# Adult Ileocolic Intussusception; A Rare Cause of Epigastric Pain.

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## Introduction

Adult intussusception is a rare and acute medical condition accounting for 1%-5% of bowel obstructions in adults (1).

Clinically the condition often presents with non-specific symptoms such as vague crampy abdominal pain, nausea, bloating, vomiting or bloody stools (2). Pain may fluctuate and vomiting may appear bilious. A prolonged delay in diagnosis can potentially lead to bowel obstruction, ischaemia, perforation, peritonitis and sepsis (3).

A clinical diagnosis can prove challenging due to the many mimics of abdominal pain (3) and ultrasound may be requested as a first-line investigation for generalised abdominal pain in the emergency setting.

## Aim

The poster describes the incidental ultrasound findings of an abdominal scan in the sub-acute setting.

Diagnostic ultrasound signs and features are discussed.

## Case Report

A 21-year-old female presented to the Emergency Department with two days of severe midline pain on a background of recurrent epigastric pain in the setting of longstanding gastritis and high-level anxiety.

Following overnight admission an initial clinical diagnosis of severe gastritis and possible gastro-duodenal ulcer was made. The patient was treated with antacid medication, antiemetics and analgesia. A non-urgent right upper quadrant (RUQ) ultrasound (US) was recommended to rule out gallstones despite normal biochemistry.

Within 24 hours a targeted trans-abdominal ultrasound scan was performed to include the pancreas, liver, gallbladder and biliary tree. After discussion with the patient, the scan was extended to include the region of pelvic pain, as indicated by the patient.

**Ultrasound findings**:

- Painless gallbladder sludge
- Distended, fluid-filled small bowel loops in the left flank and left lower abdomen (Figure 1)
- 10 cm layered abdominal mass in the midline pelvis with a "pseudokidney" appearance in the longitudinal plane (Figure 2) and "target" appearance in the transverse axis (Figure 3)

**Sonographer diagnosis:**

- Likely small bowel obstruction and intestinal intussusception.


*Figure 1. Fluid-filled, dilated small bowel loops*


*Figure 2. Longitudinal 2D US shows 10cm "pseudokidney" mass with features of Ileocolic intussusception in the midline pelvis*

*Figure 3. Transverse 2D US demonstrates a layered "target-like" mass*

Contrast-enhanced computerised tomography (CT) was performed immediately after US examination.
This confirmed the diagnosis of ileocolic intussusception with likely ischaemia and associated small bowel obstruction (Figures 4 & 5).

Emergency exploratory laparotomy and hemicolectomy identified over 55cm of non-reducible, compromised bowel. Pathological evaluation diagnosed a 3cm non-cancerous polypoid tumour (not visualised with US or CT) as the lead point of intussusception.

Despite hospital-acquired surgical infection and subsequent interventional collection drainage, the patient recovered well within two weeks of diagnosis but failed to attend follow-up clinic appointments.

*Figure 4. Coronal CT confirms a large pelvic and right iliac fossa ileocolic intussusception with ischaemic small bowel. Associated dilated small intestine loops.*

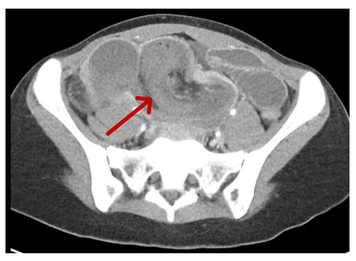

*Figure 5. Axial CT demonstrates a "pseudokidney" appearance of ileocolic intussusception. Central omental fat appears hypodense compared to the bowel wall.*

## Discussion

Intussusception occurs when one section of the bowel telescopes into an adjacent distal bowel lumen by peristalsis (2). In most adult cases this is caused by a focal lesion as a lead point (3). In this case, it was found to be enterocolonic or ileocolonic whereby the ileum was pulled into the cecum and ascending colon (figure 6). A 3cm polypoid lesion was identified post-surgically as the cause.

Adult intussusception, whilst rarely presented to the sonography department, can be readily identified by characteristic ultrasound appearances.

Ultrasound diagnostic signs include:

- **Target (or doughnut) sign** in the axial plane (figures 3 & 7).

  Alternating concentric rings of hyper- and hypogenic bowel representing compressed ileum and mesentery (inner) and oedematous colon (outer). Dirty shadowing may represent omentum, gas or bowel contents. Hyperaemia was not demonstrated in this case with colour Doppler.

- **Pseudokidney sign** in the longitudinal plane (figures 2 & 5).

  Parallel lines of echogenicity. An outer layer of hypoechoic oedematous colon surrounds trapped echogenic mesenteric fat. As venous and arterial blood supply become compromised the outer bowel wall becomes oedematous and hypoechoic (4).

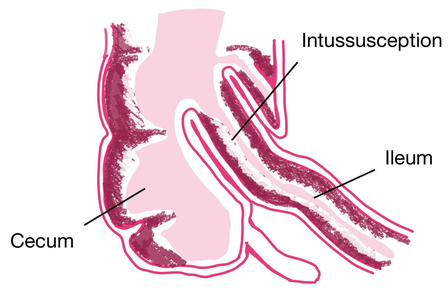


*Figure 6. Ileocolic intussusception. Ileum telescopes into the lumen of the colon by peristalsis*

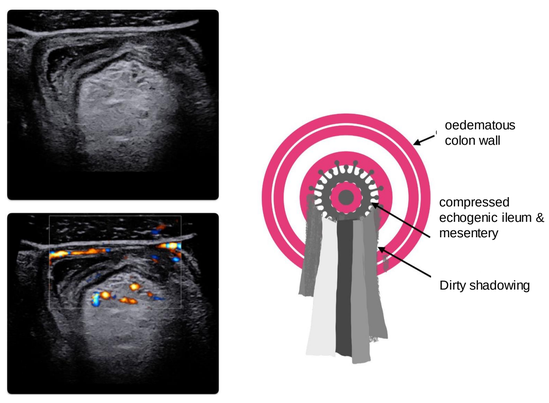


*Figure 7. Transverse image shows round mass with alternating concentric rings of hyper- and hypoechogenicity representing bowel wall and mesenteric fat.*

## Conclusion

Ultrasound of the RUQ is commonly requested in the emergency setting to investigate the cause of acute abdominal pain.

It is greatly beneficial to converse directly with the patient regarding their clinical symptoms and to adjust or extend the examination accordingly.

During a first-line investigation, the sonographer can confidently diagnose uncommon and unexpected bowel pathology beyond the hepatobiliary system.

## References

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