JEJUNAL DIVERTICULOSIS : CASE REPORT OF A RARE CAUSE OF MECHANICAL INTESTINAL OBSTRUCTION

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ABSTRACT

Jejunal diverticulosis is a rare condition and usually discovered incidentally at laparotomy for an unrelated pathology. When inflammed or perforated, jejunal diverticulosis may present with paralytic ileus. In contrast, mechanical bowel obstruction is an unusual presentation. This paper reports the first local case of jejunal diverticulosis presenting with mechanical bowel obstruction due to impaction at the terminal ileum by an enterolith originating from a diverticulum, and reviews the recent literature on the subject.

Keywords : Enterolith, intestinal obstruction, jejunal diverticulosis.

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CASE REPORT

NL was a 72-year-old Indian female. She was admitted on 22.1.90 with constipation for 1 week, abdominal distension for 4 days and vomiting for 3 days.

Her normal bowel habit was once daily. There was no change in stool calibre or colour prior to the constipation. The constipation had been absolute for the week prior to admission. The abdominal distension was gradual and progressive over the 4 days. Vomiting started about 3 days prior to admission. Apart from saying that the vomitus consisted of food, she was unable to elaborate further on the nature of vomiting.

She had a lower midline scar from a previous Caesarean section. Two years earlier she also had a hospital admission for colicky abdominal pain which was associated with constipation, distension and vomiting of 3-day duration. Her medical records of that admission showed that her abdomen was distended and tympanitic. Bowel sounds were hyperactive. Supine and erect abdominal X-rays showed multiple levels in the small intestines. Her symptoms resolved with conservative treatment for intestinal obstruction and she was discharged from hospital 2 days after admission. Test for occult blood in the stools was negative. An ultrasound examination of the liver, gallbladder and pancreas was also normal. She had been well until this second hospital admission.

On physical examination, her abdomen was distended with visible peristalsis. It was tympanitic. The bowel sounds were tinkling. Mild ascites was also present. No tenderness or hernia was noted. Digital rectal examination found only small pellets of stools. She was dehydrated. The rest of the physical examination was unremarkable.

Plain abdominal X-rays (erect and supine) showed a short segment of dilated small bowels (Fig 1). Haemoglobin was 13.9 g/dl. The red blood cells were normochromic and normocytic. Conservative treatment for intestinal obstruction was instituted. As there was no clinical response after 15 hours, a laparotomy was done.

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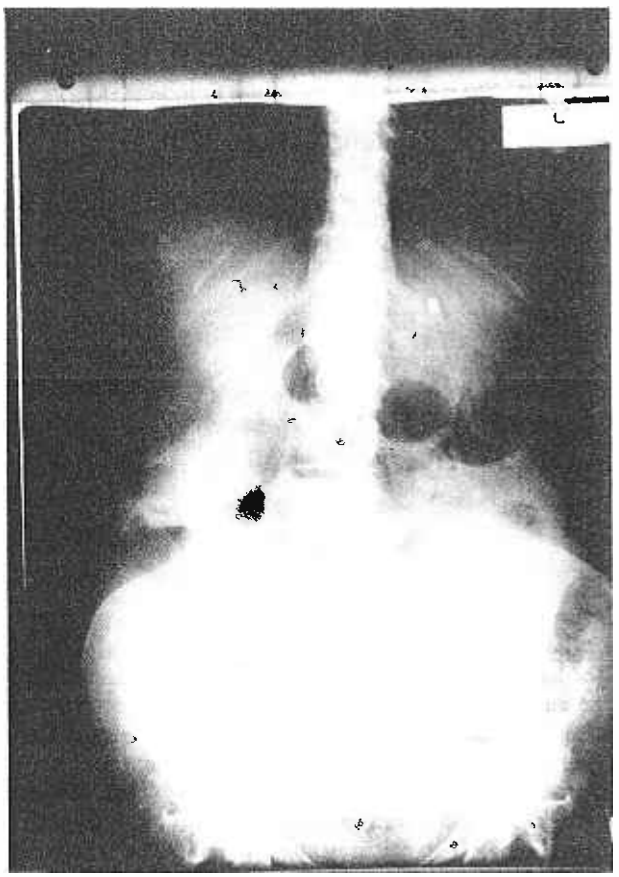
Fig 1 - Plain X-ray showing a short segment of dilated small bowel in the lower abdomen.



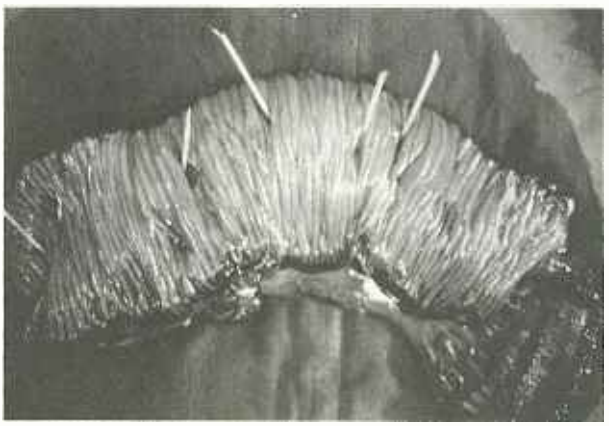
At laparotomy, mechanical small bowel obstruction was found. This was due to a 3-cm enterolith obstructing the terminal ileum. The colon, caecum and terminal ileum distal to the obstruction were normal. There was no adhesion between the bowels. The gallbladder was normal. The jejunum had 15-20 large diverticula along its mesenteric border (Fig 2). The most proximal diverticulum which was sited 1 cm from the duodenojejunal junction also contained an enterolith. Since both enteroliths were of similar size and shape, it was assumed that the enterolith that obstructed the terminal ileum originated in one of the diverticula.

The obstructing enterolith was milked into the caecum and left to be passed out naturally per rectum. The most proximal diverticulum (which contained the other enterolith) was excised (diverticulectomy). A nearby diverticulum was

Fig 2 - Multiple large diverticula along the mesenteric border of a loop of jejunum delivered through the midline incision.

invaginated and closed with a purse-string. Two feet of jejunum bearing the larger diverticula was resected (Fig 3) and alimentary continuity restored by primary end-to-end anastomosis. Scattered small diverticula along the remaining jejunum were left alone.

Fig 3 - The resected jejunum opened by incising along its antimensenteric border. The mouths of the diverticula are identified by the orange sticks.



Post-operatively, the patient made an uneventful recovery. She has remained well and asymptomatic. A barium study of the small bowel 6 months after operation showed debris in one of the remaining diverticula (Fig 4). The pathologist found that the diverticula, situated along the mesenteric border, ranged from 1 cm to 3 cm in size, were lined by small intestinal muscosa and had a wall composed of muscularis mucosa and fibrous tissue but not muscularis propria. The serosa was oedematous, congested and infiltrated lightly with polymorphs. Several enlarged lymph nodes in the peri-jejunal fat showed reactive hyperplasia.

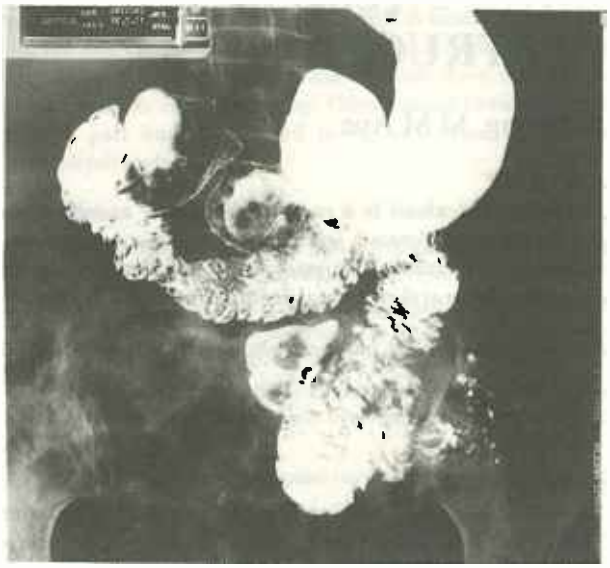
DISCUSSION

There are two varieties of alimentary diverticulum. The congenital type has all three coats of the bowel in its wall, whereas the acquired type lacks a muscularis propria. Most alimentary diverticula are thought to be acquired[1].

Jejunal diverticulosis is a rare condition. Mickley found a prevalence of 4% among patients over the age of 70 years[2]. Maglinte reported a prevalence of 2.3% in 519 consecutive patients examined by enteroclysis [3].

In Maglinte's series, the male:female ratio was 7:5 whereas in Mickley's series, all were female. In both series the patients

Fig 4 - A diverticulum containing debris which showed up as filling defects.



were elderly with a mean age of 60 years. This advanced age is in keeping with the "acquired" nature of the disease.

Enteroclysis is perhaps the most reliable method to diagnose jejunal diverticulosis. Eleven out of 12 cases would have multiple diverticula[3].

Eleven of 12 cases can be expected to be asymptomatic[3] and be discovered at laparotomy for unrelated diseases[4-6]. Jejunal diverticulosis may present with acute or chronic symptoms. Acute symptoms are due to perforation, diverticulitis and haemorrhage. Chronic symptoms include recurrent abdominal pain, flatulence and borborygmi, and malabsorption leading to anaemia, steatorrhoea and dermatoses[7].

There are two varieties of intestinal obstruction: mechanical and paralytic. It is the paralytic variety that is more usually associated with jejunal diverticulosis, and is a result of peritonitis following diverticulitis, perforation, strangulation or incarceration of the enterolith within the diverticulum[7]. Mechanical intestinal obstruction due to jejunal diverticulosis is very rare. Only a few cases have been reported in the world literature in which the enterolith escaped from its diverticulum and became impacted in the terminal ileum, or was compressing against the bowel lumen from within the diverticulum[8]. Jejunal diverticulosis presenting with mechanical obstruction has not been reported in Singapore before.

The surgical options for jejunal diverticulosis are as follows:

1. Leave alone. This is recommended for single, small and asymptomatic diverticulum.
2. Invaginate and close the mouth with a purse-string suture.
3. Diverticulectomy.
4. Resection of involved jejunum and primary end-to-end anastomosis.

Interestingly, all the options mentioned were employed in this particular patient.

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BOOK REVIEW

MANAGEMENT OF COMMON GASTROENTEROLOGICAL PROBLEMS-A SINGAPORE PERSPECTIVE-BOOK 1&2

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Adis International 1991

These are 2 small books produced and written by local practising clinicians. It is easy to read through each book to understand the Singapore perspective of gastroenterological and hepatic problems. Being multiauthored has its advantages and disadvantages. The chapters consider symptomatology as well as disease states. Whereas one gastroenterologist could sit down and compose the books, the editors have tried their best to prevent overlap of topics between authors. Where overlap was inevitable, it was thought necessary.

Should all dyspeptic patients have a barium meal or endoscopy? One author wrote, "every patient with dyspepsia persisting more than a few days and severe enough to warrant medical attention should be investigated by barium meal or endoscopy during the period of exacerbation"(pg 6). What about patients with dyspepsia but no ulcer – the non ulcer dyspepsia cases? The author is against empirically prescribing a course of H_2 receptor antagonist before investigation (pg 34), and he emphasizes that all non ulcer dyspeptic patients should not be treated as if they have peptic ulcers.

Did you know that the average Singaporean consumes about 13 grams of fibre which is far less than the recommended 30 grams? It is enlightening to read facts about the Singaporean in the gastro world, namely 100% of all Singaporean adults are hypolactasic. Therefore some chapters are more Singaporean when the author relates such facts. And this is what the books are supposed to be all about- a Singaporean perspective. How about Gilbert's disease affecting 3-6% of the population; or the carrier rate of hepatitis B is 6%? Further, up to 20% of patients with chronic hepatitis B undergo conversion reactions annually while another 8% have reactivation hepatitis. 10% of those with acute hepatitis B infection will become carriers. For hepatitis C, 50% will develop chronic hepatitis of which 20% will go on to cirrhosis and a smaller number to hepatoma. In hepatitis D, immunization against hepatitis B will protect against it. And once a person is hepatitis B virus infected, selected groups may respond to antivirals. You have to read page 95 for selection criteria and page 104 for interferon use.

It does not take long to read the books – probably 4 hours for each is sufficient. The language, approach, layout are all simple. So are the diagrams and algorithms. I do not hesitate recommending it to medical students. It would be helpful to general practitioners who want a quick refresher course.

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