To leave no stone unturned: cholelithiasis and subsequent gallstone ileus

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DESCRIPTION

A 68-year-old man was admitted after a sudden collapse and a 5-day history of severe vomiting. On admission, he was hypotensive with a blood pressure of 70/60 mm Hg and had to be fluid resuscitated with 3 L of intravenous fluids via a femoral venous catheter. A nasogastric tube was inserted and 1600 mLs of brown vomitus aspirated. Venous blood gas showed a lactate of 5 mmol/L. The patient was in acute renal failure with urea of 30 mmol/L and creatinine of 224 µmol/L. On surgical review, he was not thought to be clinically obstructed and an abdominal radiograph showed some sentinel loops but otherwise did not reveal any obvious bowel dilation (**figure 1**). The patient had had a CT scan a month earlier when he had been staged for newly diagnosed prostate cancer; the scan had visualised a calcified circular opacity with a laminated appearance consistent with a gallstone in the gallbladder (**figure 2**). A repeat scan now revealed dilated fluid-filled jejunal loops, one of which contained the same opacity consistent with migration of the gallstone (**figure 3**).

The patient was sent to the operating theatre for a laparotomy, which revealed obstruction in the jejunum secondary to a calculus with proximal bowel dilation and distally collapsed bowel. There were no other calculi noted on careful inspection of the bowel. In addition, neither jejunal nor ileal diverticuli nor associated stercoliths were noted, thus excluding the similarly rare differential of

bowel obstruction secondary to stercolith expelled from small bowel diverticula. As the bowel appeared viable, it was deemed that there was no need for bowel resection and re-anastomosis. The patient underwent an open enterolithomy (**figure 4**). A gallstone measuring 4×3 cm was delivered via a longitudinal incision performed on the antimesenteric border of the small bowel, which was then closed in two layers in a transverse fashion to reduce risk of subsequent stricture formation. His post-operative course was uneventful (**figure 5**), and plans were made for an elective cholecystectomy at a later date.

Gallstone ileus is an uncommon surgical emergency accounting for 0.1–5% of all mechanical

Figure 2 Axial CT 1 month prior. There is a calcified circular opacity visualised in the gallbladder. There is stranding suggestive of chronic calculous cholecystitis giving unique insight into the pathogenesis of the disease.

Figure 1 Abdominal radiograph demonstrating some small bowel sentinel loops without obvious bowel dilation. There is a femoral venous catheter in situ.

Figure 3 Axial CT at emergency presentation. Dilated and fluid-filled jejunal loops, one of which contained the same calcified opacity consistent with migration of the gallstone leading to subsequent obstruction.

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Figure 4 Delivery of the gallstone via open enterolithomy.

Figure 5 Closure of the alimentary tract.

bowel obstructions.^{1 2} It has declining incidence, which has been suggested as secondary to the increasing frequency of laparoscopic cholecystectomies.¹ It can be associated with significant morbidity and mortality and the elderly are disproportionately affected.^{2 3} The image taken for this patient 1 month prior gives unique insight into the pathogenesis of the disease. An inflamed gallbladder causes adhesion formation between the gallbladder and the adjacent gastrointestinal tract. Large stones cause pressure necrosis of the gallbladder, with direct access to the gut.

Learning points

- ▶ Gallstone ileus is an uncommon surgical emergency. It can be associated with significant dehydration and electrolyte disturbances. It is difficult to diagnose clinically and is often aided by radiology.
- ▶ Gallstone ileus should be considered as a relevant albeit rare differential diagnosis in the elderly population, especially in those with a history of cholelithiasis.

This results in a biliary enteric fistula that allows passage of the gallstone, later resulting in obstruction.

Gallstone ileus is difficult to diagnose clinically and is often aided by radiological investigations. It is a serious condition and, although uncommon, requires prompt surgery, and is therefore of clinical interest. We recommend that 'no stone be left unturned' and that gallstone ileus should be considered as a relevant albeit rare differential diagnosis in the elderly population, especially in those with a history of cholelithiasis.

Contributors EY identified the case and drafted the manuscript. HK, TFC and EY revised it critically. All the authors reviewed and approved the final manuscript.

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