



Jejunal Diverticulum Presenting As a Midgut Volvulus

Authors

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Abstract

Jejunal diverticula are rare occurrences. Jejunal diverticulum presenting as a midgut of the volvulus is very rare and requires surgical intervention. Here, we report a 28yr old female who presented to the emergency with complaints of abdominal pain and symptoms of intestinal obstruction. CECT of the abdomen showed a midgut volvulus with no bowel ischemia or superior mesenteric vessel thrombosis. Patient was immediately taken up for laparotomy. The bowel loops were de-rotated and a diverticulum was identified 30cms distal to the duodeno-jejunal flexure. This formed the axis for the rotation of the bowel loops. A resection anastomosis of the segment was done including the diverticulum. Histology showed features suggestive of a false diverticulum. Although a rare entity, ability to diagnose and manage small bowel diverticula and diverticula related complications is a requirement when dealing with any case of intestinal obstruction.

Introduction

A diverticulum is defined as a herniation of the mucosa through the musculature of the viscera, or simply put is an out-pouching of any hollow viscera in continuity of the lumen. They can occur anywhere along the gastrointestinal tract, bladder and the urethra. The most common site is the colon followed by the duodenum and jejunum. Jejunal diverticula are very rare and usually asymptomatic. Volvulus is defined as rotation of any loop of bowel on its axis, either clockwise or anticlockwise. Here, we present a case of a jejunal diverticulum forming the axis of a mid-gut volvulus.

Case Report

A 28year old female presented to the Emergency room with complaints of abdominal pain for the past two days and abdominal distension for the

past one day. She had one episode of vomiting, with the vomitus being bile stained. Her vitals were stable. On examination her abdomen was distended with minimal generalized tenderness and no bowel sounds. Laboratory investigations done were within normal limits.

X ray abdomen erect showed dilated bowel loops with multiple air-fluid levels. USG done showed grossly distended bowel loops with no free fluid in the abdomen. Patient was then taken up for a CECT abdomen which showed a mid-gut volvulus (Fig.4) around the proximal branches of the superior mesenteric vessels, causing severe dilatation of the distal jejunum and proximal ileum (Fig.3). Distal ileum and proximal jejunum appeared collapsed. No evidence of mesenteric vessel thrombosis or bowel ischemia was seen. Patient was then taken up for laparotomy. Intra-operatively, mid-gut volvulus was seen with a

diverticular growth approximately 30cm distal to the DJ Flexure (Fig.2). The bowel loops were de-rotated and a resection anastomosis of the jejunum including the growth was done (Fig.1). Post operatively patient recovery was uneventful. Histo-pathologic examination showed features suggestive of a false diverticulum.



Fig.1. Diverticulum arising from the mesenteric border of the jejunum

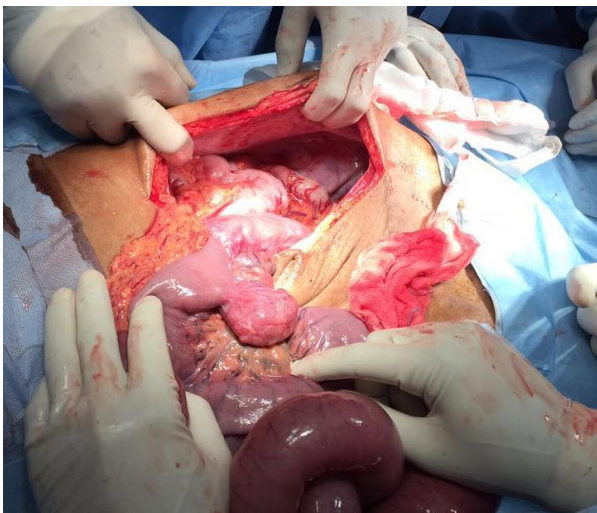


Fig.2. Dilated bowel loops being pushed away to locate the jejunal diverticulum



Fig.3. Caecum pulled up to the lumbar region due to midgut volvulus.

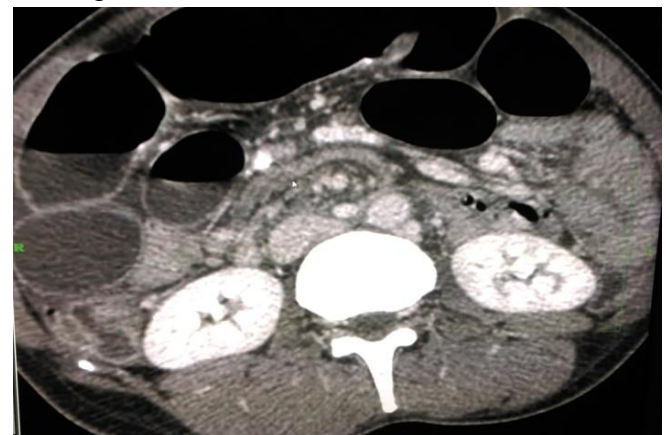


Fig.4. Whirl sign showing a swirling of mesenteric vessels.

Discussion

Jejunal diverticula are very rare occurrences. The incidence of jejunal diverticulum varies from 0.3 % to 1.3% in autopsy series to 2.3% in radiographic findings^[1]. Diagnosis is mostly aided by enteroclysis and Computed tomography studies, done by experienced radiologist with a high degree of suspicion of the possibility of any diverticula^[5].

The theories postulated for the occurrence of jejunal diverticula are many. They are rarely congenital. One of the causes postulated is the dysfunction of the myenteric plexus supplying the musculature of the small bowel. This causes irregular contraction of the musculature leading to alternating regions of high and low intraluminal pressure. In regions of high intraluminal pressure, the mucosa and sub-mucosa herniate through the musculature to form a diverticulum. This theory

also explains the occurrence of diverticula along the mesenteric border, as the entry of multiple blood vessels coursing through the mesentery causes the weakening of the musculature along the mesenteric border.

They may present to the OPD in cases of chronic diverticula with symptoms such as pain, which is usually vague and post prandial, nausea, vomiting, alternating diarrhea and constipation, weight loss and anemia. In cases of large diverticula, they may also develop blind loop syndrome and intestinal dyskinesia. Steatorrhea can also be a presenting symptom in small bowel diverticula. Symptoms reflective of inflammation, mal-absorption or mechanical obstruction should be viewed with a high index of suspicion to diagnose cases of diverticula. They can be commonly mistaken for irritable bowel syndrome or dyspepsia which may delay the treatment.

Acute presentations of jejunal diverticula are rare, but very severe. The most common acute presentations include diverticulitis, hemorrhage or intestinal obstruction secondary to intussusception or volvulus^[7]. Mechanical intestinal obstruction occurs in 2.3-4.6% of cases^[2]. The diverticula usually form the lead point of the intussusception. The occurrence of hemorrhage from diverticula can be difficult to diagnose but recent modalities of treatment include endoscopic therapy, with an initial hemostasis of 85.71% and a re-bleed rate of 20%^[6].

Here, in our case, the diagnosis of a volvulus was made radiologically. The presence of Whirl sign was indicative of the occurrence of mid-gut volvulus. This was first described by Fisher^[3]. This refers to the whirling or spiral shape of the mesenteric vessels, which may accompany the mesentery and intestinal loops. The sensitivity of this marker in predicting a mid-gut volvulus is 60%^[4]. The detection of whirl sign also requires high awareness on the part of the radiologist.

Management of jejunal diverticula is dependent on its presentation. In an acute presentation with perforation, hemorrhage or intestinal obstruction,

immediate surgical intervention is warranted. In cases of uncomplicated diverticulitis, they may be managed conservatively. Abscess formation is rarely seen in jejunal diverticula. In our case, patient presented with intestinal obstruction secondary to volvulus. Therefore, de-rotation of the volvulus was done with a resection anastomosis of the jejunal segment involving the diverticulum.

References

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