

CASE REPORT

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A rare complication of jejunal diverticulae resulting in a closed loop bowel obstruction

Zen Zuan Yong, Janaka Balasooriya

ABSTRACT

Jejunal diverticulosis (JD) is an uncommon and often underdiagnosed condition, usually discovered incidentally and rarely associated with acute complications such as diverticulitis, obstruction, abscess, perforation, or fistula formation. However, when complications do occur, they can be severe and diagnostically challenging. We present the case of a 75-year-old Female who arrived with an acute-onset abdominal pain with progressive distension and persistent vomiting. Computed tomography (CT) revealed a small bowel obstruction due to an enterolith. Emergency laparotomy revealed a small bowel obstruction at mid ileum due to an enterolith as well as an omental band adhered to the inflamed jejunal diverticulum proximally resulting in a closed loop in the affected segment of small bowel. The omental band was divided and the enterolith was removed via an enterotomy without requiring a small bowel resection. The patient was managed with antibiotics postoperatively and she made an unremarkable recovery. Closed loop small bowel obstruction as a result of complicated jejunal diverticular disease is rare in the literature and it highlights the critical importance of maintaining a high index of suspicion, particularly in older patients presenting with acute abdomen.

Keywords: Closed loop bowel obstruction, Jejunal diverticulae, Jejunal diverticulitis

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INTRODUCTION

Small bowel diverticulosis was first described in 1794 by Sommering and further explored in 1807 by Sir Astley Cooper, with a reported incidence of up to 2.3% in autopsy and radiological studies. The condition is typically asymptomatic and most often identified incidentally on imaging [1]. Approximately 18% of cases develop acute complications, with around half of these requiring surgical intervention. Reported complications include diverticulitis, abscess formation, malabsorption, obstruction, perforation, and hemorrhage, occurring in up to 30% of patients, with mortality rates reaching 50% in severe cases [2]. There has been several case reports in which jejunal diverticulosis can cause a small bowel obstruction due to isolated enterolith or adhesion bands; however, this case report would be the first unique case of a closed loop small bowel obstruction from simultaneous omental band from an inflamed diverticulum as well as an enterolith intraluminally. Informed consent was obtained from the patient for publication.

CASE REPORT

This 75-year-old female presented to a regional hospital and was subsequently transferred to our institution for assessment by the general surgical team. She was complaining of severe sudden onset abdominal pain for one day associated with multiple episodes of vomiting and had been getting worse. On examination she was hemodynamically stable and the abdomen was distended and diffusely tender. Biochemical markers were unremarkable. Subsequent CT scan revealed a jejunal diverticulitis with largest diverticulum containing a large mixed density structure, in keeping with an enterolith. The adjacent diverticulum no longer contained an enterolith which was seen on a previous CT (Figure 1). Evidence of small bowel obstruction noted with abrupt transition at the level of the left pelvic brim secondary to

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the migrated enterolith. Pelvic and interloop free fluid was also noted. She was managed with a nasogastric tube and fluid resuscitation and proceeded for an emergency laparotomy.

During the laparotomy, it was discovered that there was a distal small bowel obstruction from the enterolith at mid-ileal level and an omental band adhered to inflamed jejunal diverticulum proximally resulted in a closed loop bowel obstruction. This explained the rapid progression of symptoms. Obstructed segment of small bowel was viable and there were multiple other jejunal diverticulae noted. Dilation of jejunum proximal to the omental band also noted (Figure 2).

The band was divided and an enterotomy was performed proximal to obstruction site to remove the enterolith. The remaining enteroliths in the inflamed jejunal diverticulum as well as in the adjacent diverticulum was retrieved from the same enterotomy after fragmentation (Figure 3). The diverticulae were left intact and treated with intravenous antibiotics. The patient recovered well postoperatively without any significant complications.



Figure 3: Multiple enteroliths retrieved from the jejunal diverticulae.

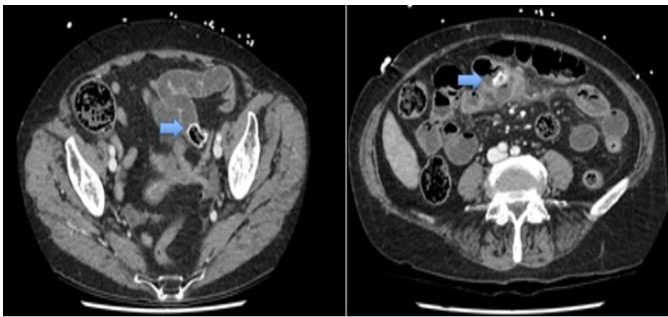


Figure 1: Coronal views of CT demonstrating an enterolith causing small bowel obstruction and another enterolith within the diverticulum.

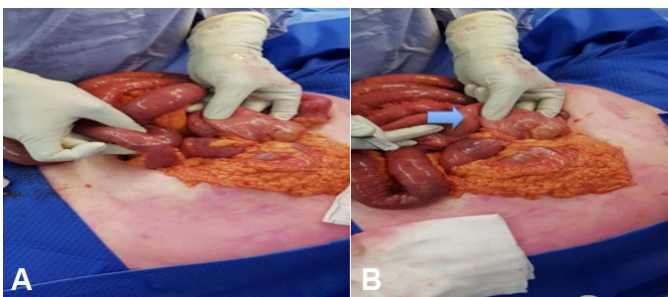


Figure 2: (A) Palpable enterolith at the distal obstruction site and (B) omental band and adjacent large diverticulae at the proximal obstruction site.

DISCUSSION

The clinical presentation for JD is rare, with reports of 0.3–2.3% in autopsy as well as radiologic series. The exact pathogenesis of this condition remains vague. However, it is thought to be the result from dysfunction of the smooth muscle layers or the myenteric plexus.

This dysfunction leads to abnormal peristalsis leading to increased intraluminal pressure and hence the formation of diverticulum [3].

Obstruction secondary to jejunal diverticula is rare and most commonly occurs through mechanisms such as volvulus, entrapment of small bowel loops within a mesenteric diverticular sac, adhesions from chronic inflammation, or impaction of enteroliths formed within the diverticulum with very few isolated cases in the literature [4]. In such cases, delayed diagnosis may occur because clinical and radiologic findings are often nonspecific, and jejunal diverticula are frequently incidental or overlooked on imaging.

Management of complicated JD depends on clinical, biochemical, and radiological findings, ranging from conservative measures to small bowel resection. The enteroliths are thought to be formed within the diverticula of small bowel when contents become stagnant and stasis, leading to bacterial overgrowth and aggregation of cholerac acids [5]. The management involving enterolith-related small bowel obstruction would be breaking down the enterolith and milking it into the colon. Conservative treatment is usually effective with enterotomies reserved for failed cases from conservative management [6]. The final decision to resect jejunal diverticulae would depend on the overall situation with resection more favored toward complicated diverticulosis whereas a simple enterolith removal is adequate for an initial obstruction from it [7].

When a small bowel resection and primary anastomosis is considered, only removal of the diverticulum bearing segment responsible for the obstruction while avoiding unnecessarily extensive resections is favored, given the

potential for multifocal diverticulosis [8]. There has also been suggestion in the literature that all small bowel diverticula should be checked and all potential enteroliths removed to prevent any subsequent complications which we have done in our case.

CONCLUSION

The case presented highlights the importance of maintaining a high index of suspicion for complications of jejunal diverticulosis. Although rare and often clinically silent, JD can present with serious and potentially life-threatening complications. This case illustrates an exceptionally uncommon manifestation: a closed-loop small bowel obstruction caused by an enterolith intraluminally distally and a proximal omental band extraluminally. Early recognition, identification, and operative management is of utmost importance to reduce the risk of progression to perforation, ischemia, and sepsis. With this increase in awareness of the complications of JD, especially in patients' with vague symptoms can help with improved patient outcomes.

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Author Contributions

Zen Zuan Yong – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Janaka Balasooriya – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

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Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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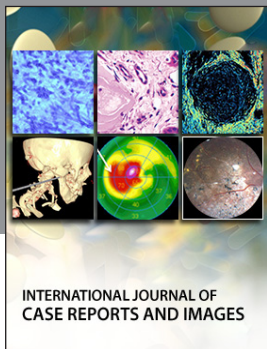
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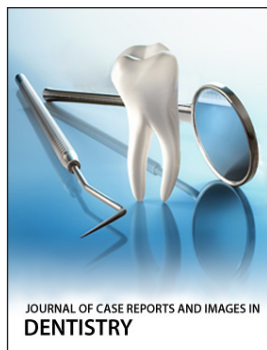
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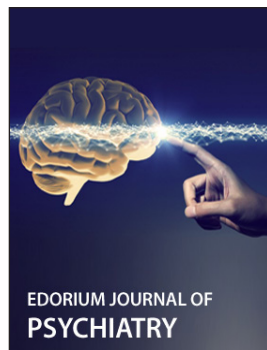
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