CASE REPORT

Epigastric pain...it's not always alcohol! An unusual presentation of caecal intussusception

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SUMMARY

Our patient is a 19-year-old man who presented to the emergency department after consuming 50–60 units of alcohol over a weekend. He presented with a 2-day history of right-upper quadrant (RUQ) and epigastric pain radiating to the back. On examination he was haemodynamically stable. His abdomen was soft with minimal tenderness in the RUQ, epigastric and right-iliac fossa areas. Laboratory results showed a slightly raised erythrocyte sedimentation rate. Amylase and white cell count were normal. Ultrasound was performed raising the suspicion of intussusception. A CT scan was recommended and confirmed the presence of an intussusception. Once diagnosis was established, the patient had an emergency laparotomy and right hemicolectomy, with per-operative findings consistent with the CT findings. This case illustrates the importance of keeping an open approach to all differentials while considering a diagnosis along with the importance of recognising intussusception when it occurs as complications can each represent a cause of mortality on their own.

BACKGROUND

We decided to write this interesting case as first, this could easily have been misdiagnosed as gastritis, in view of the patients' symptoms and recent alcohol intake. Second, diagnosis of intussusception in the adult population is rare, and especially in this particular case the role of keeping an open mind and thoroughly investigating a patient was illustrated even though intussusception was not initially a main differential diagnosis.

CASE PRESENTATION

A 19-year-old man presented to the emergency department with sudden onset of right-upper quadrant and epigastric pain for 2 days after consuming 50–60 units of alcohol over the weekend. This pain was colicky in nature, and occurred every 10–15 min. The pain was described as an intermittent, sharp pain which radiated to the back. There was associated nausea and anorexia. The patient had no change in bowel motions, vomiting or urinary symptoms. The pain was slightly relieved by morphine but there was no improvement with proton pump inhibitor therapy. The pain was rated 7/10 in severity. This patient had a history of *Helicobacter pylori* infection as a child treated with triple therapy, a benign tumour of the right hip and a fracture of the right scaphoid. The patient had no relevant family history. He was a non-smoker, consumed 20–30 units of alcohol per week and lived

at home with his parents. Physical examination revealed a haemodynamically stable patient. Heart was 80 bpm, blood pressure 131/72, temperature 36.7°C and respiratory rate 12 breaths/min. The abdomen was minimally tender in the epigastric, right-upper quadrant and right-iliac fossa areas with minimal guarding but no rebound tenderness present. Bowel sounds were present. Differential diagnosis on admission was gastritis, peptic ulcer disease, acute pancreatitis or biliary pathology.

INVESTIGATIONS

On admission the patient had routine bloods done. Blood results showed white cell count $10.48 \times 10^3/\mu\text{L}$, haemoglobin 15.4 g/dL, platelet $324 \times 10^9/\text{L}$, amylase 37 U/L, slightly elevated erythrocyte sedimentation rate 49 mm/h and a normal liver and renal profile. Owing to the large ingestion of alcohol, a gastroscopy was planned for the following day. An ultrasound of the abdomen was also booked to look for any free fluid or biliary pathology. The ultrasound was performed first which revealed the possibility of a focal colonic pathology such as intussusception (figure 1). This unusual finding in a patient of this age was further investigated by CT of the abdomen as recommended by the radiology department. CT of the abdomen (figure 2) confirmed the presence of an intussusception extending from the caecum to the mid-transverse colon with a focus of calcification which was believed to be an appendicolith.

TREATMENT

Once the diagnosis had been established after CT scan, the patient had an emergency laparotomy and limited right hemicolectomy. In theatre, the caecum was found to be intussuscepted into the ascending colon. An abnormal thickened caecal pole was identified as the lead point. This intussusception was easily reduced and the caecum and ascending colon easily mobilised. The terminal ileum was divided and the ascending colon divided just distal to the caecum. Terminal ileum of 5.5 cm, normal appendix and 7 cm of ascending colon were removed and sent to the laboratory for histology. A terminal ileum to ascending colon anastomosis was performed and the wound was closed using staples. On gross inspection of the specimen in the laboratory, the small bowel and appendix appeared normal. Just distal to the ileocaecal valve there was a polypoid area 3.5 cm in axial length and 3 cm across. The histology (figures 3 and 4) report from the polypoid area revealed ulceration of the surface with marked submucosal oedema, haemorrhage

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Figure 1 A heterogeneous echogenic oblong structure with some central peristalsis in the expected location of the transverse colon raising the possibility of colonic intussusceptions.

and congestion which most likely was the apex/lead point of the intussusception.

OUTCOME AND FOLLOW-UP

The patient made an uneventful recovery in hospital and was discharged home. Three days after discharge the patient returned to the acute assessment unit with a superficial surgical site infection. A wound swab was sent showing three plus of *Escherichia coli*. He was started on a course of oral coamoxiclav for 7 days and was seen back in the outpatient clinic in 2 weeks. When seen back in outpatient clinic, the surgical site infection had resolved. The patient was seen twice more in outpatients, with no further issues and discharged from the clinic.

DISCUSSION

Intussusception occurs when a proximal segment of the gastrointestinal tract called the intussusceptum telescopes into the lumen of an adjacent segment, known as the intussusciens. Intussusception is the most common cause of intestinal obstruction in infants between 6 and 36 months of age.¹ However, in adults intussusception is a rare identity accounting for only 5%

Figure 2 Intussusception extending from the caecum to the mid-transverse colon. No lead point identifiable.

Figure 3 Histology sample from a polypoid area distal to the ileocaecal valve showing marked submucosal oedema, haemorrhage and congestion most likely was the leading point of the intussusception.

of the total number of intussusceptions.² Intussusception is a serious disorder in children and adults which if left undiagnosed can progress to bowel ischaemia, obstruction or perforation. Intussusception accounts for only 1% of all causes of bowel obstruction,² therefore it is often misdiagnosed initially.

This is an interesting and rare case of intussusception as the patient had initially come in with symptoms that fitted a diagnosis of possibly gastritis or pancreatitis.

In adults, intussusception is usually due to a pathological lead point within the bowel. This lead point is malignant in over half of cases.³⁻⁴ The lead point causes intussusception, as it is pulled forward by normal peristalsis, which telescopes the affected segment of bowel into another segment of bowel. Intussusception can be classified by its aetiology (neoplastic, non-neoplastic or idiopathic) or its location (enteroenteric, which is limited to the small bowel; ileocolic or colocolic.). About 80–90% of adult intussusceptions are secondary to an underlying pathology, known as a lead point.⁵ Of these intussusceptions approximately 65% are due to benign or malignant

Figure 4 Histology sample from a polypoid area distal to the ileocaecal valve showing marked submucosal oedema, haemorrhage and congestion most likely was the leading point of the intussusception.

neoplasms, with only 12–25% secondary to a non-neoplastic process⁵ such as oedema, as seen in our case. In adults, idiopathic intussusception accounts for only roughly 10% of cases.⁵ It is documented that most intussusceptions in the small bowel are secondary to benign lesions.^{5–6} These include lipoma, leiomyoma, haemangioma, neurofibroma, adhesions, Meckel's diverticulum, lymphoid hyperplasia and adenitis. In the large bowel the likelihood of malignancy as the cause of intussusception is high.^{5–6} However, Azar and Berger undertook a retrospective study of all intussusceptions over 30 years in Massachusetts General Hospital. The total number of intussusceptions in this period was 58, 14 of which were colonic and 44 were enteric. Of the enteric intussusceptions, 52% were benign and 48% malignant, whereas 57% of the colonic lesions were benign and 43% malignant.⁷ This study along with a retrospective study of 13 cases by Begos and Sandlor reflects that the likelihood of neoplasm, when intussusception occurs is high. As a result surgical resection of the intussusception without reduction is the preferred treatment in adults, as almost half of both colonic and enteric intussusceptions are associated with malignancy.^{5–7}

Clinical presentation of intussusception is interesting. Symptoms can be acute, intermittent or long-standing and are often non-specific which can make diagnosis difficult. The most commonly reported symptoms are abdominal pain, nausea and vomiting while melaena, fever, weight loss, constipation, diarrhoea and a palpable abdominal mass were less frequently reported.⁷

The diagnosis of intussusceptions in adults and children is greatly aided by diagnostic imaging. Plain film of the abdomen cannot give a definitive diagnosis but may show signs of bowel obstruction pointing you towards the diagnosis. Ultrasonography is a good screening tool, as shown in our case, but is more sensitive in children. CT scan is the most sensitive diagnostic tool in diagnosing intussusception.⁸ Along with diagnosing intussusceptions, an abdominal CT can be useful in distinguishing between a lead point intussusception and a non-lead point intussusception and therefore has the potential to reduce the prevalence of unnecessary surgery.⁹ In a CT scan, intussusception can be visualised as a target-like appearance or sausage-shaped mass based on the direction of the X-ray beam to the long axis of the bowel segment. The target sign on CT is secondary to alternating high and low attenuation of the bowel wall and mesenteric fat in the intussuscepted bowel segment.

Once the diagnosis of intussusceptions is established, treatment is essential. Owing to the high risk of associated malignancy in adults, conservative management such as decompression is not favoured. Surgical resection is always preferred in colonic intussusception as malignancy is more common in colonic cases. However, in small bowel intussusception, reduction can be an option but only if the bowel is viable and no neoplastic process has been identified on imaging.^{8–10–11}

In conclusion, this is a report of a case of intussusception in an adult, with an unusually benign, non-lead-point colonic intussusception, with a caecal leading point. The importance of

this case is first, to ensure one keeps an open mind when establishing a differential diagnosis and second, to consider intussusception in unusual presentations of abdominal pain. The most important factor in the diagnosis of intussusception in the adult population is awareness of the possibility of intussusception occurring in an adult patient with abdominal pain and that once intussusception is considered CT is the most sensitive diagnostic tool.

Learning points

- ▶ Alcohol is a common cause of gastritis and peptic ulcer disease, however, it is important to keep an open mind when patients present with abdominal pain with heavy alcohol consumption.
- ▶ Consider intussusception as a rare cause of abdominal pain in the adult population.
- ▶ Intussusception in adults has a lead point 80–90% of the time. Small bowel intussusception is more often a non-neoplastic lead point, whereas large bowel intussusception is more commonly secondary to a neoplastic lead-point.
- ▶ The most common presentation of adult intussusception is intermittent abdominal pain, crampy in nature.
- ▶ The most sensitive diagnostic tool is a CT scan.
- ▶ The ideal treatment for adult intussusception is surgery in the majority of cases.

Competing interests None.

Patient consent Obtained.

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