

Perihepatic and abdominal wall abscess mimicking hydatid cyst: A late complication of residual gallbladder stones

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Abstract

Intraoperative perforation of the gallbladder and the related residual intraabdominal gallbladder stone presence in cholelithiasis procedures are more commonly seen problems in laparoscopic cholecystectomy than those of open cholecystectomy procedures. Residual intraabdominal stones, though rare, can be encountered in early or late complications that can lead to diagnostic challenges and serious morbidity. A 44-year-old female patient presented with complaints of abdominal pain and swelling on her abdominal wall for the last 6 months. The patient had been in follow-up with hydatid cyst pre-diagnosis following abdominal ultrasonography performed at an external center. The patient's medical history revealed that she had undergone laparoscopic cholecystectomy surgery due to cholelithiasis 1.5 years before. Her abdominal computed tomography performed at our hospital showed abscess formations suggested to have been formed due to gallbladder stones. The patient, whose abscess was drained, and stones were extracted laparoscopically, was discharged on the second postoperative day. Residual intraabdominal gallbladder stones can lead to serious complications and misdiagnoses even years later. Utmost attention should be paid to prevent all these and not to perforate the gallbladder during surgery, while ultimate patience and effort should be put in to remove all the gallbladder stones if they are spilled.

Keywords: hydatid cyst, cholecystectomy, gallbladder, gallbladder stone

1. Introduction

Laparoscopic cholecystectomy surgery is considered the gold standard for the surgical treatment of symptomatic gall bladder stones. This procedure is quite safe with low morbidity and mortality rates. Yet complications like spillage of gallbladder stones into the abdominal cavity due to the perforation of the gallbladder during the surgery are more commonly seen in laparoscopy than in open cholecystectomy (1). It has been reported that gallbladder stones spilled into the abdominal cavity in 7% of laparoscopic cholecystectomy procedures while 16-50% of these stones could not be extracted (2). Nevertheless, complications brought about by such irremovable stones are rare and they are seen merely in 1.4% of the cases (3).

The aim of this study, therefore, was to present the case of a patient with abdominal wall and perihepatic abscess, which developed due to residual intraabdominal stones during laparoscopic cholecystectomy procedure, who was followed-up with hydatid cyst prediagnosis along with literature review.

2. Case Report

A 44-year-old female patient presented with complaints of pain on the upper right quadrant of the abdomen for the last six months. The patient's abdominal ultrasonography performed at an external center had shown a semisolid

formation with calcified areas neighboring on the segment 6 of the liver. The patient had been evaluated to have uncomplicated calcified hydatid cyst and taken into a follow-up program. The patient, whose abdominal pain had deteriorated within the last month with palpable swelling in the right subcostal area, presented to our clinic. The patient's physical examination showed that she was obese. A sensitive, red swelling of about 3x4 cm in size with partially soft consistency was identified in the right subcostal area. Her laboratory results were within normal limits while the result of her indirect hemagglutination test for Echinococcus was negative.

The patient's medical history revealed that she had undergone laparoscopic cholecystectomy because of acute calculous cholecystitis. Her abdominal computed tomography showed an image likely of abscess that was 66x37 mm in size with multiple stones, the largest of which was 23 mm, in the right subhepatic area. Moreover, there was a calcified focus of 21 mm in size on the upper right quadrant associated with the abdominal wall likely to be consistent with gallbladder stone (Fig. 1a-1d). It was suggested that such images belonged to gallbladder stones that dropped into the abdominal cavity during the surgery. The patient was thus taken into surgery. Laparoscopic exploration revealed an

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abscess pouch neighboring hepatic segment 6 and on the abdominal wall. The abscesses were drained, and the stones were extracted laparoscopically (Fig. 2). The patient who had no postoperative problems was discharged on the second day.

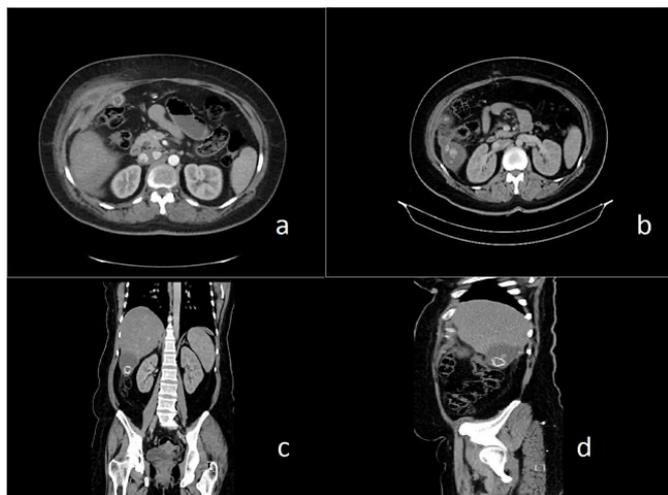


Fig. 1. Computed tomography images of abscess on the abdominal wall in transverse (1a), subhepatic abscess in transverse (1b), coronal (1c) and sagittal (1d) planes

3. Discussion

Intraoperative perforation of the gallbladder and the related residual intraabdominal gallbladder stone presence in cholelithiasis procedures are more commonly seen problems in laparoscopic cholecystectomy than those of open cholecystectomy procedures. Residual intraabdominal stones, though rare, can be encountered in early or late complications that can lead to diagnostic challenges and serious morbidity (1). Studies have reported that such factors as the inexperience of the surgeon, male sex, old age, acute inflammation of the gallbladder; tense, fragile, edematous, gangrenous gallbladder wall, presence of multiple stones within the gallbladder, large adipose tissue around the cystic duct, overweight patients, and thick abdominal wall increased the risk of perforation during laparoscopic cholecystectomy (4-6). Our case had risk factors like obesity and acute inflammation of the gallbladder as well. Gallbladder perforation often occurs during the traction of the gallbladder, dissection of the gallbladder from the hepatic bed or during the removal of the gallbladder from the trocar-site (6).

Researchers have recommended that surgeons be gentler and more careful during traction and dissection with gallbladder removed outside the abdomen in an endobag particularly in such patients with risk factors. It has also been stated that if gallbladder stones that spilled into the abdomen could not be retrieved despite necessary efforts by laparoscopy, this situation did not require conversion to open cholecystectomy, but these should be well documented, the patient should be informed and taken into a long-term follow-up program (5). In our case report the patient had neither been informed after her first surgery nor any documentation had been recorded.

The results of studies have revealed that gallbladder



Fig. 2. Extracted residual gallbladder stone images

spillage occurred in 7% of laparoscopic cholecystectomy procedures, while 16-50% of these could not be retrieved and 1.4% of these residual stones led to complications (2, 3). Intraabdominal abscess, the most seen complication, is usually localized in the subhepatic or retroperitoneal sites (6). Other than abscess formations seen in these sites, rarer complications like fistulization, abscess formations including residual gallbladder stones in such places as the hernia sac, ovaries or fallopian tubes, hip joints and abdominal wall have been reported as well (6, 7). In our case report the patient also had gallbladder stone-related subhepatic and abdominal wall abscess.

The exact mechanism of the ways in which gallbladder stones caused abscess has yet to be explained. Studies have shown that pigmented stones were more likely to cause abscess than cholesterol stones. Microorganisms like *E. coli*, *Klebsiella*, *Pseudomonas*, and *Enterococcus* that cause acute cholecystitis are identified in abscess cultures (4). Although postoperative abscess formation is usually seen within two years, there are also patients in literature who were reported to have been diagnosed a long time after the fact like 20 years (4, 8). Abscess was seen in our patient 1.5 years after she had surgery.

Patients with complications due to retained gallbladder stones in the abdomen often present with complaints like abdominal pain, fever, loss of appetite, nausea, and weight loss although these may vary according to the localization of the abscess (4). Further, quite rare gallbladder stone cases have also been reported that presented with cholelithoptysis related to abscess migration up the bronchial tree through the erosion it formed in the diaphragm (9, 10). Our patient, too, presented with complaints of abdominal pain and swelling on the abdominal wall.

Identification of gallbladder stones within the abscess through abdominal computed tomography or magnetic resonance imaging is important for diagnosis (6). While pigmented stones are readily distinguishable due to their high-calcium content through computed tomography, pure cholesterol stones may not be so because of their low-calcium

content (6). Gallbladder stone-associated abscesses that appear particularly in later periods may radiologically mimic significant pathologies like retroperitoneal sarcoma, peritoneal metastasis, and gastric tumors (3, 6). A well-taken anamnesis proves to be quite important in the differential diagnosis of such cases. In our case, too, the patient had been in a follow-up program with hydatid cyst pre-diagnosis for a long time because her surgical data had not been well documented, she had not been informed, and her medical history had not been questioned sufficiently in subsequent presentations.

Percutaneous drainage and antibiotics treatment do not suffice in most gallbladder stone-related abscess cases. Abscess should be drained and the focus causing the abscess should be extracted either by open or by laparoscopic procedures in such cases (11). We, accordingly, planned laparoscopic abscess drainage and stone extraction for our patient as the preferred treatment modality.

Though rare, residual intraabdominal gallbladder stones may lead to serious complications that necessitate secondary surgical intervention years later after the surgery and misdiagnosis may set the treatment process back. Physicians should be careful during the dissection, traction, and extraction of the gallbladder to prevent such complications while ultimate patience and effort should be put in to remove all the gallbladder stones if they are spilled.

Conflict of interest

The authors declared no conflict of interest.

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