Intussusception Caused by an Enterolith from a Jejunal Diverticulum

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Abstract We are reporting a case of intestinal obstruction in a lady patient and peroperatively, it turned out to be a case of intestinal obstruction due to intussusception caused by an enterolith originating from one of multiple jejunal diverticula. It was a rare cause of intestinal obstruction, and the presentation was very rare in the literature. The diagnosis and management are thus delayed.

Keywords Intestinal obstruction · Intussusception · Enterolith · Jejunal diverticula

Introduction

Small bowel obstruction is mostly due to adhesions after surgery. The obstruction due to stone impaction is very rare, with most cases being caused by gall stones [1]. An enterolith originating from one of jejunal diverticula is even rarer. Here, we present a case of intestinal obstruction due to intussusception due to enterolith originating from one of multiple jejunal diverticula.

Case Report

A 52-years-old female was presented in the emergency department with complaints of abdominal pain, nausea, recurrent

vomiting since 2 days and sudden-onset distension of the abdomen for 1 day. On examination, her abdomen was distended, and there was generalized tenderness. The abdomen was tympanic on percussion, and her bowel sounds were sluggish. The patient was admitted and investigated. There was polymorphonuclear leucocytosis of $16-0 \times 10^9/L$. The X-ray film of the abdomen in the standing position was suggestive of intestinal obstruction of the dynamic variant as multiple air-fluid levels were present in the central abdomen. There was no gas in the biliary tree. The USG of the abdomen and pelvis was suggestive of distended bowel loops with air and fluids with diminished bowel sounds.

The patient was resuscitated and was initially treated conservatively. Her condition did not improve and the CT scan of the abdomen and pelvis with IV and oral contrast was done. It was suggestive of ilio-ilial intussusception for which she underwent an emergency exploratory laparotomy.

Intra operatively, it was a hard intra luminal calculus in the distal ileum about 30 cm proximal to the IC junction with proximal jejunal multiple wide mouth diverticula (three to four). One of the diverticula was oedematous and congested, and it appeared reasonable to presume that the obstructing enterolith had recently been discharged from these diverticula (Fig. 1). This confirmed the diagnosis of jejunal diverticular enterolith ileus. The palpation of other diverticula did not reveal any stone. The gall bladder was normal, and there was no evidence of a cholecystoduodenal fistula. The small bowel was distended proximally and was collapsed distally.

The intussusception was carefully reduced. Enterotomy was done, calculus was removed (Fig. 2) and the ileum was repaired in two layers with mersilk. Grossly, the calculus was greenish in colour and about 4.2×3.5 cm in dimension. Abdominal incision was sutured in layers. Postoperative course was uneventful, and the patient was discharged on day 11 with a healthy incisional wound. The enterolith weight was 24 g.

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Fig. 1 A jejunal diverticulum

Discussion

Jejunal diverticulum was first described by Astley Cooper in 1807; the reported prevalence varies from 1.25 to 4.6 % [2]. The jejunal diverticula are uncommon, acquired and usually occur in the elderly. They are false diverticula in that they lack a muscle coat. It has been postulated that stasis, due to small bowel dyskinesia, results in bacterial overgrowth causing deconjugation of bile salts which precipitate to form a nucleus for enterolith formation. Enteroliths are uncommon and are divided into two groups: the false ones, formed by the accretion of alimentation (fecaliths, bezoars, foreign bodies), and the true ones resulting from the precipitation and deposition of substances from the alimentary chyme.

Stones formed in the diverticula are sometimes dislodged and, if small enough, pass down to the colon without symptoms. Large ones might cause obstruction of the distal intestine, called “enterolith ileus,” similar to gallstone ileus [3].

The clinical presentation of this complication is similar to that of any acute intestinal obstruction. X-rays might show air-fluid interfaces related to obstruction and hyper dense calcium-containing stones. Contrast examination of the gas-

trointestinal tract could be useful to view jejunal diverticula and moreover a stop in gastrograffin progression [3]. Computed tomography confirms small bowel obstruction and reveals single intra luminal opacity in the small bowel; it also evaluates the aspect of the gallbladder and biliary tract, searching arguments in favour of gallstone ileus [4, 5].

Conservative medical treatment is unsuccessful in most cases, leading to surgical intervention. Exploration primarily reveals jejunal diverticulosis; it is necessary to check the gallbladder to systematically exclude irregular communication with the gastrointestinal tract and to look for stone-like, palpable masses in the intestinal tract, including all diverticula [4]. Since jejunal diverticula usually occur in the elderly, it has been suggested that in order to minimize postoperative complications, the obstructing enterolith should be broken up manually and milked into the caecum [6], thereby obviating the need for enterotomy. If not possible, an enterotomy must be performed in a less edematous area to remove all stones [7]. Enterotomy allows emptying all digestive chyme upstream using a suction tube. Intestinal or diverticular resection should be considered only in case of complications (perforation, necrosis and stricture) [4].

In conclusion, although intestinal obstruction due to enterolith with multiple jejunal diverticula is very rare, it should be considered in the differential diagnosis when there is no evidence of stricture, malignancy or gall stone ileus.

Conflict of Interest Gurudutt B. Basrur, Shiv Kumar Utture and Sarang Agnihotri declare that they have no conflict of interest.

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Fig. 2 Enterotomy and extraction of enterolith