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Gallstone-related abdominal cystic mass presenting 6 years after laparoscopic cholecystectomy: A case report



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ABSTRACT

INTRODUCTION: Although gallbladder perforation and gallstones spillage are common complications during laparoscopic cholecystectomy (LC), clinically significant complications resulting from stones left in the peritoneum are extremely uncommon. We report a rare case of spilled gallstones complication with a late and uncharacteristic presentation.

PRESENTATION OF THE CASE: A 44-year-old Caucasian female presented with a complaint of a mass in the right upper quadrant associated with a cramping pain for the last 6 months. Her past surgical history included a laparoscopic cholecystectomy performed six years ago. Abdominal computed tomography demonstrated an intra-abdominal cystic mass. On open exploration, a cystic mass adhered to the abdominal wall was excised containing two gallstones. The patient tolerated the procedure well and had uneventful postoperative recovery.

DISCUSSION: Although unretrieved gallstones are considered harmless, serious complications can occur early or late. The most frequent complication is the formation of abscesses in different locations.

CONCLUSION: The diagnosis of gallstone abscess after years of LC is usually a diagnostic challenge. Obtaining a comprehensive past surgical history still plays an important role in the assessment of patients presenting with unusual findings.

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1. Introduction

Gallstone spillage during laparoscopic cholecystectomy (LC) is common. This problem occurs less frequently in open surgery and the spilled stones are easy to retrieve. Fortunately, clinically significant complications resulting from stones left in the peritoneum are extremely uncommon [1].

The literature contains a number of reports on gallstones spillage complications after LC. However, there is paucity of reports outlining the ambiguous presentation years after LC. We report a rare case of spilled gallstones complication presenting six years after laparoscopic cholecystectomy with uncharacteristic clinical presentation and radiologic features.

2. Presentation of case

A 44-year-old Caucasian female presented to the outpatient office with a complaint of a mass in the right upper quadrant associated with a cramping pain for the last 6 months. She also reported

having nausea without vomiting, abdominal fullness, and early satiety. She denied any fever, chills or diarrhea/constipation.

She had no significant past medical history or smoking nor was she on any medication. However, her past surgical history included a laparoscopic cholecystectomy performed six years ago. Intraoperative procedural details of the surgery were not available. Postoperatively, patient stated that pus had been oozing from her umbilicus for 1 month after the procedure and resolved spontaneously with no medical intervention.

On examination, the patient was afebrile. The abdomen was soft and nondistended; the surgical port-site scars were completely healed. A large firm tender mobile mass was found on the right upper quadrant. The overlying skin was completely normal.

Laboratory workup revealed a white blood cell count of 8100/mm³. All other laboratory findings including liver function tests, renal function tests, and pancreatic enzymes (amylase and lipase) were within normal limits.

Abdominal computed tomography (CT) demonstrated an 8 × 11 cm right paraumbilical intra-abdominal cystic mass extending onto the abdominal wall. The mass had low density, homogenous fluid content, with thin enhancing wall, no intracystic enhancing nodules, calcifications or fatty component. (Fig. 1a–c).

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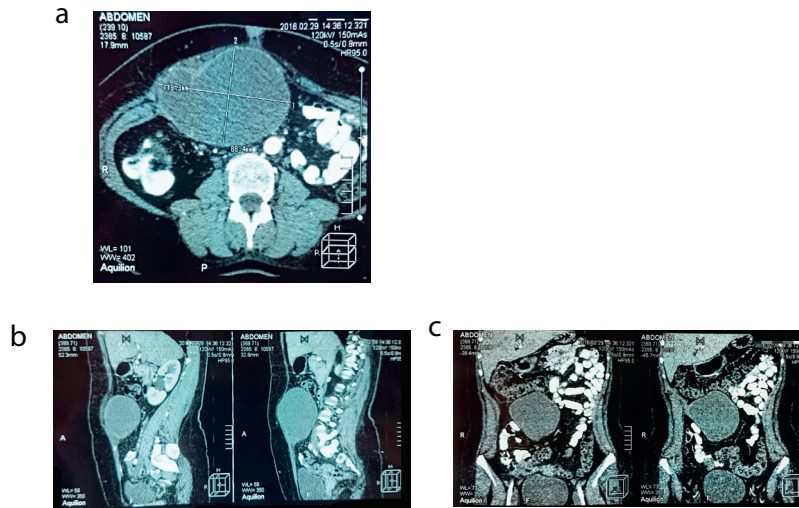


Fig. 1. (a: Axial plane, b: sagittal plane, c: coronal plane): Abdominal (CT) revealed a 8 × 11 cm right paraumbilical intraabdominal cystic mass, no calcified density was found.



Fig. 2. The excised mass, with the gallstones inside it.

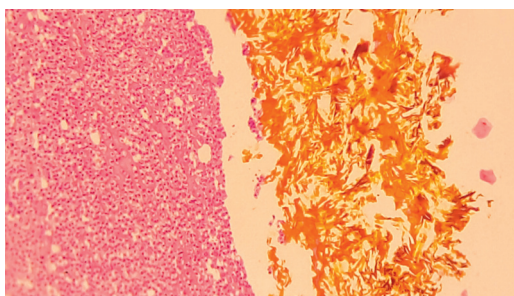


Fig. 3. Chronic inflammatory cells with cholesterol crystals of gallstone debris.

Exploratory laparotomy revealed a cystic mass, which was adhered to the fascia of the rectus abdominal muscle, containing a yellow turbid fluid with two stones. (Fig. 2)

The fluid culture showed no growth of bacteria after 48 h.

The extracted stones were 2 cm in diameter, polygonal brown–yellow cholesterol gallstones. Histopathology revealed fibrous cystic wall lined by thin fibrovascular granulation tissue. The wall was massively infiltrated by chronic inflammatory cells (xanthoma cells, giant cells surrounding cholesterol crystals and large number of plasma cells with foci micro abscesses) (Fig. 3). The patient tolerated the procedure well and had uneventful postoperative recovery.

3. Discussion

With shorter hospital stays and greater patient satisfaction, laparoscopic cholecystectomy (LC) has become the treatment of choice for patients with gallbladder disease [2]. However, this procedure brings increased inherent risks and complications, such as biliary tract injuries and intraoperative spillage of stones, when compared with the conventional open technique [1,2]. The spillage of bile and gallstones generally occurs because of gallbladder perforation during dissection (42%–75%), traction (15%–51%), or extraction of the gallbladder through a trocar opening that is too narrow (5%–10%) [3].

Although surgeon’s experience in laparoscopic techniques plays a major role in reducing the risk of gallbladder perforation, several predisposing factors have been related to an increased risk for gallbladder perforation such as: acutely inflamed gallbladder, male sex, advanced age, obesity, and the presence of adhesions [1,2]. In our case, the patient had none of the predisposing factors. This highlights the importance of surgeon’s experience in preventing such complication in LC.

Removal of the stones can be a difficult process and is often incomplete or avoided altogether [2]. Thus, stones are left in the peritoneal cavity at the end of 13%–32% of laparoscopic cholecystectomies [4]. Although these stones can cause no harm and remain benign, Complications that result from these stones occur in 0.08%–0.3% of patients [1]. Predisposing factors for developing complications after gallstones spillage: older age, male sex, acute cholecystitis, spillage of pigment stones, number of stones (>15) or size of the stone ($\varnothing > 1.5$ cm), and perihepatic localization of lost stones [3]. In our case, 2-cm-sized cholesterol gallstones predisposed the abscess formation, revealing that cholesterol gallstones are not completely innocuous [4].

The most frequent complication of unretrieved gallstones is the formation of abscesses in different locations [1,3]. Common locations of the abscess are in the abdominal wall, as occurred in our case, followed by intra-abdominal cavity usually in the sub-hepatic or retroperitoneal inferior to sub-hepatic space [5,6]. The average time from laparoscopic cholecystectomy to the appearance of the first symptoms is 4 months whereas it could be as long as 20 years [1,3].

The diagnosis of gallstone abscess after years is usually not easy to make upon patient presentation [6]. In our case, the patient’s complaint of abdominal mass without fever or chills, remote surgical history, and normal WBCs counts made the suspicion of abscess

as a late complication of the previous LC unlikely. In addition to, the spilled gallstones were not evident on radiologic imaging due to their cholesterol content, which made the diagnosis confused with simple abscess, actinomycosis, hydatid cyst, or neoplastic lesion.

Abscess formation secondary to spilled gallstones mimicking a cystic mass without signs of an abscess on the CT is rare. Physicians involved in the patient care must have a high index of suspicion for gallstone abscess as a complication not only limited to the months following surgery but also including the subsequent years. Surgical history along with imaging studies such as the abdominal ultrasound and CT scan, combine to make the diagnosis of gallstone abscess possible [3,6].

Considering the importance of the rare but possible complications of spilled gallstones, every effort should be made to retrieve the lost stones. Any retained stones should be mentioned in the operating report for close follow-up and guide the diagnosis of any subsequent complication.

4. Conclusion

Gallstones abscess formation due to gallstones spillage during LC is a rare delayed complication.

In our case, the remote history of laparoscopic cholecystectomy 6 years prior, along with uncharacteristic symptoms and radiologic features made the diagnosis difficult.

This case highlights that obtaining a comprehensive past surgical history still plays an important role in the assessment plan in patients presenting with unusual findings. Surgeons should make their best efforts to prevent gallbladder perforation, properly manage gallstones spillage when occurs, and report any lost gallstones during the operation. Finally, suspension of spilled gallstones complication is the key for diagnosis.

Conflicts of interest

There is none.

Sources of funding

There are no sources of funding.

Ethical approval

We have the patient ethical approval, no more ethical approval is required. And the work described has not been published previously.

Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Authors contribution

Rama Faour: design of study, data collection, data interpretation and analysis, drafting, revision, approval of final manuscript.

Dana Sultan: design of study, data collection, data interpretation and analysis, drafting, revision, approval of final manuscript.

Rand Houry: data collection, data interpretation and analysis, drafting, revision, approval of final manuscript.

Mhamad Faour: revising critically, data analysis, approval of final manuscript.

Ahmad Ghazal: the Supervisor, patient care, revising critically, approval of final manuscript.

Registration of research studies

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The present work has been reported in line with the SCARE criteria [7].

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