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Brief report

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# Mechanical small bowel obstruction secondary to acute cholecystitis in the context of an irreducible inguinal hernia: A case report

Alessandro Sgrò[1,2], Joshua McIntyre[1], Andreas Luhmann[1]

**Correspondence**: Mr Alessandro Sgrò, Department of General Surgery, Victoria Hospital, Hayfield Road, Kirkcaldy, Fife, KY2 5AH, UK. E-mail: sgroalessandro3@gmail.com

## Abstract

**Introduction:** Small bowel obstruction most often results from adhesions, hernias or neoplasia, yet obstruction due to gallbladder perforation remains exceptionally rare. We describe a case in which dual pathology, where a seemingly straightforward incarcerated inguinal hernia and a perforated gallbladder with abscess formation, produced misleading clinical and imaging findings, delaying definitive diagnosis.

**Case Report:** A 78-year-old man presented with 24 hours of diffuse abdominal pain, vomiting and distension, following ten days of constipation. His history included atrial fibrillation on edoxaban, severe mitral regurgitation, pulmonary hypertension, right heart failure and hypertension; he had no prior abdominal surgery. Examination revealed a distended abdomen, right upper quadrant tenderness and an irreducible right inguinal hernia. Laboratory tests showed leukocytosis ($24.6\times10^9$/L), elevated C-reactive protein (311.8 mg/L) and acute kidney injury (creatinine 232 µmol/L; eGFR 24 mL/min/1.73 $m^2$). Radiography confirmed small bowel obstruction. Contrast-enhanced CT demonstrated an incarcerated inguinal hernia causing obstruction and noted a small fluid collection beside the hepatic flexure with gallbladder distension, initially deemed insignificant. Following resuscitation, antibiotics and anticoagulation reversal, laparotomy revealed a perforated gallbladder with subhepatic abscess, entrapping omentum and small bowel. The abscess was drained, subtotal cholecystectomy performed and hernia repaired without mesh. Postoperatively, he required vasopressors but recovered to ward level by day four and was discharged on day twelve.

**Discussion:** This case underscores the need for broad differential diagnosis and vigilant radiological review when dual pathology exists. Early recognition of gallbladder perforation may permit more focused intervention, reducing operative morbidity.

*1 Department of General Surgery, Victoria Hospital, Kirkcaldy, UK*

*2 Department of Clinical Surgery, The University of Edinburgh, Edinburgh, UK*

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## Introduction

Small bowel obstruction most commonly arises from postoperative adhesions, hernias or neoplasia. Obstruction secondary to gallbladder perforation is exceptionally rare and was first described by Hoffmann and von Kessel in 1958[1]. Such cases may mimic more typical causes and risk delayed diagnosis when dual pathology is present.

## Case Report

A seventy-eight-year-old man presented with twenty-four hours of diffuse abdominal pain, vomiting and distension following ten days of constipation. His medical history included atrial fibrillation managed with edoxaban, severe mitral regurgitation, pulmonary hypertension, right heart failure and hypertension. He had no prior abdominal surgery. On examination, his temperature was 36.8 °C, heart rate 83 bpm, blood pressure 108/42 mmHg,

respiratory rate 24 bpm and oxygen saturation 95% on room air. His abdomen was distended with right upper quadrant tenderness and an irreducible right inguinal hernia. Laboratory tests revealed a white cell count of 24.6 × $10^9$/L, C-reactive protein 311.8 mg/L and acute kidney injury (creatinine 232 µmol/L; urea 21.2 mmol/L; eGFR 24 mL/min/1.73 $m^2$).

Abdominal radiography confirmed small bowel obstruction (figure 1). Contrast-enhanced CT showed an incarcerated right inguinal hernia causing obstruction and noted a small fluid collection adjacent to the hepatic flexure with a distended gallbladder (figure 2). These latter findings were initially deemed clinically insignificant.

The patient received intravenous fluids, broad-spectrum antibiotics and prothrombin complex concentrate to reverse edoxaban. After discussion of perioperative mortality risks (40% according to the NELA calculator, 58.5% according to the NSQIP calculator) and consultation with family, surgery was undertaken. At laparotomy a perforated gallbladder with subhepatic and pericholecystic abscess was found. Inflamed omentum and small bowel adherent to the abscess wall caused mechanical obstruction. The abscess was drained, the small bowel freed without resection, and a subtotal cholecystectomy performed. A gallstone impacted at the cystic neck was removed, the cystic duct ligated, and the longstanding inguinal hernia reduced and repaired without mesh due to contamination. Post-operatively he required vasopressors in intensive care, returned to the ward on day four and was discharged on day twelve. Histology confirmed acute calculous cholecystitis with perforation.

## Discussion

This case highlights an uncommon mechanism of small bowel obstruction in which gallbladder perforation and abscess formation mimic a simple strangulated hernia. Similar presentations of gallstone ileus have been described in the literature, underscoring the need for broad differential diagnosis and careful radiological review[2]. Early recognition of gallbladder perforation allows for timely intervention, potentially reducing the extent of surgery and associated morbidity. In emergency settings, a high index of suspicion and prompt exploration remain essential when clinical findings and imaging diverge.

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