Unusual presentation of more common disease/injury

A swallowed foreign body that uncovered an undiagnosed bowel pathology

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Summary

This report details a unique presentation of Crohn's disease in a patient who inadvertently swallowed the cap of a USB mass storage device and subsequently developed intestinal obstruction and underwent a limited right hemicolectomy. Imaging, photographs and histology are described with discussion of surgical outcomes.

BACKGROUND

This rare presentation of Crohn's disease re-emphasizes the necessity of ruling out underlying gastrointestinal pathology in patients who present with a deteriorating clinical condition in the presence of an incidental foreign body. If there was greater awareness among clinicians of the possible consequences following ingestion of foreign bodies, this case would have been viewed with greater suspicion and treated more promptly.

We present a unique case of a patient with previously unknown Crohn's disease presenting for the first time with intestinal obstruction. We discuss the subsequent diagnostic pitfalls leading to delayed diagnosis and identify warning features that should alert any surgeon to this unique presentation of Crohn's disease.

CASE PRESENTATION

A 46-year-old man presented with a 3-week history of central abdominal pain, diarrhoea and vomiting. He believed that this was associated with the ingestion of the lid of a USB mass storage device which he had held in his lips while working at his computer and inadvertently ingested while coughing. He had checked his stool but had not been aware of passing it. He denied any history of travel, and other family members were well.

On examination he looked well. He was haemodynamically stable but febrile at 38 °C. On abdominal examination he was tender in his right iliac fossa but with no guarding or rigidity. Haematological investigations were normal. Biochemical tests revealed a raised C reactive protein at 268. Blood cultures grew a *Staphylococcus* only. Initial radiological

Figure 1 Oblique coronal reconstruction and axial CT scan of the abdomen demonstrating focal terminal ileal wall thickening with locules of free air in the mesentery consistent with bowel perforation.

Figure 2 Oblique coronal reconstruction of CT scan of the abdomen demonstrating focal bowel wall thickening in the terminal ileum.

investigations including plain abdominal radiograph and ultrasound scan were unremarkable. A CT scan (figures 1 and 2) revealed thickened terminal ileal loops with localised perforation and lymphadenopathy with peri-ileal inflammation suggestive of inflammatory bowel disease.

Emergency surgery was carried out. At laparotomy a large perforated Crohn's mass and grossly dilated distal terminal ileum were observed (figure 3). An ileocolic resection with formation of an end ileostomy was performed. The patient made an uneventful recovery after the operation and was commenced on 5-aminosalicylic acid. Histology revealed marked thickening of the bowel wall of the terminal ileum and a piece of clear plastic of 30 mm maximum dimension, consistent with the cover of USB stick, in the lumen of the terminal ileum. The large bowel was normal. Microscopically, features were consistent with a clinical diagnosis of Crohn's disease (figures 4 and 5) and there was no evidence of neoplasia. The bowel wall was oedematous and thickened with transmural chronic inflammation

and peritonitis. Both intramural and extramural granulomas were also seen.

TREATMENT

An ileocolic resection with formation of an end ileostomy was performed.

OUTCOME AND FOLLOW-UP

The patient made an uneventful post-operative recovery and was commenced on 5-aminosalicylic acid. He has now had the end ileostomy reversed and remains asymptomatic.

DISCUSSION

Crohn's disease is a chronic inflammatory bowel disease characterised by transmural granuloma formation. The disease can affect any part of the digestive tract from the mouth to the anus but most commonly affects the terminal ileum and right side of the colon.¹ Affected individuals commonly present with abdominal pain, diarrhoea and weight

Figure 3 Resected mass from a limited right hemicolectomy.

Figure 4 Intramural granuloma (indicative of Crohn's disease) and peritonitis (consistent with bowel perforation).

loss.² However, Crohn's disease rarely presents with intestinal obstruction. Colicky pain in the right lower abdomen is often a sign of ileal inflammation in Crohn's disease (causing a functional obstruction) and is often misdiagnosed as

acute appendicitis.³ Inflammatory bowel disease rarely presents as mechanical bowel obstruction; one study found it to be as low as 1.8%.⁴ A similar case was reported in Ireland where the precipitating factor was a 20 pence piece

Figure 5 Extramural granuloma.

swallowed 4 months prior to presentation.⁵ The first case of Crohn's disease presenting with gastrointestinal obstruction was reported in 1998 when a patient accidentally ingested a pharmaceutical desiccant.⁶

Intestinal obstruction is characterised by abdominal pain, abdominal distension and absolute constipation and is frequently observed on the acute surgical take. It results from extrinsic compression, mural pathology or rarely intrinsic obstruction from a foreign body. The small intestine is involved in about 80% of cases of mechanical bowel obstruction, of which less than 5% are caused by a foreign body.⁷ However, Noble found that only 5% of cases of small bowel obstruction were caused by inflammatory bowel disease and 2% of cases were of miscellaneous aetiology, where the most common cause was postoperative adhesions.⁸ In 1987, a study established that between 80% and 93% of ingested foreign bodies that reach the stomach pass through uneventfully and that pre-existing intestinal disease predisposes to complications such as obstruction, perforation and haemorrhage.⁹ Thus, it would be wise to rule out underlying gastrointestinal pathology in a patient who presents with symptoms after ingestion of a foreign body that has not passed through.

As few previous studies have also shown, a retained foreign body should alert the clinician to an undiagnosed bowel abnormality. Endoscopic retrieval in this case would have been inappropriate due to the presence of a perforation as found on CT imaging. However, in hindsight, would the perforation have been present if the CT scan had been performed earlier? As the overall rate of perforation due to blunt foreign body ingestion has been estimated to be less than 1%,⁹ this case (along with the patient's experience and diagnosis of Crohn's disease) is truly unique.

Learning points

- An unpassed swallowed foreign body suggests underlying pathology.
- This patient waited on the ward for 5 days before undergoing a CT scan and a further 6 days before being taken to theatre.
- The documentation shows there was a clear lack of continuity and no evidence of communication between the on call registrars concerning this patient.
- Examinations before and after CT scanning failed to detect the presence of peritonism and thus the necessity for an operation.

Competing interests None.

Patient consent Obtained.

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