

Retrieval of a missed intraperitoneal gallstone with early second look laparoscopy

Missed gallstones after laparoscopic cholecystectomy

Zeliha Turkyilmaz¹, Orhan Sunar¹, Tuğrul Demirel¹, Osman Kula²

¹Department of General Surgery

²Department of Radiology, Trakya University, Medical Faculty, Edirne, Turkey

Abstract

The perforation of the gall bladder is the most common complication in laparoscopic cholecystectomy (LC). Retrieval of spilled gallstones is routine when possible. However, it is not infrequent to leave some. Although significantly rare, abandoned gallstones may cause late and subtle symptoms and even severe intra-abdominal complications. In this study, we present a 60-year-old male patient who had an attack of acute cholecystitis and underwent laparoscopic cholecystectomy 6 weeks later. A second emergency laparoscopy was performed to remove the unremoved gallstone presenting with mild complaints. Postoperative CT might locate missed gallstones in the peritoneal cavity, and early laparoscopy may prevent severe late complications.

Keywords

Gallstones, Laparoscopic Cholecystectomy, Abdominal Abscess

DOI: 10.4328/ACAM.20824 Received: 2021-08-19 Accepted: 2021-10-05 Published Online: 2021-10-20 Printed: 2021-11-01 Ann Clin Anal Med 2021;12(11):1303-1305

Corresponding Author: Zeliha Turkyilmaz, Department of General Surgery, Trakya University, Medical Faculty, 22030, Edirne, Turkey.

E-mail: turkyilmazz@yahoo.com P: +90 532 708 29 44

Corresponding Author ORCID ID: <https://orcid.org/0000-0002-0012-2089>

Introduction

The two most common complications in LC are biliary tract injury and gallbladder perforation resulting in gallstone spillage into the abdominal cavity. Although the number of biliary injuries has decreased over time with increasing surgical experience, the frequency of lost stones still remains the same. Traditionally, lost stones have been considered harmless, but there are many reviews that mention complications of this condition [1,2].

Although complications arising from spilled intraperitoneal stones are not common, complications requiring surgery, such as fistula and gallstone ileus, may develop in 0.7-2.3% of cases. The most frequently seen complication of lost stones is intra-abdominal abscess [2].

Case Report

A 60-year-old male admitted to the emergency department 6 weeks ago with sudden onset of pain in the right upper quadrant, which was accompanied with nausea and vomiting. He had type 2 diabetes for 15 years and has been using metformin. He did not have any previous surgery. Physical examination at that time revealed epigastric tenderness and a positive Murphy sign. Abdominal ultrasound showed thickened gall bladder wall of 5.6 mm and multiple stones up to 35 mm with accompanying sludge. He had intravenous antibiotics (ampicillin/sulbactam) for 5 days at the hospital, and after 6 weeks he was discharged with oral antibiotics to refer to the outpatient clinic.

After 6 weeks, the patient whose preoperative examinations were normal, underwent laparoscopic cholecystectomy. Examination revealed thick adhesions of the duodenum and omentum to the gallbladder and liver. All adhesions were taken down precisely, but the gallbladder wall was stone-like hard, which makes it difficult to properly manipulate the organ. Eventually, the fundus was ruptured and a viscous dark biliary fluid with sludge and some stones spilled out. The stones were collected, the fluid was aspirated, and the region was further irrigated and aspirated. The gallbladder was removed with a specimen bag and no further spillage occurred. A drain was placed. Prophylactic antimicrobial therapy with cephalosporins was continued after the operation. On the postoperative first

day, WBC was $18,8 \times 10^9/L$, and CRP was 23,8 mg/dL. Drain content was serous. The patient was not discharged due to mild to moderate abdominal pain. Although there were no significant findings other than a minimal free fluid in the ultrasonography performed, computed tomography showed a missed gallstone (Figure 1). An immediate laparoscopy was performed on the same day and the retaining gallstone was removed. A drain was placed in the subhepatic space, which was removed gradually. The patient was discharged on postoperative sixth day. The patient had no complaints so far in 18 months period of follow-up.

Discussion

Although the diagnosis of incomplete stones is difficult, the number of missing stones has been reported between 1-40%, similar to the perforation rates in studies. Most of the lost stones remain clinically asymptomatic, however about 0,04% to 19% of the lost stones can become symptomatic [3]. Asymptomatic stones can be incidentally detected later in life using radiological examinations. Patients may present with abdominal complaints such as pain, mass, obstruction, fever, or fistula. The most common complication due to intraperitoneal stone is intraabdominal abscess formation [1]. Other complications include retroperitoneal abscess, pleural empyema, intestinal obstruction, gastrointestinal fistula, and stone erosion in the lumbar region [4]. Lost gallstones may rarely mimic endometriosis, ovarian tumor, sarcoma, or peritoneal carcinomatosis [5].

Asymptomatic stones can be detected incidentally later in life using radiological examinations. An article reported the presence of a gallstone in the hernia sac during inguinal hernia repair five years after laparoscopic cholecystectomy [6].

Factors increasing the possibility of gallbladder perforation and bile leakage include lack of experience in laparoscopy, laser use for dissections, male gender, age, presence of acute cholecystitis and hydropic gallbladder, and previous operation history [7]. It has been reported that the loss of pigment stones, dropped stones larger than 1.5 cm, spilling of more than 15 stones, and stones falling into the perihepatic area have been reported to cause more infectious complications [2,8].

There are researchers who stated that in approximately 20% of cases, gallstones that spilled during surgery were not noticed, and the diagnosis was prolonged due to low clinical suspicion in patients who underwent LC. Delays in treatment decisions often result from subtle and variable symptoms and inadequate imaging [2,8].

As a result, efforts should be made for laparoscopic removal of spilled gallstones when noticed perioperatively. Conversion to an open procedure is not necessary. Conversion to an open procedure should only be considered if the experience of the surgeon with laparoscopy is insufficient. If gallbladder perforation has occurred, the abdominal cavity must be washed routinely to dilute the infected bile. The diagnosis is usually difficult in the early or late postoperative period. Often the most important reason for delayed diagnosis is insufficient suspicion. Abandoned stones after LC may result in focal and sometimes distant infections that may occur even years later and cause mild and atypical symptoms. This insufficient suspicion often



Figure 1. Coronal abdominal CT image shows unretrieved gallstone in a subhepatic abscess (white arrow)

results in long-term ineffective investigations for mild and atypical symptoms. Therefore, complications associated with gallstones remaining in the peritoneal cavity should be kept in mind even years after LC. It should be suspected that some of the atypical and mild symptoms may be due to underlying sources. If gallstones are detected during examinations, it is recommended to remove them first by percutaneous and laparoscopic methods.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

Conflict of interest

None of the authors received any type of financial support that could be considered potential conflict of interest regarding the manuscript or its submission.

Funding: None

References

1. Zehetner J, Shamiyeh A, Wayand W. Lost gallstones in laparoscopic cholecystectomy: all possible complications. *Am J Surg.* 2007;193(1):73–8.
2. Carmichael SP, Zwischenberger, Brittany A, Bernard, Andrew C. Late Reoperation for Retained Gallstone After Laparoscopic Cholecystectomy. *Surg Laparosc Endosc Percutan Tech.* 2014; 24 (1):27-8.
3. Nooghabi AJ, Hassanpour M, Jangjoo A. Consequences of Lost Gallstones during Laparoscopic Cholecystectomy: A Review Article. *Surg Laparosc Endosc Percutan Tech.* 2016; 26(3):183–92.
4. Woodfield JC, Rodgers M, Windsor JA. Peritoneal gallstones following laparoscopic cholecystectomy: Incidence, complications, and management. *Surg Endosc.* 2004; 18(8):1200–7.
5. Ramamurthy NK, Rudralingam V, Martin DF, Galloway SW, Sukumar SA. Out of sight but kept in mind: Complications and imitations of dropped gallstones. Vol. 200, *Am J Roentgenol.* 2013; 200(6): 1244–53.
6. Heywood S, Wagstaff B, Tait N. An unusual site of gallstones five years after laparoscopic cholecystectomy. *Int J Surg Case Rep.* 2019; 56:107-9.
7. Mohiuddin K, Nizami S, Fitzgibbons RJ, Watson P, Memon B, Memon MA. Predicting iatrogenic gall bladder perforation during laparoscopic cholecystectomy: A multivariate logistic regression analysis of risk factors. *ANZ Journal of Surgery.* 2006; 76(3):130-2.
8. Brockmann JG, Kocher T, Senninger NJ, Schürmann GM. Complications due to gallstones lost during laparoscopic cholecystectomy: An analysis of incidence, clinical course, and management. *Surg Endosc.* 2002; 16(8):1226-32.

How to cite this article:

Zeliha Turkyilmaz, Orhan Sunar, Tuğrul Demirel, Osman Kula. Retrieval of a missed intraperitoneal gallstone with early second look laparoscopy. *Ann Clin Anal Med* 2021;12(11):1305-1305