Case Report

Multilocular Flank Abscess Due to Stone Migration Following Laparoscopic Cholecystectomy with Spillage of Gallstones

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ABSTRACT

We report a case of a patient who presented with a large flank abscess 18 months after laparoscopic cholecystectomy. The patient underwent repeated percutaneous drainage but the abscess recurred. Further evaluation with ultrasound revealed subcutaneous tracks from the flank leading to the abdominal cavity and suspected stones in one of the tracks. Laparoscopy revealed dense adhesions at the level of the right gutter leading to a retroperitoneal track heading over to the flank. The tracks were partially opened, debrided, and two gallstones were retrieved from one of the retroperitoneal tracks. The patient’s recovery was uneventful. This case demonstrates the potential migration of dropped gallstones to extraperitoneal sites leading to infectious complications. Careful dissection of the gallbladder with an attempt not to rupture it is important in order to prevent this complication. Once rupture does occur, efforts should be made to retrieve dropped stones from the peritoneal cavity. Patients presenting with intra- or extraperitoneal abscesses following laparoscopic cholecystectomy and no obvious source of infection should be evaluated for dropped stones.

INTRODUCTION

LAPAROSCOPIC CHOLECYSTECTOMY is the treatment of choice for symptomatic cholelithiasis.1,2 The benefits of the laparoscopic approach are well known.3 Nevertheless, there are several complications which may be more common in a laparoscopic approach than the open approach. As the serious complication of common bile duct (CBD) injury has decreased with growing awareness and experience, other less appreciated complications with late potential consequences have emerged. These complications are mostly related to spillage of bile and stones during the procedure.

CASE REPORT

A 36-year-old male was admitted with a painful swelling over his right flank. His medical history was significant only for laparoscopic cholecystectomy performed 18 months previously at another hospital. Physical examination revealed a huge fluctuant mass over his right flank. Laboratory results were in the normal range. Computed tomography (CT) scan of the abdomen revealed a multilocular collection beginning from the lower right abdominal wall, extending toward the abdominal cavity and involving the iliopsoas muscle. The largest area had a diameter of 17 cm (Fig. 1). One liter of pus was percutaneously drained and tested positive for...
*Pseudomonas* cultures. Following the drainage and antibiotic therapy the abscess resolved and the patient was discharged. Colonoscopy was performed and colonic pathology was ruled out.

In the following four months the patient was admitted three more times for percutaneous drainage of recurrent abscesses in the same area. The etiology was not clear. Following the second drainage, the patient was scheduled to undergo open surgery in an attempt to find an infective source. While waiting for the planned operation, two more episodes of abscesses occurred.

In a search for possible sources of the recurrent infections, a review of the cholecystectomy operative report revealed that some gallstones were dropped from the gallbladder but not all were retrieved.

An ultrasound performed following the last drainage demonstrated two subcutaneous tracks in the flank merging to a common track leading to the right side of the abdominal cavity (Fig. 2). Stones were also suspected in a small pocket of one of the tracks and the tracks were marked on the skin (Fig. 3).

The patient underwent a combined surgery with laparoscopy and opening of the flank tracks. Laparoscopy revealed dense adhesions at the level of the right gutter. Adhesiolysis was performed with some mobilization of the right colon and omentum that was attached to the area. No intra-abdominal stones were found; however, an opening into one of the retroperitoneal tracks was found under the guidance of a surgical probe that was simultaneously inserted through a flank incision. The flank tracks

**FIG. 1.** Computed tomograph showing a multilocular collection. **A:** The abscess starts in the lower right abdominal wall. **B:** The abscess extends toward the abdominal cavity and involves the iliopsoas muscle.

**FIG. 2.** **A:** Two subcutaneous tracks in the flank merging to a common track leading to the abdominal cavity in the right abdomen. **B:** Suspected stones in a small pocket of one of the tracks.
were opened and debrided through two small flank inci-
sions and two small gallstones were retrieved from one of the tracks (Fig. 4). The patient had an uneventful re-
covery and has had no recurrent infections in a 20-month follow-up.

**DISCUSSION**

Gallbladder perforation during laparoscopic cholecys-
tectomy is a relatively common event, with a reported rate as high as 40% in several series.4–6 This can result in spillage of gallstones into the peritoneal cavity.7,8 Higher rates of spillage are associated with surgery in pa-
tients who are male, elderly, or obese, or in the presence of adhesions or acutely inflamed gallbladders. Although the natural history of dropped stones is not well defined, the potential for complications does exist. These complica-
tions are related to infections that may present shortly after surgery or up to 20 years later.9,10 These compli-
cations usually occur when the spilled stones are pigmen-
t stones, which usually contain bacteria.11

The typical presentation is related to local or distant abscess.6,10 Most stones cause intraperitoneal abscesses but, in rare cases, such as the one presented here, they can migrate to the retroperitoneum and even to the pleural cavity.12

Simple drainage is not sufficient unless the cause of in-
f ection is removed.13 In our case, the abscess drainage helped only temporarily and final recovery was achieved only after we realized that dropped gallstones were re-
sponsible for the recurrent infections and they were re-
moved.3,14 Physicians should have a high index of suspi-
cion in patients who present with intra- or extraperitoneal abscesses of unknown etiology and a history of laparo-
scopic cholecystectomy.

CT scan can define the extent and exact location of the abscess and can guide the initial drainage, while ultra-
sound is an excellent tool to demonstrate the presence and location of gallstones and the tracks created by their migration. In our case the stones and tracks were pre-
cisely located by preoperative ultrasound that helped in the preoperative planning.

In conclusion, careful dissection of the gallbladder during laparoscopic cholecystectomy, with an attempt not to rupture it, is important in order to prevent these compli-
cations. All efforts should be made to retrieve dropped stones once rupture and spillage do occur.

When evaluating patients with intra- or extraperitoneal abscesses with no apparent etiology and a history of laparo-
scopic cholecystectomy, surgeons should consider and evaluate the possibility of dropped stones.

FIG. 3. Drawing the subcutaneous tracks on the patient’s skin prior to surgery.

FIG. 4. Opening the flank tracks. A: The two incisions over the marked tracks. B: Two small gallstones retrieved from one of the tracks.
REFERENCES


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