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Abdominal wall abscess secondary to post-cholecystectomy clip migration: A case report

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ABSTRACT

Background: The migration of surgical clips after laparoscopic cholecystectomy is rare and can lead to complications such as clip-related biliary stones and intra-abdominal abscesses. In this article, we report a case of a retained dropped metal clip after a laparoscopic cholecystectomy resulting in an abscess that necessitated through the right abdominal wall and into the subcutaneous tissues 13 months later.

Summary: Our patient is a 79-year-old male, with multiple comorbidities who underwent a laparoscopic cholecystectomy for acute cholecystitis. The cystic duct and artery were divided in-between 10-mm metallic clips. After 13 months, patient presented with a perihepatic abscess and a retained metallic clip necessitating through the right abdominal wall into the subcutaneous tissues. Patient was taken to the operating room and underwent an incision and drainage of the right abdominal wall abscess and retrieval of the migrating cholecystectomy clip.

Conclusion: To avoid complications related to dropped cholecystectomy clips, it is important to use the correct technique for applying clips and attempt to retrieve any noticeably dropped clips intraoperatively.

Keywords: retained clip; clip migration; laparoscopic cholecystectomy; intra-abdominal abscess

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Introduction

The migration of surgical clips after laparoscopic cholecystectomy is rare and can lead to complications such as clip-related biliary stones and intra-abdominal abscesses. In this article, we report a case of a retained dropped metal clip after a laparoscopic cholecystectomy resulting in an abscess that necessitated through the right abdominal wall and into the subcutaneous tissues 13 months later.

Case Description

Our patient is a 79-year-old male, with multiple comorbidities who underwent a laparoscopic cholecystectomy for acute cholecystitis. During the operation, the gallbladder was inadvertently entered, and stones and bile were spilled. All visualized stones were presumably removed from the peritoneal cavity by endoscopic suctioning. The cystic duct and artery were divided in-between 10-mm metallic clips. Three months later he was re-admitted with a CT-scan evidence of a large right pleural effusion and a heterogenous fluid collection above the liver centered around a retained dropped cholecystectomy clip [Figure 1]. Patient underwent percutaneous, ultrasound-guided, right thoracentesis removing 1600 ml of non-infected, exudative pleural fluid. The pleural effusion was considered to be sympathetic in nature, related to the subdiaphragmatic fluid collection. Antibiotics were administered given concerns for a possible intraabdominal abscess. Percutaneous drainage of the subdiaphragmatic fluid collection, however, was not performed to prevent contamination and infection of the pleural space. Over the course of the next eight months, patient was re-admitted to the hospital twice with persistent RUQ pain and CT-scan evidence of a subdiaphragmatic phlegmon suggestive for an abscess. He ultimately underwent a diagnostic aspiration of the fluid collection that showed no microorganisms though he was on antibiotics at the time. Two months later, the patient presented with increasing fatigue and a rapidly expanding tender bulge in the right chest wall. A CT scan was obtained that showed a perihepatic abscess and a retained metallic clip necessitating through the right abdominal wall into the subcutaneous tissues [Figure 2]. Patient was taken to the operating room and underwent an incision and drainage of the right abdominal wall abscess and retrieval of the migrating cholecystectomy clip.

The post-operative course was uneventful, and subsequently the patient was discharged to home and had an unremarkable recovery.

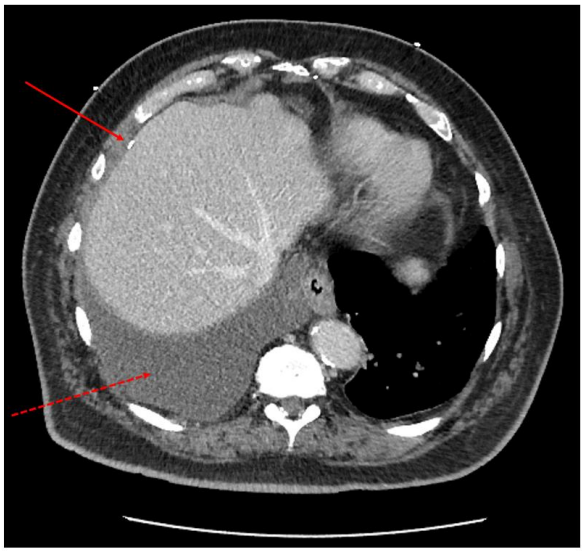

Figure 1. Axial CT scan image showing a right pleural effusion [dotted line arrow] and a fluid collection above the liver centered around a retained dropped cholecystectomy clip [solid line arrow]

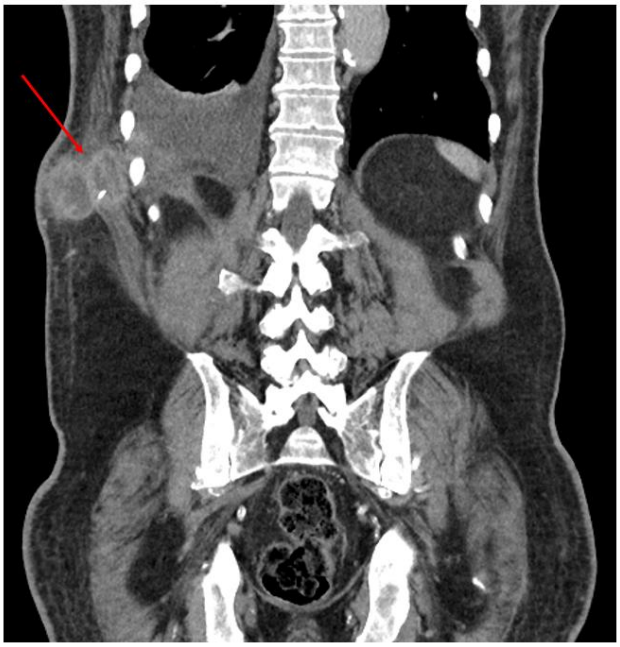

Figure 2. Coronal CT scan image showing a perihepatic abscess and a retained metallic clip necessitating through the right abdominal wall into the subcutaneous tissues [arrow]

Discussion

There are no large-scale studies examining the incidence of dropped clips after cholecystectomy. The incidence of migration of dropped clips, resulting in clinically significant complications, is quite rare, only described by case reports in the literature. Though there are no formal studies, case report data would suggest that intra-abdominal migration is most common, with multiple case reports of migration into the common bile duct resulting in a nidus for stone formation [1-6]. Other intra-abdominal migration sites described in prior case reports include the duodenum [2,6-7] and subdiaphrag-matic area [8]. Intrathoracic migration appears much rarer, with sparse cases described in the literature [9].

The pathogenesis of complications related to dropped clips is not well studied, however, possible etiologies put forth in the literature include subclinical bile leaks [6], infected postoperative fluid collections [biloma or hematoma] [8], and inflammation allowing clip migration [6-7].

Migrated clips can have a variety of presentations, based on location. The median time to presentation is approximately two years postoperatively [10]. Based on a case series of 69 reports of 80 cases, the primary presentation for migrated cholecystectomy clips is obstructive jaundice [37.7%], followed by cholangitis [27.5%], biliary colic [18.8%], and acute pancreatitis [8.7%] [10]. In patients with intrathoracic migration, location again determines symptoms.

Management of migrated cholecystectomy clips depends on the presenting pathology. For those with clips in the common bile duct or duodenum, endoscopy should be considered the first-line option [1, 3-5, 7]. For intra-abdominal abscesses, management with antibiotics and consideration of image-guided or surgical drainage is appropriate [8]. For less common presentations, such as our patient, individualized treatment becomes more important. Consideration should be given to the path of migration, and avoidance of creating an iatrogenic connection between the pleural and peritoneal cavities, particularly in the setting of an abscess, should be prioritized.

Conclusions

Though complications related to dropped cholecystectomy clips are rare, there are multiple instances reported in the literature, most requiring further interventions. Thus, it would be prudent to attempt to retrieve any noticeably

dropped clips intraoperatively, and care should be paid to applying clips with correct technique at the index operation.

Disclosure Statement: The authors have no conflicts of interest or financial disclosures to declare.

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