CASE REPORT

Abdominal Wall Abscess Following Laparoscopic Cholecystectomy: An Unusual Late Complication of Lost Gallstones

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ABSTRACT

Laparoscopic cholecystectomy (LC) is associated with a significant risk of gallbladder perforation with spillage of bile and stones into the peritoneal cavity. The retrieval of the spilled stones is not always possible by laparoscopic technique. Majority of these cases do not have any problem in future but sometimes the lost stones lead to serious complications. The authors present a case of lost gallstones, which resulted into an abdominal wall abscess and discharging sinus 9 years after LC. This late presentation is among the very few reports after LC. Risk factors for gallbladder perforation, various techniques to avoid spillage of stones, possible complications and their management is discussed.

Key words: *Laparoscopic cholecystectomy. Stone spillage. Lost gallstones. Abdominal wall abscess.*

INTRODUCTION

Laparoscopic cholecystectomy (LC) has been the gold standard treatment in the management of symptomatic cholelithiasis for over 15 years.[1] Gallbladder perforation (10-40%) and stone spillage (6-30%) are the two most common complications encountered during dissection (75%) and removal (25%) of gallbladder in LC.[2-4] The retrieval of all dropped stones is sometime not possible with laparoscopic techniques. During the early period, the fate of these lost stones was considered benign without serious consequences. However, there has been increasing reports of infectious complications due to un-retrieved stones after LC which require re-operation.[1-4] Such complications mask not only the advantages of minimal access surgery but also increase the overall cost.

The authors present a case of lost gallstones in peritoneal cavity, which resulted in an abdominal wall abscess and a discharging sinus 9 years after LC.

CASE REPORT

A 33-year old diabetic woman was admitted to the Department of General Surgery, King Saud University Unit at King Saud Medical Complex, Riyadh, KSA, with intermittent attacks of pain in right hypochondrium (RHC), nausea and vomiting for the last 7 months. On examination she was afebrile, not jaundiced with positive Murphy's sign. White cell count was 12000/microlitre. Ultrasonography (USG) revealed thick wall gallbladder with multiple stones.

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Received December 08, 2009; accepted May 19, 2010.

She underwent LC during same hospital admission by a consultant general surgeon. According to the operative notes, gallbladder was thick walled, inflamed and edematous with dense surrounding adhesions. It was perforated during dissection with spillage of stones in peritoneal cavity. The perforation was closed with endo-clip. Suction and irrigation with normal saline was done and supposedly almost all visible spilled stones in operative field were retrieved. The gallbladder, which was full of stones was removed through the epigastric port. Endo-bag was not used for retrieval of specimen.

Postoperatively, patient developed abdominal pain, nausea, vomiting and fever (38^{o}C). Ultrasound abdomen revealed no collection. Her symptoms settled down and she was discharged home with advice of follow-up USG and liver function test (LFT). Histopathology revealed chronic calcular cholecystitis. Follow-up USG and LFT were normal and she was discharged from the clinic.

Nine years later, she developed a painful swelling in RHC extending to mid-axillary line which was diagnosed to be an abscess. She underwent incision drainage of abscess with retrieval of 6 stones from the abscess cavity. The incision was made in anterior axillary line, but away from the site of lateral port. Stones retrieved from the abscess cavity were identical to those of gallstones, which the patient had preserved in a glass bottle (Figure 1). The wound healed with frequent dressing but a small discharging sinus on the back of RHC persisted for 2 months and eventually healed. USG and computed tomography (CT) scan revealed no residual collection.

One year later, (10 years after LC) she was hospitalized again with fever and a huge tender swelling with surrounding cellulitis in right flank. CT scan revealed a multi-loculated fluid collection in antero-lateral abdominal wall of right lumber region extending to the retro-peritoneum (Figure 2). Incision drainage was carried out.

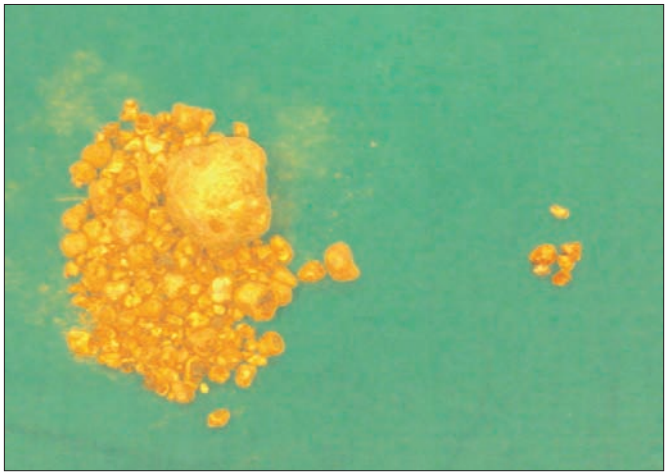

Figure 1: Stones collected during L C. (Left) and 6 identical stones delivered from abdominal wall abscess (right).

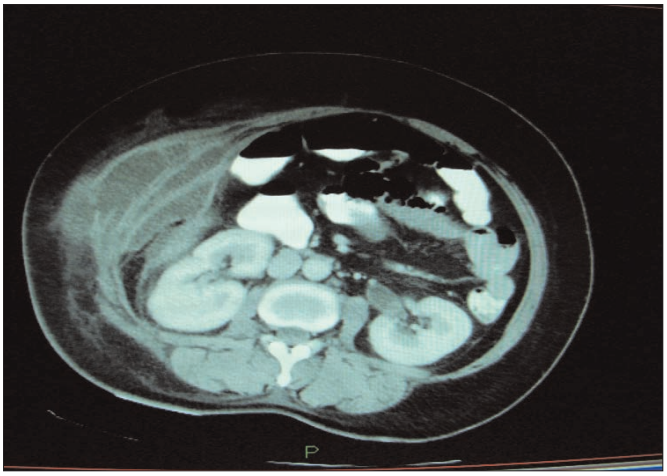

Figure 2: CT Scan abdomen showing multi-loculated abdominal wall abscess.

After 3 weeks of drainage and dressing, secondary closure of the wound was performed. The wound completely healed and the stitches were removed on 10th day. She was well and asymptomatic at 3 months follow-up.

DISCUSSION

LC is preferred over open technique because of less postoperative pain, short hospital stay, early return to work and better cosmetic results. However, gallbladder perforation (10-40%) and stone spillage (6-30%) are the most frequently encountered complications during LC.[1-4] It has certain limitations for the clearance of all spilled stones when compared with the open procedure. In majority of the cases, these lost stones usually cause no problem, but 0.08-0.3% of patients developed complications.[2-4] The most common complication of spilled intra-peritoneal gallstones is abscess formation accounting for 60% of complications.[2] The other rare complications include small bowel obstruction, fistula formations, cholelithoptysis, pleural empyema, stones in hernia sac, ovary, and tubalithiasis.[1]

The significant risk factors for these complications are acute cholecystitis, spillage of pigmented stones, perihepatic localization of spilled stones, multiple stones (> 15) or size (> 1.5 cm) and old age.[2,4-6] This patient had acute cholecystitis, pigment stones, and > 15 stones. Brockmann stated that the gallstones around the liver, especially where they are sandwiched between the liver surface and diaphragm may escape from the intra-abdominal clearing mechanism provided by greater omentum and intestinal immune system.[2]

Various studies have reviewed the risk factors for iatrogenic gallbladder perforation during LC.[7,8] These risk factors include surgeon experience, acute cholecystitis, adhesions because of previous abdominal operation, obesity, old age and male gender. In addition to acute cholecystitis, extensive associated adhesions was another factor for gallbladder perforation in this case. Careful dissection is of utmost importance to prevent the risk of gallbladder perforation.

If perforation occurs, the correct use of suction devices and an endo-bag is necessary to minimize the bile and gallstones spillage. If possible the hole in gallbladder should be closed either by grasp forceps or by an endoclip. This technique was practiced in this case. After the removal of gallbladder, abdominal cavity should be thoroughly irrigated, without spreading gallstones to difficult accessible sites. All reasonable efforts should be made to remove spilled gallstones; nevertheless conversion to open surgery is not mandatory as the reported complication rate of lost stones is less than 1%.[2,4,9]

The appropriate treatment for abdominal wall abscess is the drainage of abscess cavity and removal of all necrotic tissue with all missed stones by open technique. Percutaneous drainage is usually unsuccessful and associated with high recurrence. Documentation in medical reports and patient information about lost stones is an important issue, which can alert the physicians in future about the subsequent problem due to lost stones.

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