Intussusception is defined as the telescoping of one segment of the gastrointestinal tract (intussusceptum) into an intestinal segment distal to it (intussusciens). Intestinal invagination or intussusception is the leading cause of intestinal obstruction in children, but in adults it accounts for only 5% of all intussusceptions, up to 5% of all cases of adult intestinal obstructions and 0.003%–0.02% of all adult hospital admissions. In contrast to childhood intussusception, which is idiopathic in 90% of cases, adult intussusception has a demonstrable lead point, which is a well-definable pathologic abnormality in 70%–90% of cases.

We describe the case of a patient with a jejunojejunal intussusception caused by an adenocarcinoma of the jejunum.

Case report

An 85-year-old woman with anemia was admitted to the gastrointestinal department because of nausea and vomiting and progressively worsening abdominal pain. In the past, she had undergone hysterectomy, as well as cholecystectomy for gallstones, and she had hypertension. On physical examination, the patient was pale. She had tenderness in the upper abdomen without peritoneal signs or a palpable mass. Initial laboratory tests gave the following results: hemoglobin 59 (normal 75–100) g/L, hematocrit 0.29 (normal 0.35–0.45), C-reactive protein 23 (normal < 7) mg/L, leukocyte count 13.7 × 10⁹/L (normal 4.0–10.0).

Computed tomography (CT) showed thickening of the small bowel wall, narrowing and polypoid masses (Fig. 1). Jejunoscopy showed a semicircular growing tumour in the jejunum 20 cm distal to the ligament of Treitz. A biopsy specimen showed an adenocarcinoma.

At laparotomy, a jejunojejunal intussusception 15 cm long was seen just 10 cm distal to the ligament of Treitz (Fig. 2). The intussusception redressed spontaneously, and we resected the tumour with use of a side-to-side anastomosis. The leading point of the invagination was the known jejunal tumour. Histologic examination of the resected specimen showed a moderately differentiated adenocarcinoma with infiltration through all jejunal layers into the subserosa, with metastases to 2 of 8 lymph nodes (T₃N₁Mₒ).

The patient had a smooth recovery. At follow-up 6 weeks later, she was doing well.

Discussion

The cause of the intussusception in our case was most probably the jejunal tumour.

Malignant disease of the small intestine is rare. The frequency is 0.7–1.6 per 100 000 population. Although the small intestine represents 75% of the length and 90% of the surface area of the alimentary tract, small bowel malignant tumours account for only 2% of all gastrointestinal neoplasms and less than 0.4% of all cancers in the United States. Among the less common etiologies...
are postoperative factors (adhesions, su-
ture line, intestinal tubes),\textsuperscript{5} inflamma-
tory diseases (salmonellosis, Crohn’s
disease, tuberculosis, AIDS)\textsuperscript{2.5} and mis-
cellaneous causes (Meckel’s diverticu-
lum, sprue, human immunodeficiency
virus, duplication, intramural
hematoma).\textsuperscript{5} In adults, about 10\%-20\%
of intussusceptions are idiopathic.\textsuperscript{2}

The classic clinical triad of conven-
tional intussusception seen in children
(sudden onset of intermittent colicky
pain, bloody mucoid stools and a palpa-
ble mass) is not common in adulthood.\textsuperscript{2}
In adults, the clinical findings are vari-
able: acute intestinal obstruction is not
common, and most have a history of
episodes of intermittent abdominal pain
and vomiting for a least 1 month, some-
times with nausea, vomiting and abdomi-
nal distension.\textsuperscript{1} Our patient had intestinal
obstruction with progressive abdominal
pain and nausea with vomiting, and she
was suffering from anemia.

Several different radiologic methods
have been described as useful in the diag-
nosis of intussusception, such as CT, ul-
trasonography and barium enema exami-
nation. Characteristic CT features of
intussusception include an early target
mass with enveloped, eccentrically lo-
cated areas of low density; later, a layer-
ing effect occurs as a result of longitudi-
nal compression and venous congestion
in the intussusception.\textsuperscript{1-3} However, be-
cause intussusception is uncommon in
adults, in many cases doctors do not rec-
ognize the CT findings as an invagina-
tion. In our case, the invagination was
only seen in retrospect. As well, the in-
vagination was not recognized during
colonoscopy, but in retrospect, it was
seen as a “sausage” with normal intesti-
nal mucosa.

Definitive treatment and management
of intussusception should be individual-
ized according to the age of the patient
and the anatomical location of the intus-
susception. Because an adult intussuscep-
tion has a demonstrable lead point,
which is a well-definable pathologic ab-
normality in about 90\% of cases, resec-
tion is almost always required. However,
the extent of resection and whether or
not the intussusception should be re-
duced before resection remain controver-
sial.\textsuperscript{2} Reduction can lead to transperi-
toneal seeding after the exposing and
handling of friable and edematous mali-
nant tissue. That is why reduction should
not be attempted if there are signs of
bowel ischemia or inflammation or if ma-
lignancy is suspected.\textsuperscript{1}

In our case, the intussusception re-
dressed spontaneously and we performed
an oncologic resection of the tumour.

Intussusception in adults is difficult to
recognize because it is rare. Also, in our
case, the invagination was missed on CT
and during colonoscopy. In most cases an
etiologic cause can be found, although
most intussusceptions are seen on the
operating table.\textsuperscript{1,2} When malignant dis-
case is suspected, resection without re-
duction is the recommended treatment.

Competing interests: None declared.

References

1. Azar T, Berger DL. Adult intussusception. 
2. Begos DG, Sandor A, Modlin IM. The di-
   agnosis and management of adult intus-
3. Gourtsoyiannis NC, Papakonstantinou O,
   Bays D, et al. Adult enteric intussuscep-
   tion: additional observations on entero-
   statistics, 2006. CA Cancer J Clin 2006;
   56:106.
5. Carels RA, Ibelings MG, Jongasma CK,
   et al. Invaginatie bij volwassenen. [Article
   in Dutch] Ned Tijdschr Geneesk 1997;
   141:2122-6.