X-ray erect abdomen showed multiple dilated small bowel loops. CECT abdomen indicated few air pockets anterior to liver, prominent small bowel loops and evidence of minimal free fluid abdomen (Figures 1-5). With a diagnosis of perforation peritonitis, emergency Celiotomy was planned. Pre-operative fluid resuscitation

was done and antibiotic administered. With high risk for anesthesia and its possible complications, he underwent laparotomy with an upper vertical midline incision.

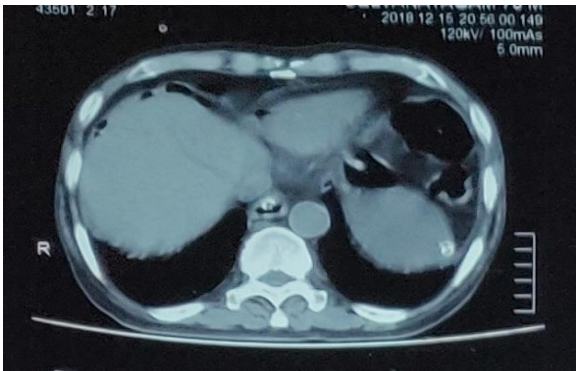


Figure 1: Cupola sign.

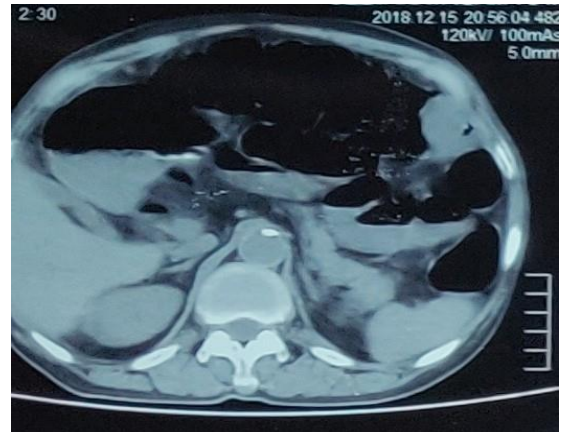


Figure 2: Falciform sign.

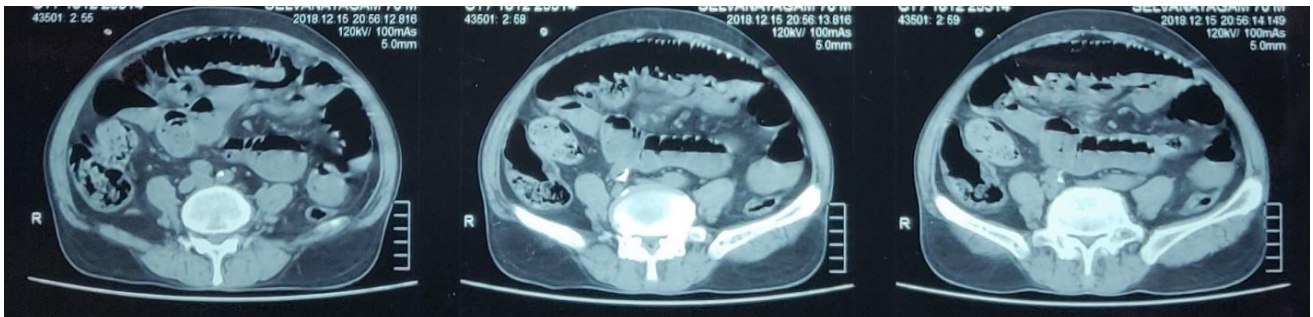


Figure 3: Diverticular air pockets.

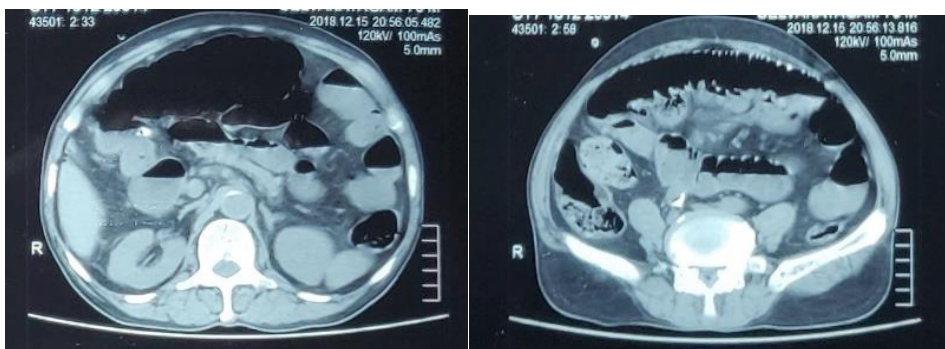


Figure 4: Air fluid levels.

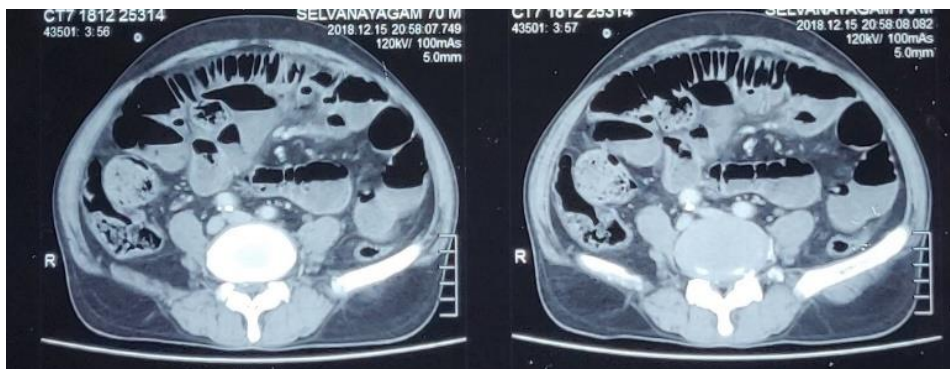


Figure 5: Pseudo-accordion sign.

Intraoperative findings included, multiple jejunal diverticulae, 100 ml of bilious fluid between the bowel loops with interloop adhesions, a 0.5×0.5 cms perforation along the mesenteric border of the jejunum, 45 cms from DJ flexure (Figures 6 and 7). After thorough laparotomy and lavage, it was noted that diverticulae were isolated to jejunum and primary closure of the perforation was done with FJ construction owing to the poor performance status and pre-op nutritional levels. Biopsy was taken from the edge of the perforation and sent for analysis. He was extubated on POD 2 and made an uncomplicated recovery. FJ feeds initiated in the immediate post op period. He was discharged on POD 11 after starting orals.



Figure 6: Intraoperative image showing multiple jejunal diverticulae.

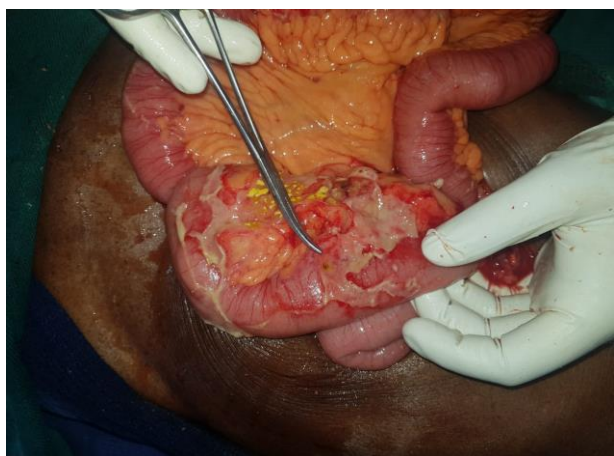


Figure 7: Site of perforation.

His histopathological report read the presence mucosa, submucosa only with absence of ganglion cells within the limits of the specimen. It also revealed acute inflammatory infiltrate with patches of necrosis.

DISCUSSION

Jejunal diverticulosis is a rare clinical entity noted in 0.5-1.5% of the population.¹ It was reported for the first time by Summering, as early as 1794 with little clinical

significance.³ Subsequently series of similar cases have been documented by numerous surgeons across the globe, through 1881 to 1906.⁴ Gordner and Sampson described the first case to undergo surgery for jejunal diverticulosis, diagnosed incidentally. Their patient presented with obstruction and was cured by resection of the involved segment⁵. Almost 20 years later, preoperatively diagnosed jejunal diverticulae was documented. Despite a nearly 200 year history of documentation, very little is known about the clinical significance and implications.

They are pseudo-diverticulae, that is the mucosa and submucosa herniates through the muscular layer along the points of weakness, which are places where the blood vessels enter the bowel. Jejunal diverticula may be associated with colonic (35%), duodenal (26%) and oesophageal (2%) diverticulae.⁶ The etiology of the condition continues to remain obscure with possible theories which suggest the interplay of abnormal peristalsis secondary to smooth muscle abnormality and intrinsic nerve plexus abnormality and high segmental intraluminal pressure, owing to unhealthy eating habits.² Thus formed diverticulae range from few millimeters to as large as 10 centimeters. Considering the liquid content of the jejunum, patients rarely become symptomatic. While those who are symptomatic present with a myriad of vague symptoms like dyspepsia and bloating, recurrent abdominal cramping notes especially following food intake, anemia of obscure origin (especially megaloblastic anemia), malnutrition.⁷ Diagnosing a case of jejunal diverticulosis is no less than a herculean effort. Conventional radiography may be useful only in the background of complications. Contrast enhanced CT also fails to pin point the pathology, revealing it to be small bowel thickening with fat stranding in majority of the cases. 10 Multislice CT has obviated the need for enteroclysis or contrast enhanced upper GI follow through studies. Being noninvasive and useful in the background of complications, it has stood the test of time.⁸ Newer methods like capsule endoscopy and balloon enteroscopy are making a mark but continue to remain expensive and contraindicated in cases with complications.⁹ Diagnostic laparoscopy may also be considered a fair option when patients present with complex symptomatology.

10-30% present with complications which include diverticulitis, obstruction, perforation, hemorrhage or abscess.¹⁰ Perforation is a rare complication occurring in less than 6% of the cases.¹¹ More than 80% of the cases diagnosed to have perforation are due to necrotizing inflammatory reaction, 12% due to blunt trauma and less than 6% due to foreign body impaction.¹² Diverticulitis with walled off perforation may lead to abscess formation.

Management of this condition should be tailor made to the patient. If they are diagnosed incidentally and the patient remains asymptomatic, masterly inactivity with

regular follow up should be advised. Symptomatic patients can be given a trial of conservative management with high protein, low residue diet supplemented with vitamins. Antispasmodics and antidiarrheals may be added. 46-75% of the patients are contended with this

line of management. However, in patients whose symptoms fail to subside or who come back with a recurrence, the definitive modality of management is resection of the affected segment followed by anastomosis (Figure 8).¹

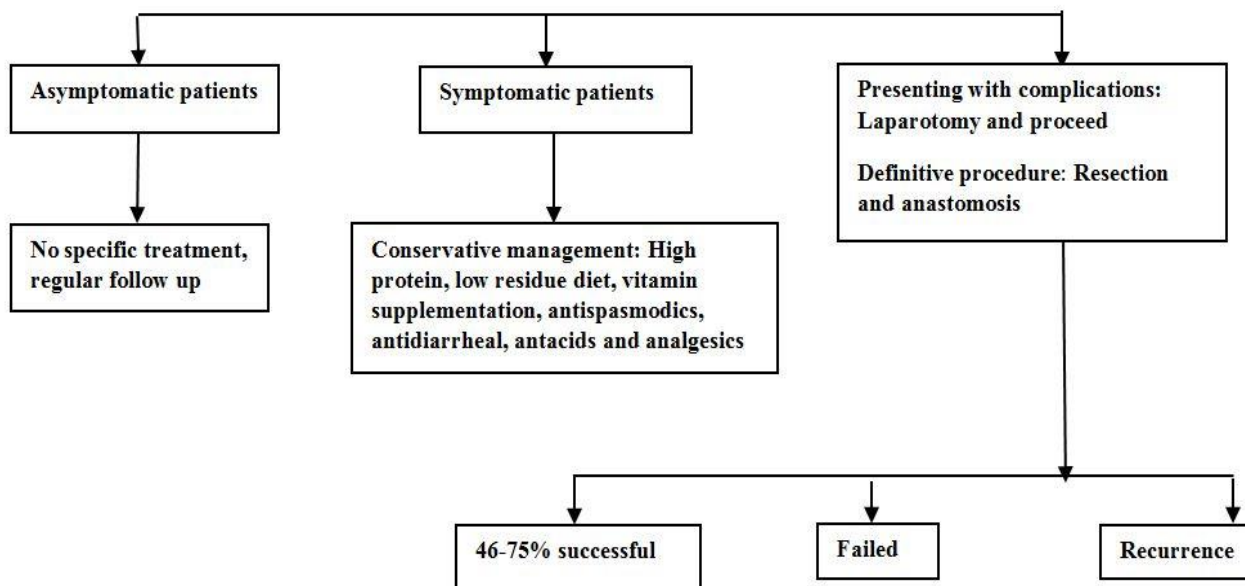


Figure 8: Algorithm of management of jejunal diverticulae.

Patients who present with complications, with signs of peritonitis, warrant an exploratory laparotomy with resection of the affected segment followed by anastomosis.

Diverticulectomy is generally not advised as it carried a high risk of devascularising the adjacent bowel.¹³

CONCLUSION

Jejunal diverticula are a rare entity with high morbidity and mortality. This case report highlights the rare presentation of jejunal diverticulae in isolated form with perforation as a complication. It is worthwhile if the treating surgeon is vigilant of such rare presentation and resort to early operative decision and thus, enhanced post-operative recovery of such patients.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Raj MK, Venkatachalam V, Manasa A. Complicated pseudodiverticulosis of small intestine: a rare case report. *Int Surg J* 2019;6:3433-7.