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Case Presentation

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Case Report: Complication Post Laparoscopic Cholecystectomy versus Malignancy

Stevenson S*, Mooney J and McArdle G

Craigavon Area Hospital, UK

***Corresponding author**: Sarah Stevenson, Craigavon Area Hospital, Lurgan, Northern Ireland, UK

Abstract

Here we present a young female patient with a retained gallstone 13 years post gallbladder operation performed abroad. Symptoms included right-sided abdominal pain, loss of appetite, intermittent fevers, and 5 kg weight loss. Similar patients reported in the literature also required multiple hospital admission. This case highlights diagnostic and management challenges of this uncommon/significant complication. Gallstone abscesses can occur at any time pre- or post-operation and should therefore always be considered in differential diagnosis. Surgeons must remain diligent and meticulous about retrieving spilled stones. This case raises an important question — when do we inform patients that malignancy is our leading differential?

Introduction

One in ten people in the United Kingdom are affected by gallstones [1,2]. Fortunately, complications such as retained stones remain rare. Around 20% of people with gallstones are diagnosed following symptom onset (biliary colic) or a related complication. The majorities are asymptomatic at the time of diagnosis but have a 2–4% annual risk of developing complications [3]. Complex or emergency gallbladder surgeries carry a higher risk of adverse outcomes. Globally, up to 20% of all emergency surgical admissions are due to gallstone-related complications [3], and laparoscopic cholecystectomy remains the gold standard treatment [4]. When a retained stone becomes symptomatic, it may require interventional drainage or antibiotics.

Case Presentation

Given the chronic nature of symptoms, malignancy was the top differential diagnosis. A CT of the abdomen and pelvis with intravenous contrast revealed a “grossly abnormal, locally infiltrating mass in the hepatorenal pouch of Morrison with central necrosis.” This was concerning for primary hepatic tumour, metastatic deposit, or locally aggressive abscess. Her white cell count was normal, but CRP 149. Intravenous antibiotics were

commenced, and MRI revealed appearances consistent with an abscess in Morrison's pouch. The MRI also identified a small calculus in the inferior portion, suggesting a dropped gallstone from the time of her cholecystectomy as the likely source of infection. Following a prolonged course of intravenous antibiotics, the patient made a good recovery and remained well at follow-up.

Although the initial clinical and radiological findings were concerning for malignancy, a wide differential diagnosis and thorough surgical history helped direct investigations and confirmed that a less likely cause — a 13-year delayed presentation of a retained gallstone — was, in fact, the true diagnosis.

Discussion

Laparoscopic cholecystectomy is indicated for patients suffering from:

- Acute or chronic cholecystitis
- Symptomatic cholelithiasis
- Biliary dyskinesia (hypo- or hyperfunction)
- Acalculous cholecystitis
- Gallstone pancreatitis
- Gallbladder masses or polyps

Contraindications include metastatic disease, unfitness for general anaesthetic, or coagulopathy [5-8]. In 2024, 61,220 laparoscopic and 5,440 open cholecystectomies were performed in the United Kingdom [9], exposing 66,660 patients to the potential risk of retained stones within one year. Retained gallstones are rare, with an incidence of 0.1–20%, and the time to presentation ranging from weeks to as long as 20 years [3]. Literature tends to focus on symptomatic retained stones, suggesting a population of asymptomatic retained stones may exist. Perhaps such cases would only become apparent if the patient became immunocompromised — raising the question of whether screening for immunodeficiency might be warranted in unusual cases. A retained stone may present asymptomatically or with pain, wound infection, abscess formation, or even fistula development. Many complications occur because retained stones form a nidus for infection, which can be local or distant. Rarely, fragments of gallstones have been documented within sputum after the formation of a biliary-bronchial fistula [6]. Fluid collections after laparoscopic cholecystectomy occur in up to 27% of patients [5], most often in Morrison's pouch — the hepatorenal recess between the liver and right kidney — which is a gravity-dependent area where stones may settle. Less common sites include port sites or surgical wounds [7].

Risk factors for complications from dropped stones include acute cholecystitis, a high stone burden (>15 stones), large stones (>1.5 cm), pigment stones, comorbidities, and male sex [7]. The average gallstone measures around 0.5 cm [1]. Studies comparing cholesterol and pigment stones have found a higher incidence of positive bile cultures in brown pigment stones, which tend to form in infected bile ducts, possibly explaining their association with abscess formation [10]. The most common radiological appearance of spilled gallstones is a fluid collection containing multiple calcified stones [7]. CT is the most common initial imaging modality. MRI is often superior for identifying subtle differences in tissue density and for delineating soft tissue infection. Treatment options include Interventional Radiology (IR) drainage, laparoscopic washout with stone retrieval, or open surgery. Current management trends favour IR for initial sepsis control, reserving surgical intervention for failed cases. Lithotripsy has been described for retained stones too large for simple drainage, with the resulting fragments expelled through the drain [11].

A Multidisciplinary Team (MDT) approach offers optimal outcomes. Endoscopic Retrograde Cholangiopancreatography (ERCP) with cholangioscopy and an electrohydraulic lithotripsy probe can fragment the stone, followed by wire-guided basket retrieval of fragments [12]. Interventional radiology provides a bimodal approach — drainage and catheter placement — though catheter size must be carefully chosen to accommodate varying stone dimensions [7]. Without adequate source control and stone removal, recurrence remains likely. Prevention remains best. Intraoperative vigilance, including clear visualization with a 30-degree camera, an experienced assistant, and timely response to bile spillage, can significantly reduce risk. When stones are spilled, every effort should be made to retrieve them. Additional ports, adequate irrigation, and thorough washout are essential, as many stones float. Interestingly, one study found a positive correlation between iodine concentration and gallstone buoyancy, explaining why some stones may remain suspended during lavage. Using laparoscopic collection bags and ensuring they are securely closed before removal, further minimizes risk.

Conclusion

In conclusion, retained gallstones may be more common than we assume and should be considered in any patient presenting with pain at any stage post-cholecystectomy. Even if CT imaging is inconclusive, MRI should be considered to better characterize soft tissue abnormalities. This complication should also be discussed during the consent process prior to surgery. Intraoperatively, meticulous technique, appropriate containment, and thorough inspection reduce the likelihood of stone spillage. Should a retained gallstone occur, early recognition and a multidisciplinary approach are essential for optimal management and to prevent recurrence.

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