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Case Report

Missed Gallbladder Stone Following Laparoscopic Cholecystectomy for Acute Cholecystitis

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Abstract

Perforation of the gallbladder during laparoscopic cholecystectomy is common and results in the spillage of stones into the abdominal cavity. Most of these buried gallbladder stones are clinically silent, but a small percentage can develop complications such as infections, abscesses, and fistulas months or years after surgery If these stones are ignored and not removed from the abdominal cavity. This review presents a 59-year-old woman who was complicated by chronic supra-umbilical discharge from the camera site port, after six months of surgery. The patient had a previous history of multiple abscess drainage, and the radiological examination revealed abdominal gallstones in the abdominal cavity and attached to the abdominal wall with no connection to the abdominal organs. This study discusses our case and reviews the literature on the prevention and treatment of spilled gallstones after laparoscopic cholecystectomy.

Keywords: Fistula; Abscess; Laparoscopic cholecystectomy.

INTRODUCTION

One of the modern treatment methods for gallstones is laparoscopic cholecystectomy. As the number of such surgeries has increased, a significant increase in the complications associated with this type of surgery has been observed. Stones can spread and shed during laparoscopic and open procedures, but these open cholecystectomy stones are treated with direct removal, irrigation, and mapping with a laparotomy sponge. In laparoscopic cholecystectomy, these stones are more complex or unavailable and may disappear from view and be lost. The occurrence of spilled gallbladder stones during laparoscopic surgery accounts for 5-40% of surgeries performed, and 13-32% of such surgeries result in stone loss [1, 2]. Therefore, the complications of these stones in the abdominal cavity can lead to various complications and serious pathological conditions.

CASE PRESENTATION

A 59-year-old woman presented to the general surgery department with a history of periumbilical pain and chronic discharge from the supraumbilical incision (port of the camera site) after six months of laparoscopic cholecystectomy for gallbladder stones. The operation went without major complications, and she was discharged from the hospital the following day. On examination, the patient had painful swelling in the supraumbilical region, erythema of the overlying skin, and chronic sinusitis. She had a neutrophilia of 6.8 x 109/liter, and there is a C-reactive protein of 125 grams/liter. A computed tomography (CT) scan showed a rounded (oval) shape in the peritoneal cavity attached to the abdominal wall below the umbilical region, and there was no connection with the abdominal organs, as shown in Figures 1. The patient was diagnosed with a foreign body following a previous laparoscopic cholecystectomy, Figure 2.

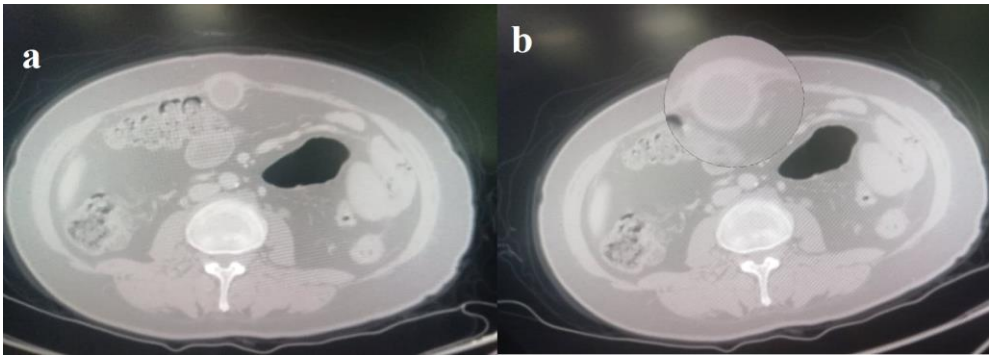

Figure 1: Axial cut CT scan at umbilical level. a, b) oval shape gallstone in the peritoneal cavity attached to the abdominal wall below the umbilical region

Figure 2: Gross appearance of gallstone

DISCUSSION

We reviewed the published work on missed gallbladder stones after laparoscopic cholecystectomy to discuss the complications expected, the risk factors leading to such complications, and the management of patients suffering from these missed stones.

Risk of complications from missed stones in the abdominal cavity

Although scattered gallbladder stones were generally considered harmless, it is now recognized that they can be a small but significant source of postoperative morbidity (0.1–6%) after cholecystectomy [4]. Each patient's clinical picture differs depending on the localization and type of complications suffered. Typical symptoms are abdominal pain, fever, sinusitis, fistulas, abdominal masses, or intestinal obstruction [2, 5].

Complications usually appear within the first few months, but some complications have been documented for years [6]. Zehetner et al. documented all possible complications of missed gallstones, including common symptoms such as intra-abdominal hematoma, subcutaneous abscess, and fistula, as well as less common complications, such as liver abscess, empyema, granulomas, and intestinal obstruction [5].

Risk of gallbladder perforation

A certain situation may lead to an increased risk of gallbladder perforation during laparoscopic cholecystectomy. Patients with acute cholecystitis tend to have fragile tissues that are more prone to perforation. Inflammation causes tight adhesions around the gallbladder, making dissection difficult, and a strained, inflated gallbladder that does not decompress is at risk of perforation [1, 3]. This may occur during gallbladder manipulation or liver bed dissection.

Slippage of the duct clamp or a hole in the gallbladder may result in stone chipping when retrieving from the port site [4]. Perforated laparoscopic cholecystectomy has a recognized learning curve that increases the risk of perforation in the surgeon's laparoscopic carrier [1].

Prevention and treatment of spilled gallbladder stones

The best way to reduce the complications from spilled stones is to take precautions to avoid perforation of the gallbladder by precise dissection, carefully and precisely manipulating the tissue, a rough Avoid dissection, and use end bags to retrieve the gallbladder through the port sides.

In cases of perforation, despite precautions taken during surgery, and stone spills, it is important to reduce the number of stones by detecting and then laparoscopically removing the stones, particularly if they are pigmented, large, fragmented, infected, or associated with infected bile and the peritoneal cavity must be irrigated, and stones may flow into the suction system [4]. Infections are considered the most common postoperative complications, so antibiotic therapy should be given postoperatively.

Some surgeons recommend using clips at the gallbladder openings, while others use a retrieval bag to press against the liver and collect shed stones [7].

Conversion to open is an option to remove missed stones but increases the risk of postoperative complications.

Management of Complications

Ultrasound is the primary imaging modality for diagnosing these complications because gallbladder stones are readily visualized with this imaging modality. The accompanying images can be obtained using computed tomography, showing complications of stones lost in the abdominal cavity, such as infections, abscesses, and fistula tracts. On MRI, most missed gallstones appear low on t1- and t2-weighted images, while pigmented gallstones may appear high-intensity on t1-weighted images.

Diagnosis can sometimes be difficult, and radiation results can mimic unusual diagnoses. Ultimately, the sinus tract must be surgically opened, and the stone removed using the open technique.

CONCLUSIONS

Laparoscopic cholecystectomy for acute cholecystitis involves perforation of the gallbladder and may result in leakage of stones and spilling into the abdominal cavity. These stones can pose diagnostic challenges and therefore cause patient morbidity as they can lead to early or late complications. It is very important to take precautions to avoid perforation in the gallbladder with precise dissection, handle the tissue carefully and precisely, avoid gross dissection, and use end bags to retrieve the gallbladder through the access sites during the procedure. It is also very important to record and educate patients about the loss of gallbladder stones as it can help detect and treat complications.

REFERENCES

1. Bhati, C. S., Tamijmarane, A., & Bramhall, S. R. (2006). A tale of three spilled gall stones: one liver mass and two abscesses. *Digestive Surgery*, *23*(3), 198-200.
2. Yadav, R. K., Yadav, V. S., Garg, P., Yadav, S. P., & Goel, V. (2002). Gallstone expectoration following laparoscopic cholecystectomy. *The Indian Journal of Chest Diseases & Allied Sciences*, *44*(2), 133-135.
3. Frola, C., Cannici, F., Cantoni, S., Tagliafico, E., & Luminati, T. (1999). Peritoneal abscess formation as a late complication of gallstones spilled during laparoscopic cholecystectomy. *The British Journal of Radiology*, *72*(854), 201-203.
4. Hand, A. A., Self, M. L., & Dunn, E. (2006). Abdominal wall abscess formation two years after laparoscopic cholecystectomy. *JSLS: Journal of the Society of Laparoendoscopic Surgeons*, *10*(1), 105-107.
5. Zehetner, J., Shamiyeh, A., & Wayand, W. (2007). Lost gallstones in laparoscopic cholecystectomy: all possible complications. *The American Journal of Surgery*, *193*(1), 73-78.
6. Chowbey, P. K., Goel, A., Bagchi, N., Sharma, A., Khullar, R., Soni, V., & Baijal, M. (2006). Abdominal Wall Sinus: An unusual presentation of spilled gallstone. *Journal of Laparoendoscopic and Advanced Surgical Techniques*, *16*(6), 613-615.
7. Patterson, E. J., & Nagy, A. G. (1997). Don't cry over spilled stones? Complications of gallstones spilled during laparoscopic cholecystectomy: case report and literature review. *Canadian journal of surgery*, *40*(4), 300-304.