

Perforated Jejunal Diverticula-A Case Report with Literature ReviewBhupen Barman¹, Narendra Kishore Mandal², Tony Ete³**ABSTRACT**

Jejunal diverticula are rare and usually asymptomatic. Although, they are seen as incidental findings on CT images, enteroclysis, or during surgery, some patients with diverticula may present with acute abdomen that may require surgical intervention. We have reported a case of symptomatic proximal jejunal diverticulosis in a 66 year old patient who presented with diffuse abdominal pain. The clinical significance, diagnostic evaluation and treatment of jejunal diverticulosis have been reviewed.

Key Words: Acute abdomen, Diverticulosis, Jejunum, Perforation

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INTRODUCTION

Jejunal diverticula are rare with incidence varying from 0.2% to 1.3% in autopsy studies to 2.3% when assumed on enteroclysis. ¹ Pathologically they are pseudodiverticula of the pulsion type, resulting from increased intra-luminal pressure and weakening of the bowel wall. Although it is often asymptomatic, it can lead to severe complications including perforation, haemorrhage, enterolith formation, diverticulitis and intestinal obstruction occur in 10 to 30% of patients.

We have presented a rare case of proximal jejunal diverticulosis, who

presented with acute pain abdomen. Diagnosis of diverticulosis was made by X-Ray abdomen and confirmed by operation wherein the diverticulum was removed with recovery of the patient and relief of symptoms.

CASE REPORT

A 66 year old male, known case of Chronic Obstructive Airway Disease and Polyarthritis, admitted for respiratory distress and joint pain. During hospitalization, patient had developed pain abdomen with gradual distension of abdomen and constipation without history of fever and vomiting.

On examination patient was slightly dehydrated, afebrile, non-toxic. Abdominal examination revealed a generalized tenderness with decreased bowel sounds. Other systemic examinations were grossly within normal limit except mild COPD changes and polyarthritis.

Laboratory Investigations revealed Hb 11.6 gm%, Total count 15,300/cu mm with Neutrophil 89%, Lymphocytes 08%, Eosinophils 02%, Monocytes 01% and Basophils 00%, Blood Urea 38mg/dl, Serum Creatinine 1.1 mg/dl, Serum

Sodium 140 mmol/L, Serum Potassium 2.7 mmol/L. Abdominal X-Ray revealed free gas under diaphragm with dilated bowel loops. Sonography of abdomen was also suggestive of free gas under diaphragm. Description of operation: A right paramedian explorative laparotomy revealed several varied sized diverticula present in proximal jejunum at the mesenteric border. The entire segment of jejunum containing multiple diverticula was inflamed, edematous and adhered with each other. One of the diverticulum was perforated (Figure 1).



Figure 1: Segment of the jejunum having diverticulum with perforation

After mobilization the jejunal loop containing the diverticula was excised and end-to-end anastomosis was carried out in double layer using vicryl 2-0. Biopsy report revealed: 48 cm in length, part of jejunum containing multiple (8 in numbers) diverticula, largest measuring 7.5 X 7 cm and 1.5 cm away from the distal cut margin. Cut section showed hemorrhagic and ulcerated mucosa and contained brownish fluid with few solid particles. Microscopic examination showed features of acute necrotizing diverticulosis. There were multiple ulcerated areas on mucosa of terminal diverticulum near the distal cut section, plenty of acute inflammatory cells infiltrating deep into the muscle layer as well as serosa, forming microabscess at places. Mucosa and other layer of rest of the diverticula and jejunal lumen were apparently normal. No granuloma or malignancy seen. Post operatively patient was shifted to intensive care unit and was intubated and put on mechanical ventilation as he started having respiratory distress. Patient was managed conservatively, gradually weaned off from ventilation and was discharged after seven days. Patient returned to hospital ten days after discharge, with relief of symptoms.

DISCUSSION

Jejunal diverticula is a rare entity with an incidence rate ranging from 0.2% to 1.3% in autopsy series and 2.3% in radiographic findings. The diverticulosis of the small bowel was first reported by Sommering and Baillie in 1974. A. Cooper described the details of diverticulosis in a book in 1807 "The anatomy and surgical treatment of central and umbilical hernia". In 1881, W. Osler published the first clinical observation on this subject. J. T. Care in 1920 described the jejunal diverticulum in a radiological examination for the first time. ³

Diverticuli are usually multiple in contrast to the congenital Meckel's diverticulum and tends to be larger and higher in numbers in the proximal jejunum and smaller and fewer caudally. Etiology is unknown but believed to develop as a result of abnormality in peristalsis, intestinal dyskinesia and high segmental intraluminal pressure. The current hypothesis suggested abnormalities in smooth muscle on myenteric plexus. Careful microscopic examination of jejunal specimens with diverticula has shown that these abnormalities are of three types. ⁴

- Fibrosis and decreased numbers of normal muscle cells, consistent with progressive systemic sclerosis.
- Fibrosis and degenerated smooth muscle cells, suggestive of visceral myopathy.
- Neuronal and axonal degeneration indicative of visceral neuropathy.

Any of these abnormalities can lead to distorted smooth muscle contractions of the affected small bowel generating increased intraluminal pressure. Consequently, mucosa and submucosa would pass through the weakest mesenteric site in the bowel wall with penetration induced by paired blood vessels from the mesentery. Jejunal diverticuli are commonly observed in patients aged 60—70 years, with a slight male preponderance. About 80% of jejunal diverticula are asymptomatic. Most patients have chronic abdominal pain and a bloated sensation. Common acute complications include diverticulitis, hemorrhage, perforation and intestinal obstruction. Chronic complications include abdominal pain, dyskinesia, chronic hemorrhage and malabsorption. The diagnostic work up in symptomatic patients can start with plain

abdominal X-Ray film that could show evidence of perforation, such as free air under the diaphragm; evidence of ileus including multiple air-fluid levels and bowel dilatation and sometimes there might be a shadow about size and shape of the duodenal cap in the region of jejunum.⁵ Barium enema study probably reveals the diverticulum as a contrast-filled out pouching, 0.5 to 10 cm long, that is located on the mesenteric border of the jejunum and has a junction-fold pattern. Enteroclysis and enteroscopy are the best imaging procedure, however, their utility in emergency situations like in the presented case is limited. Computed tomography is helpful in complicated diverticula like thickening, inflammation or localized abscess formation. Diagnostic laparoscopy can be very useful in investigating patients with a complicated symptomatology avoiding the need for unnecessary laparotomy. Laboratory studies tend to be nonspecific, but an elevated WBC count with shift to left favours diverticulitis or perforation.

Treatment of jejunal diverticula mainly depends on presenting symptoms. If asymptomatic, it should be left alone.⁶ The current treatment of choice for perforated diverticula is prompt

laparotomy with segmental resection and end-to-end anastomosis. Extensive resection of the intestine is usually avoided to prevent short bowel syndrome. Conclusive diagnosis in our patient was made by diagnostic laparotomy, resulting in prompt and appropriate surgical treatment.

CONCLUSION

Jejunal diverticula are rare and usually asymptomatic. However, they may lead to chronic non-specific abdominal symptoms or rarely as an acute presentation. Jejunal diverticulosis in elderly can lead to significant mortality and so should be suspected in those presented with acute pain abdomen or chronic nonspecific symptoms like altered bowel habit or malabsorption. Once jejunal diverticulosis has been diagnosed, conservative medical management should be instituted to alleviate symptoms and reduce the risk of complications. If jejunal diverticular disease presents with acute abdomen due to perforation like in our case than surgical repair is the only treatment of choice.

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