A Rare Case of Large Jejunal Diverticulum Presenting as Intestinal Obstruction Due to Small Bowel Volvulus

Ashish Shrivastava · Yogeshwar Prasad Shukla ·
Achal Gupta · Jyoti Shrivastava

Received: 5 May 2014 / Accepted: 13 July 2014 / Published online: 20 July 2014
© Association of Surgeons of India 2014

Abstract Jejunal diverticula are quite rare. Furthermore, small bowel diverticular disease resulting in volvulus can lead to complications necessitating surgical intervention. In this manuscript, we report a case of large sacculated jejunal diverticulum causing small bowel volvulus in a 40-year male. The jejunal mesentery at the base of the diverticulum was adhered to the terminal ileal mesentery forming a narrow base and complete small bowel going into volvulus by rotating around the narrow base. This case highlights a large jejunal diverticulum causing small bowel volvulus as an uncommon mechanism of complete small bowel volvulus. Although a rare entity, familiarity with jejunal diverticular disease, its complications and its management should be part of every surgeon's base of knowledge when considering abdominal pathology.

Keywords Jejunum · Diverticulum · Volvulus · Intestinal obstruction

Introduction

Somerling described in 1794 and then SirAsley Cooper in 1807 that jejunal diverticulum is a rarely found pathology, with an incidence of 0.2 to 7 % in various radiologic and post-mortem studies [1]. While the diverticulum might be asymptomatic, patients with diverticulitis typically present with epigastric pain that radiates down the left side of the abdomen. However, the location of the pain is not consistent, and patients have been known to present with left lower quadrant pain similar to cases of sigmoid diverticulitis or with pain in

the right lower quadrant suspicious for appendicitis [2]. Other presentations can be due to complications like haemorrhage, perforation, intussusception, volvulus, malabsorption and small bowel obstruction [3]. Cases of jejunal diverticulosis complicated by obstruction are indeed rare, but worth mentioning as they can be encountered as an emergency. There being no standard guidelines for the management of the same, it becomes even more important to report such cases and review various similar reports from the past to build the understanding over the possible encounter of the condition and various ways in which it can be treated effectively.

Case

A 40-year male presented with pain in the abdomen for 5 days which started in right ileac fossa associated with progressive abdominal distension, vomiting and non-passage of flatus and motion for three days. On examination, patient's vitals were normal; abdomen was distended with mild tenderness, bowel loops were felt per abdomen, bowel sounds were increased in frequency and duration. Abdominal ultrasound reported distension of bowel loops. Standing X-ray abdomen showed multiple air fluid level with bowel loops. Over the next 2 days, the patient developed tachycardia, increase in bilious output in Ryle's tube, increase in abdominal distension and tinkling bowel sound. It was decided to take patient for exploratory laparotomy.

Intraoperative findings—Gut was grossly distended and jejunum was found to twist around the terminal ileum. The gut was derotated in anticlockwise direction and explored. Single large jejunal diverticulum was found about 2 ft from the ligament of Treitz arising from the mesenteric border. The jejunal mesentery at the base of the diverticulum was adhered to the mesentery of the terminal ileum with bowel wall edema. Diverticulum had a broad base admitting two fingers, 8 cm in length, empty, non-inflamed with its outer surface having a

A. Shrivastava · Y. P. Shukla (✉) · A. Gupta
Department of Surgery, GR Medical College, Gwalior, India
e-mail: dryogeshwar.s@gmail.com

J. Shrivastava
Department of Physiology, GR Medical College, Gwalior, India

Fig. 1 Showing large sacculated jejunal diverticulum (*arrow head*) at about 2 ft from duodenojejunal junction (*arrow*)

sacculated appearance (Fig. 1). A necrotic band about 5 mm over the ileum involving its two-third circumference noticed about 2 cm proximal to the ileocecal junction and the rest of the gut was normal (Fig. 2). Resection of the bowel was not done as the bowel was oedematous, the viability of the bowel wall was good.

Few interrupted seromuscular sutures were taken, and invagination of necrotic patch was done. The diverticulum and the mesentery were fixed with the peritoneum over the posterior abdominal wall with interrupted non-absorbable sutures. Patient had an uneventful post-operative period and had no complains on follow-up at 2 months.

Discussion

Jejunal diverticula are pulsion-type pseudodiverticula and lack a muscular wall. The majority of cases have been noted in patients in their sixth and seventh decades of life [1]. These rare diverticula commonly presents with non-specific problems as mild epigastric pain, flatulence and borborygmi and may produce malabsorption syndrome. But the diagnosis is commonly missed, and patient ends up with complications as perforation, haemorrhage, obstruction, enterolith formation

and inflammation. Diverticulitis is a most common complication which can progress further to perforation [3]. Another common presentation is gastrointestinal haemorrhage which presents more often as hematochezia rather than melaena. Obstruction is an uncommon complication with jejunal diverticulum as the contents are liquid in this part of the intestine. The causes of obstruction can be direct compression by large diverticulum, inflammatory mass, enterolith, adhesions, intussusception and rarely volvulus [4].

In the present case, there may have been previous diverticulitis leading to adhesive band formation between jejunal and distal ileal mesentery, thus forming a narrow root of mesentery-like situation subsequently leading to small bowel volvulus and causing intestinal obstruction.

The pathogenesis of small bowel diverticular disease is akin to that of its counterpart in the large bowel. It is believed that intraluminal pressure is increased in a particular segment of the bowel due to gut dysmotility, resulting in mucosal herniation along the mesenteric border of the bowel [1]. This makes the majority of jejunal diverticular disease a type of false diverticulosis, as there is no muscularis involved. With respect to the location of the diverticula, the mesenteric border of the bowel is more susceptible because there is an innate weakening of the wall due to the entry of mesenteric blood vessels on that side.

Ahmad et al. found eight out of ten patients presenting with perforation and one each with diverticulitis and obstruction due to adhesion. Another finding noted by them was multiple jejunal diverticula more often presented with perforation of bowel and was sometimes associated with colonic diverticulosis as well [3].

The incidence of mechanical intestinal obstruction in jejuno-ileal diverticulosis is 2.3–4.6 %, causes being inflammatory stenosis, intussusception, jejunal stone and volvulus of diverticula containing segment [2].

The treatment for diverticular disease of the jejunum is resection of the involved bowel segment. In a patient who is incidentally found to have diverticular disease of the small bowel on CT or intraoperatively, it is recommended that no action be taken.

Fig. 2 Showing adhered jejunal and terminal ileal mesentery (*arrow*) with necrotic band (*arrow head*) in the wall of the ileum

References

1. Yeo CJ (2013) Shackelford's surgery of alimentary tract. Elsevier, Philadelphia. 7:698–700
2. Butler JS, Collins CG, McEntee GP (2010) Perforated jejunal diverticula: a case report. *J Med Case Rep* 4:172
3. Ahmed I, Naeem M, Samad A et al (2010) Complicated jejunal diverticula as surgical emergency: experience at a tertiary care hospital in Peshawar, Pakistan. *J Ayub Med Coll Abbottabad* 22(1):147–149
4. Hu JL, Chen WZ (2012) Midgut volvulus due to jejunal diverticula: a case report. *World J Gastroenterol* 18(40):5826–5829