Late Sequelae Of Unretrieved Spilled Gallstones During Laparoscopic Cholecystectomy
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Citation

Abstract
Laparoscopic cholecystectomy (LC) has evolved to become the mainstay of management of symptomatic cholelithiasis since it was first performed in 1987 by Phillipe Mouret 1. Peri-operative complications related to the procedure were recognized early on, eg. bile duct injury and bile leakage, but late complications of LC are not well addressed 2. The following are case reports highlighting potential complications of unretrieved spilled gallstones.

CASE REPORT 1
A 77-year-old woman presented for further investigation of 6 week history of increasing right flank/loin pain on background of having had an uneventful LC performed 3 years prior. She described night sweats, loss of appetite, 2kg weight loss and noticed a lump in her right flank which doubled in size over a week prior to presentation.

CT abdomen revealed a 11.5 x 10.5 x 11 cm multiloculated dumbbell shaped collection with rim enhancement involving the posterolateral aspect of the abdominal wall, superficial and deep to the musculature.

A diagnosis of probable gallstone abscess was made. The patient subsequently underwent a small flank incision, drainage and washout of the abscess. Intra-operatively, a deep cavity was found extending superiorly from subhepatic space to the right iliac fossa inferiorly. The communication between superficial and deep component was via the Calot’s triangle. It contained copious pus and multiple gallstones. Escherichia coli was isolated from culture.

Two drains were inserted and the patient was admitted to the High Dependency Unit post-procedure for observation. Her post-op course was complicated by dislodgement of the drains, requiring reinsertion. A sinogram performed one week later revealed a contained abscess cavity.

The patient was discharged and followed-up in the outpatient clinic with no further complications. The drains were serially ‘shortened’ until complete healing occurred.

CASE REPORT 2
A 75-year-old lady underwent LC 3 years ago with the initial operation described as ‘uneventful’ and no complications were documented peri-operatively. Two months later, she started experiencing non-specific abdominal pain associated with bloating, lethargy and generalized malaise. Gastroscopy and colonoscopy performed were essentially normal apart from diverticulosis of the sigmoid colon.

One year after the onset of the initial symptoms, she developed swinging fevers and ultrasound of the abdomen was performed, revealing two fluid collections in the anterior, upper abdomen. The collections contained some internal echoes and were diagnosed to represent organizing subcutaneous haematomas. She was prescribed a prolonged course of oral antibiotic and had two ultrasound guided drainage of her collections. However, her collections refilled rapidly after each drainage, which prompted surgical referral. Enterobacter cloacae was isolated from the fluid drained.

A CT scan was performed and the cause of the collections was found to be unretrieved spilled gallstones (See figure 1,2). She subsequently underwent incision and drainage of the lesions. Copious pus was drained and two gallstones were retrieved from each cavity (See figures 3,4,5,6,7). She made an uneventful recovery.
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**Figure 1**
Figure 1: CT scan showing abscess behind the right rectus sheath containing radio-opaque mass.

![Figure 1](image1)

**Figure 2**
Figure 2: CT scan showing a similar abscess in the left side.

![Figure 2](image2)

**Figure 3**
Figure 3: Pre-operative ultrasound helped to determine the sites of abdominal wall abscesses and positions of the stones.

![Figure 3](image3)

**Figure 4**
Figure 4: Copious pus was found upon incision of the abdominal wall abscesses.

![Figure 4](image4)
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**Figure 5**
Figure 5: Two gallstones were retrieved from the right sided abscess.

**Figure 6**
Figure 6: Similarly gallstones were retrieved from the left sided abscess.

**Figure 7**
Figure 7: Two drains were inserted intra-operatively.

**DISCUSSION**

The cases highlight the myriad presentations of unretrieved spilled gallstones and the need to consider a history of cholecystectomy as relevant to unusual presentation with deep seated abdominal abscess. In each case the long time interval after surgery led to initial difficult diagnosis for the treating doctor. In each case a ‘minimally invasive’ approach was successfully used.

Iatrogenic gall bladder perforation (GBP) occurs in about 20% (16 – 36%) of cases and gallstone spillage is quoted at 6 – 9%. Literature review of MEDLINE revealed several papers and multiple case reports on the outcome of unretrieved spilled gallstones. Intraabdominal abscess formation was by far the most common sequelae, followed by abdominal wall abscess. On occasion, unretrieved gallstones may cause inflammatory masses and granuloma formation, empyema, fistula and cutaneous sinuses. Apart from the common presentation of pain, swelling, fever and general malaise, they could also present with small bowel obstruction, pyogenic groin hernia, chronic pelvic pain and lithoptysis. Care must be taken to avoid GBP. Should it occur, utmost effort should be made to retrieve all the stones spilled.

In writing up the case reports, the paucity of documentation regarding GBP was evident and we would like to reiterate that it be routinely noted, in particular with regards to bile / stone spillage, efforts employed to retrieve the stones.

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