

## CASE REPORT

## 'Crohn's meanz Heinz': foreign body inflammatory mass mimicking Crohn's disease

R Visagan, R Grossman, P A Dimitriadis, A Desai

General Surgery Department,  
Heatherwood and Wexham  
Park Hospital, Slough, UK

**Correspondence to**  
Dr R Visagan,  
visagan@doctors.org.uk

**SUMMARY**

The authors present a patient with a presumed diagnosis of Crohn's disease for 6 years turning out to be an unusual inflammatory mass caused by ileal perforation due to a foreign body. When surgical intervention became necessary for admissions with recurrent obstruction, laparoscopy revealed an inflammatory mass in the terminal ileum, exposing two pieces of plastic bearing the word 'Heinz'. Resection of the inflammatory mass led to the complete resolution of symptoms. Histology from the operative specimen showed no features of Crohn's disease. There were no granulomas and no fissuring ulcers. This case highlights that an inflammatory mass in the small intestine caused by the perforation of ingested foreign body can mimic Crohn's disease. To our knowledge, this is the first report of a synthetic plastic packaging causing ileo-caecal junctional perforation mimicking Crohn's disease.

**BACKGROUND**

Crohn's disease is a transmural inflammatory bowel disorder that can affect any segment of the gastrointestinal tract (GIT). It commonly presents with diarrhoea, abdominal pain, weight loss and occasionally with symptoms of intestinal obstruction. Over time, Crohn's disease may be complicated by 'fistulating disease' or 'stricturing' fibrostenotic disease.<sup>1</sup> Stricturing disease is managed via stricturoplasties, endoscopic balloon dilation and surgical resection.<sup>2 3</sup> The diagnosis of Crohn's disease can often be difficult. Evidence from endoscopic biopsy may be problematic in the absence of granulomas.<sup>4</sup>

Most ingested foreign bodies are conveyed safely through the GIT. Occasionally, they are complicated with bowel obstruction or perforation requiring laparoscopy or laparotomy.<sup>5</sup> To our knowledge, this is the first report of synthetic plastic packaging causing ileo-caecal junctional perforation mimicking Crohn's disease.

**CASE PRESENTATION**

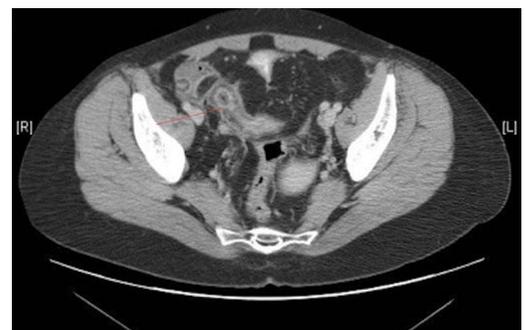
A 41-year-old woman presented with generalised abdominal pain and bloating 6 years ago. The episodes would last for 3 days and resolve spontaneously. This was associated with her bowel opening 3–5 times daily with soft stools and the absence of rectal bleeding. She had a good appetite and no weight loss, with unremarkable blood tests. Stool culture, parasite examination and testing for *Clostridium difficile* toxins A and B were all negative. Owing to a maternal history of aggressive

colonic carcinoma, she was under routine colonoscopic surveillance.

A colonoscopic biopsy in 2007 showed inflammatory/metaplastic polyps at 20 cm, non-specific changes compatible with, but non-diagnostic of, Crohn's disease. An oesophagogastroduodenoscopy (OGD) at that time revealed no abnormalities, and a biopsy from the D2 segment was normal. An abdominal CT scan highlighted focal scarring in the right iliac fossa with marked ileal thickening and oedema giving rise to an appearance of 'pseudomass' (figure 1). She was managed conservatively under the physicians with mesalazine twice daily at this time.

In 2011, her pain was now predominantly localised in the lower abdomen associated with localised firmness, but no obvious mass, herniae, peritonism or guarding. It was assumed that this was probably a mild Crohn's disease in the lower descending sigmoid colon. Later in the year, colonoscopy revealed pseudopolyps in the sigmoid colon and an inflammatory infiltrate on biopsy with the absence of granulomas, mucosal cell depletion and cryptitis. The caecal biopsy revealed mild acute on chronic inflammation with no evidence of granulomas or atypia. It was concluded at the time that these findings could still be consistent with Crohn's disease.

Further worsening of her symptoms led to four similar admissions in 2012 with acute small bowel obstruction. Inflammatory markers were only mildly elevated for two of the episodes—a white cell count (WCC) of  $15.5 \times 10^9/L$  and serum C reactive protein (CRP) of 13 mg/L in April and a WCC of  $11.9 \times 10^9/L$  and CRP of 18 mg/L in August, which normalised with treatment. All these episodes were managed conservatively with



**Figure 1** CT imaging—thickening of small bowel and terminal ileal inflammation. Mural hyperenhancement and increased mural thickness are the most sensitive CT findings of active Crohn's disease.

**To cite:** Visagan R, Grossman R, Dimitriadis PA, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-009603



**Figure 2** MRI enterography—non-specific inflammation of terminal ileum. MRI enterography allows the evaluation of bowel wall contrast enhancement, wall thickening and oedema, findings useful for the assessment of Crohn’s disease activity.

intravenous steroid therapy. MRI enterography (figure 2) revealed multiple small bowel strictures with dilated ileal and jejunal loops. It was proposed that this was Crohn’s disease behaving as a stricturing disease, thus explaining her recurrent admissions with obstruction. By this stage, she was passing stools 5–6 times daily and scored 8 on the Harvey-Bradshaw index<sup>6</sup> (a clinical non-biochemical measure of the severity of Crohn’s disease, where a score of >8 is considered ‘severe’). At this point, azathioprine was considered. However, due to disease progression and recurrent admissions, it was clear that surgical intervention was required.

She underwent laparoscopy and consequently a limited right hemicolectomy for an inflammatory mass in the terminal ileum with an inflammation also in the caecal pole. The intraoperative findings showed a dilated terminal ileum proximal to an inflammatory mass (figure 3). The mass was mobilised where it was found to contain two pieces of plastic bearing the word ‘Heinz’ on them (figure 4). This was associated with an adjacent perforation at the ileo-caecal junction. The patient had no recent recollection of consuming a meal involving the product found intraoperatively.

**OUTCOME AND FOLLOW-UP**

The histopathology from the intraoperative specimens revealed a stricture at the distal small bowel, surrounded by fibrosis connected to a ragged haemorrhagic surface. The perforation site was lined by the granulation tissue and connected to the haemorrhagic small bowel mucosa. The foci of ulcerated and



**Figure 3** Intraoperative image: dilated terminal ileum.



**Figure 4** An unusual inflammatory mass.

haemorrhagic mucosa seen were reminiscent of acute ischaemia in the caecum and ileo-caecal valve. This was associated with three reactive lymph nodes. Importantly, there were no granulomas. The conclusion was that these findings were consistent with a partially healed bowel perforation with adhesion and features of acute ischaemia with no evidence of Crohn’s disease. The operation and the postoperative recovery were uneventful and the patient was asymptomatic at 1, 3 and 5 months follow-up.

**DISCUSSION**

In over 80% of cases, foreign bodies will pass through GIT spontaneously. Between 10% and 20% require endoscopic intervention and 1% may require surgery.<sup>7</sup> The commonest complications of foreign body ingestion include obstruction and perforation. There is a wide spectrum of presenting symptoms including abdominal pain, fever, nausea and vomiting. A subsequent inflammatory mass may indeed present with diarrhoea and abdominal pain, in a picture identical to Crohn’s disease.<sup>5</sup> Important differential diagnoses to exclude include ulcerative colitis, diverticular disease, tuberculosis and infective colitis (table 1).<sup>8,9</sup>

**Table 1** Differential diagnosis of Crohn’s disease

Acute picture	Appendicitis
Chronic picture	Irritable bowel syndrome ulcerative colitis (5% indeterminate) Caecal carcinoma (especially older groups) or rarely small bowel carcinoma
Infective causes	<i>Yersinia enterocolitica</i> and <i>Mycobacterium tuberculosis</i> Occasionally: <i>Campylobacter</i> , <i>Shigella</i> and <i>Salmonella</i> , <i>Clostridium difficile</i> and <i>Escherichia coli</i> Rarely: amoebae, schistosomiasis, cytomegalovirus, eg NSAIDs, Mycophenolate mofetil
Drugs	Ischaemic colitis
Other causes	Behçet’s disease Lymphoma Radiotherapy Diverticulitis

NSAID, non-steroidal anti-inflammatory drug.

Perforation is the commonest in the terminal ileum, sigmoid colon or rectum. It is also common in narrowing and angulations, for example, the ileocaecal valve and rectosigmoid junction, especially with long and narrow foreign bodies.<sup>5</sup>

Notably, this patient had relatively subdued inflammatory markers. In the context of diagnosing Crohn's disease, leucocytosis is a non-specific marker of inflammation being part of the acute phase response and susceptible to the influence of glucocorticoids and other agents used in the treatment of Crohn's disease.<sup>10</sup> However, CRP is elevated in most inflammatory diseases and interestingly Crohn's disease is associated with a stronger CRP response compared to ulcerative colitis, purported to be related to interleukin-6 levels and the nature of transmural inflammation in Crohn's disease.<sup>10</sup> There is little literature investigating inflammatory markers in foreign body ingestion—intuitively, significant perforation +/- peritonitis associated with provocatively shaped foreign bodies may mount a greater inflammatory response.

In short, the absence of definitive histological evidence of Crohn's disease, as well as the presence of relatively normal inflammatory markers and normal histopathology of the bowel, all suggest that this patient's symptoms were secondary to the inflammatory response to 'Heinz' foreign body perforation rather than Crohn's disease. This is supported by the intraoperative findings, histopathological findings and an asymptomatic postoperative follow-up at 3 months. It is plausible that the stricturing and thickening of the bowel were a red herring and part of a chronic inflammatory response to the foreign body.

A thorough review of the literature revealed four cases of foreign body ingestion mimicking Crohn's disease.<sup>11–14</sup>

O'Gorman *et al*<sup>11</sup> reported on a 7-year-old boy who presented with lower abdominal pain and mild fever where Crohn's disease formed part of the differential diagnosis. The diagnosis of a toothpick perforating the lumen of the rectosigmoid colon was made intraoperatively 4 weeks after the initial onset of the symptoms. Colonoscopy, OGD and CT scan of the abdomen were performed prior to surgery, but were inconclusive.

Mederos *et al*<sup>12</sup> (2007) reported on a 35-year-old man with a 3-day history of abdominal pain. A CT of the abdomen was performed and was suggestive of Crohn's disease. Owing to worsening symptomatology, the patient was taken to the operation theatre 3 days later where he was diagnosed with ileal perforation secondary to a toothpick. El-Tarchichi *et al*<sup>13</sup> presented a case of a 42-year-old man with a 10-day history of mild abdominal pain and diarrhoea. A CT of the abdomen was suggestive of Crohn's disease. Toothpick perforation of the distal ileum was diagnosed by colonoscopy and it was successfully removed endoscopically.

Finally, Ioannidis *et al*<sup>14</sup> presented a case of toothpick perforating the bowel 50 cm from the ileo-caecal valve. A CT scan of the abdomen, OGD, colonoscopy and MR enterography had failed to identify the cause of this patients' symptoms and the diagnosis was made on laparoscopy almost 2 months after the onset of symptoms.

In summary, in previously documented cases, the ingested foreign body was a toothpick that the patients did not recall swallowing. Imaging studies were non-diagnostic and in three cases the diagnosis was made during laparoscopy/laparotomy. In our case, symptomatology was milder and the diagnosis of foreign body perforation was reached 6 years after the initial presentation.

On the other hand, retention of a foreign body in the GIT should alert the clinician to the presence of previously

undiagnosed bowel pathology such as Crohn's disease. Although rare, foreign body retention initiating diagnosis of Crohn's disease has been reported in the literature.<sup>15</sup>

To our knowledge, this is the first report of a rare case of a synthetic plastic packaging causing ileo-caecal junctional perforation mimicking Crohn's disease. It is important to consider alternative surgical diagnoses in patients with presumed Crohn's disease unresponsive to standard treatment.

### Learning points

- ▶ A diagnosis of Crohn's disease can be difficult to make owing to non-specific symptomatology and equivocal biopsy results.
- ▶ Foreign body ingestion is occasionally seen in the adult population and is not restricted to paediatrics.
- ▶ Foreign body inflammatory masses may go unnoticed for years and may present in a cryptic manner mimicking colitis.
- ▶ Radiographic and endoscopic studies may not be always diagnostic; clinicians need to be open-minded and treat the patient rather than tests.

**Competing interests** None.

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

### REFERENCES

- 1 Gasche C, Scholmerich J, Brynskov J, *et al*. A simple classification of Crohn's disease: report of the Working Party for the World Congresses of Gastroenterology, Vienna 1998. *Inflamm Bowel Dis* 2000;6:8–15.
- 2 Hassan C, Zullo A, De Francesco V, *et al*. Systematic review: endoscopic dilatation in Crohn's disease. *Aliment Pharmacol Ther* 2007;26:1457–64.
- 3 Yamamoto T, Fazio VW, Tekkis PP. Safety and efficacy of strictureplasty for Crohn's disease: a systematic review and meta-analysis. *Dis Colon Rectum* 2007;50:1968–86.
- 4 Leighton JA, Shen B, Baron TH, *et al*. ASGE guideline: endoscopy in the diagnosis and treatment of inflammatory bowel disease. Standards of Practice Committee, American Society for Gastrointestinal Endoscopy. *Gastrointest Endosc* 2006;63:558–65.
- 5 Goh BK, Chow PK, Quah HM, *et al*. Perforation of the gastrointestinal tract secondary to ingestion of foreign bodies. *World J Surg* 2006;30:372–7.
- 6 Harvey RF, Bradshaw JM. A simple index of Crohn's disease activity. *Lancet* 1980;1:514.
- 7 Thompson CC. *Gastrointestinal foreign bodies in CURRENT diagnosis & treatment: gastroenterology, hepatology & endoscopy*. Greenberger: McGraw-Hill; 2009.
- 8 Kumarasinghe MP, Quek TP, Chau CY, *et al*. Endoscopic biopsy features and diagnostic challenges of adult Crohn's disease at initial presentation. *Pathology* 2010;42:131–7.
- 9 Warrell DA, Cox TM, Firth JD. *Oxford textbook of medicine*. 5th edn. Oxford University Press: Oxford, 2010.
- 10 Vermeire S, Van Assche A, Rutgeerts P. Laboratory markers in IBD: useful, magic, or unnecessary toys?. *Gut* 2006;55:426–31.
- 11 O'Gorman MA, Boyer RS, Jackson WD. Toothpick foreign body perforation and migration mimicking Crohn's disease in a child. *J Pediatr Gastroenterol Nutr* 1996;23:628–30.
- 12 Mederos R, Danielpour P, Reyna Y, *et al*. Toothpick perforation of the small intestine diagnosed by exploratory laparoscopy. *Surg Rounds* 2007;30:582–4.
- 13 El-Tarchichi MA, Yafi MF, Debek AH. Electronic clinical challenges and images in GI. Perforating toothpick mimicking Crohn's disease of the ileum. *Gastroenterology* 2009;136:e8–9.
- 14 Ioannidis O, Kakoutis E, Sakkas L, *et al*. Ingested toothpick fistula of the ileum mimicking Crohn's disease. *Acta Gastroenterol Belg* 2010;73:527–9.
- 15 O'Donnell ME, Gibson N, Sharif MA, *et al*. Crohn's disease of the terminal ileum: a cheap diagnosis. *Ir J Med Sci* 2010;177:401–3.

Copyright 2013 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.  
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact [consortiasales@bmjgroup.com](mailto:consortiasales@bmjgroup.com)

Visit [casereports.bmj.com](http://casereports.bmj.com) for more articles like this and to become a Fellow