

*Case report*

## An unusual case of adult intussusception

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### SUMMARY

**Intussusception in adults is a rare condition accounting for 5% of all causes of bowel obstruction. Manifestations include abdominal pain, vomiting and occasionally melaena and palpable abdominal mass. Of note, 90% of intussusception cases in adults are secondary mainly complicating postoperative adhesions, benign or malignant tumors or diverticulosis, while 10% of cases are primary. We present a patient with ascending colon intussusception secondary to increased bowel mobility due to the presence of blood in the bowel following gastrointestinal haemorrhage. We display relevant imaging findings and discuss the further progress of the case.**

**Key words:** Intussusception, gastrointestinal haemorrhage

### INTRODUCTION

Of all cases of intussusception, only 5% occur in adults, while the remaining 95% occur in children.

We report the rare case of intussusception following upper gastrointestinal haemorrhage in an adult. We present characteristic imaging findings, as well as findings of endoscopic procedures, and discuss the causes and management of intussusception in adults.

### CASE REPORT

A 70-year-old man presented with a 3-day history of abdominal pain preceded by two days of bloody diarrhoea. His medical history consisted of duodenal ulcer diagnosed 6 years earlier and chronic obstructive pul-

monary disease treated with salbutamol and methylprednisolone. On examination the abdomen was distended with increased bowel sounds and signs of peritoneal inflammation (guarding, rebound tenderness) in the right iliac fossa. Per rectum examination revealed melaena. Pulmonary auscultation disclosed decreased breath sounds and wheezing in the lower lung fields bilaterally. Blood pressure was 170/100 mmHg, pulse 100/min and temperature 36,5°C.

Laboratory investigations showed haemoglobin of 14g/dl and a white cell count of 16,000/uL with 68% neutrophils, while clotting tests and routine biochemistry were normal. The plain abdominal film and upper abdomen ultrasound were unremarkable. The patient underwent upper gastrointestinal endoscopy, which demonstrated two linear ulcerations with signs of recent haemorrhage on the major gastric curve. Sigmoidoscopy showed a rectum full of faeces. Computed tomography (CT) of the abdomen imaged a mass encompassing a hypodense circular halo in the terminal segment of the ascending colon, with blurring of fatty tissue surrounding the lesion. The findings were consistent with intussusception of the ascending colon (Fig. 1). Colonoscopy performed following the CT scan revealed no anatomical lesion. The patient was managed conservatively with administration of a proton pump inhibitor (omeprazole), fluids and electrolytes. The white cell count gradually returned to normal, the haemoglobin level remained stable and the patient's general condition improved with obliteration of symptoms within the following three days. Repeat computed tomography of the abdomen on day ten of hospitalization disclosed no pathology. A barium follow-through was carried out and was found to be within normal range, while repeat gastroscopy showed that the linear ulcers were healing. The patient was discharged in good health, with a 20-day prescription of a proton pump inhibitor.

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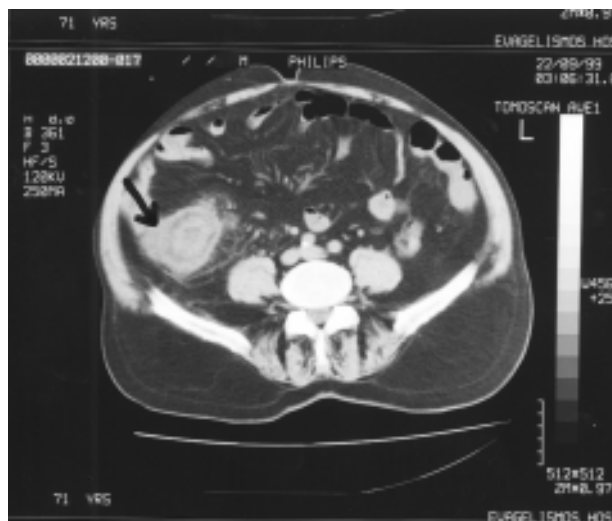
## DISCUSSION

Although intussusception is a relatively common condition in children, it rarely occurs in adults. It is caused by the entry of a bowel segment into an adjacent segment, as increased peristalsis incites the proximal segment to invaginate into the distal one, which thus surrounds the former.

Intussusception conforms to the rule of fives: 5% of all instances arise in adults, while the condition accounts for 5% of cases of bowel obstruction in adults.<sup>1</sup> It should be emphasized that in adults, as opposed to children, intussusception is secondary to a discrete recognizable enteric lesion in 90% of cases.<sup>2-11</sup> The incidence of intussusception is greater in the small intestine (64%), whilst lower in the large bowel (36%), where the pathological cause is usually a malignant tumor (Table 1).

A number of imaging techniques has been described to be of use in diagnosing intussusception: plain abdominal films, computed tomography, barium studies, abdominal ultrasound, angiography, magnetic resonance imaging (MRI) and radionuclide studies. In one study CT proved to be the most reliable means with 78% accuracy. Other studies designate barium follow-through and barium enema as most accurate (77% and 95% respectively).

In our case, the “target” sign was displayed in the terminal segment of the ascending colon on abdominal CT (Fig. 1). This feature is almost pathognomonic for intussusception and arises as the intussusceptum (proxi-



**Figure 1.** Abdominal CT displaying the “target” sign (arrow), a characteristic radiological finding of intussusception

mal segment) forms the center and the oedematous intussusceptum (distal segment) forms the external ring.

On these grounds, intussusception was considered as the most likely diagnosis; however an inflammatory or neoplastic condition could not yet be excluded at that point. We decided to proceed to colonoscopy for diagnostic and therapeutic purposes. This disclosed no significant pathology, other than the presence of erythema, oedema and petechiae in the mucosa of the ascending colon at the anatomical location where the “target” sign had been previously depicted on CT. Following colonoscopy, the patient improved significantly, while the repeat abdominal CT was normal.

We therefore concluded that pneumatic reduction of intussusception followed the introduction of air into the bowel during the endoscopic procedure. Pneumatic or hydrostatic reduction was proposed by Hirschsprung in 1876 and has been practiced since, mainly in cases of primary intussusception in children. We present the rare, according to the above, case of colonic intussusception in an adult, with no definable anatomic bowel lesion. It should be noted that in this particular patient intussusception and symptoms of bowel obstruction were preceded by a peptic bleed due to two linear gastric ulcerations, as demonstrated by gastroscopy. Despite the lack of previous reports in the literature, it could be suggested that the presence of blood intraluminally increased bowel motility, thus precipitating intussusception of the ascending colon.

Currently most authors agree that in the instance of

**Table 1.** Causes of intussusception in adults:

Malignant tumors:		Adenocarcinoma
		Carcinoid
		Lymphoma
		Metastatic tumor
		Lymphosarcoma
		Leiomyosarcoma
Benign lesions:	Adenomatous polyp	Inflammatory lesions
	Lipoma	Adhesions
	Leiomyoma	Meckel's diverticulum
	Haemangioma	Previous anastomosis
	Neurofibroma	Endometriosis
Motility disorders		
Idiopathic		

adult intussusception, surgical resection is advisable, particularly when the large bowel is involved, as almost half of all cases are due to malignancy; nevertheless, an attempt towards hydrostatic reduction and colonoscopy is considered acceptable in a limited number of selected patients.<sup>7,10,11</sup>

In conclusion, our patient suffered from upper gastrointestinal haemorrhage and intussusception of the ascending colon. We believe that there was an association between the intraluminal presence of blood and the subsequent colonic intussusception.

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