Case report

Biloma after laparoscopic cholecystectomy

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SUMMARY

Purpose: Laparoscopic cholecystectomy has become the standard method in the management of cholelithiasis. Subhepatic bile collection or biloma is a relatively uncommon complication, which is highlighted in this paper.

Methods-Results: Over the past two-year period the same surgeon performed 180 laparoscopic cholecystectomies without any intra-operative event. All patients but three had an uneventful postoperative course (morbidity 1.6%). In 3 cases (women, 72-74-88 years-old) the US-scanning revealed a sub-hepatic biloma manifested by persistent right upper quadrant or epigastric pain, abdominal distention, fever and leukocytosis. In one case there was co-existent gastric outlet obstruction two weeks after the operation and mild obstructive jaundice in another one. All were managed successfully by drainage under ultrasound guidance and antibiotics, prolonging the hospitalization.

Conclusions: Small bile leakage and biloma formation is a rather unusual complication after laparoscopic cholecystectomy that should be kept in mind.

Key words: Laparoscopy, Cholelithiasis, Laparoscopic cholecystectomy, Complications, Biloma, Bile leakage

INTRODUCTION

Bile duct injury during laparoscopic cholecystectomy ranges from mild to severe with serious and disastrous consequences. Although progress has resulted in a decrease in incidence, making it comparable to open procedure, it can easily be missed. Its incidence is reported between 0.3% and 0.6%.[1]

However, bile leakage after laparoscopic cholecystectomy accounting for 0.2%-2% may cause intra-abdominal collection, fistula formation or life threatening bile peritonitis in case of large amounts.[2] It usually comes from the cystic duct stump due to misplacement of the clips, common bile duct injury and from accessory duct or small bile ducts of gallbladder bed, i.e. Luschka's duct. Diagnosis and treatment of bile leak from an aberrant bile duct may be delayed.[3]

In case of small flow, it could be entrenched by the adjacent organs and fibrin usually forming a localized sub-hepatic bile collection or biloma.[4-6] There have been reported unusual locations of biloma in the abdominal wall[7] or even intra-hepatic sub-capsular biloma.[8]

This paper reports our own experience on this topic of a rather unusual biloma formation after laparoscopic cholecystectomy. Taking the opportunity, it also reviews the relevant literature.

METHODS AND RESULTS

This retrospective trial includes 180 laparoscopic cholecystectomies carried out by the same surgeon over the past two-year period. Similar anesthetic and operative technique was applied in all patients. Drain was not used routinely, but was used selectively, in just eight cases (4.4%) with severe inflammation or scare and a hard dissection of Calot's triangle. The laparoscopic procedure was completed successfully in all cases without any intra-operative complication or need of conversion to open operation.

All patients but three recovered well and had an uneventful postoperative course without any complication or death. The three cases are described in detail below.

Case report 1: A 72 year-old woman, in whom a drain

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was used, was discharged on 3rd postoperative day in good condition. She came back two weeks later complaining for epigastric pain, discomfort, vomiting and fever. The clinical examination showed tenderness in the epigastrium and right hypohondrium. There were leukocytosis with polymorphonuclearcytosis and increased E.S.R. (Erythrocyte Sedimentation Rate). The US-scanning revealed a localized fluid collection in the epigastrium 10-cm in diameter causing gastric outlet obstruction.

Case report 2: A 74 year-old woman had postoperatively persistent right upper quadrant pain, abdominal distention and fever. The clinical examination showed mild obstructive jaundice, diffuse abdominal tenderness, distention and weak bowel sounds. There were leukocytosis with polymorphonuclearcytosis, increased E.S.R. and elevated liver function test. The US-scanning revealed a localized infra-hepatic fluid collection 8-cm in diameter.

Case report 3: An 88 year-old woman had postoperatively persistent right upper quadrant pain radiating to the epigastrium and fever. The clinical examination showed tenderness in the epigastrium and right hypohondrium. There were leukocytosis with polymorphonuclearcytosis and increased E.S.R. The US-scanning revealed a localized infra-hepatic fluid collection 6-cm in diameter.

All three cases were managed successfully by drainage catheter under ultrasound guidance. The fluid was bile and the catheter was left in place for a few days under antibiotic coverage, prolonging the hospitalization. After complete cessation of discharge the drain was removed and the patients left hospital. They have remained well for 23, 14 and 8 months, respectively.

DISCUSSION

Major complications from common bile duct injuries including strictures or intra-abdominal bile collections may ensue after laparoscopic cholecystectomy. Early and accurate diagnosis is mandatory to determine exactly the appropriate management. Modern imaging techniques (MRI, magnetic resonance imaging - MRC, magnetic resonance cholangiography - CT, computed tomography - or US, ultrasound-scanning) and other interventional modalities (ERCP, endoscopic retrograde cholangiopancreatography - PTC, percutaneous transhepatic cholangiography) can make the correct definition of the lesion as well as of enable the optimal "minimally invasive" treatment. Therefore, the combined use of radiologic and endoscopic management may avoid laparotomy in 70% of cases and has already become the method of choice.[9-12]

Bilomas after cholecystectomy are relatively uncommon. The reported incidence reaches 2.5%;[11] it is 1.6% in this study. They usually present with right upper quadrant or epigastric pain, abdominal distention, fever and leucocytosis,[13] as in our cases. Sometimes, extrinsic compression to bile duct or duodenum could cause obstructive jaundice or gastric outlet obstruction, respectively.[5] One of our cases had a mild obstructive jaundice and elevated liver function test, while another had epigastic discomfort and vomiting two weeks after the operation. The timing of biloma detection could be delayed for two weeks, as in the latter case. We would stress that every persistent abdominal pain, fever or leukocytosis after laparoscopic cholecystectomy is a matter for attention; an ultrasonography is mandatory to exclude any intraabdominal collection.

The biloma could be managed by percutaneous catheter drainage placed under imaging guidance. If the leak is small, it will resolve spontaneously in a few days,[13,14] as in our cases. The standard cholangiographic techniques cannot fill small bile ducts in such cases, delineating the leak.[3] The spontaneous sealing after percutaneous drainage does not necessitate the performance of any cholangiography; this was our policy too. In larger leaks, an endoscopic or percutaneous bile duct stenting or, alternatively, an endoscopic nasobiliary tube are required to give the opportunity of leakage healing.[6,15]

However, major biliary injuries usually require surgical intervention. Delayed management and long-lasting chronic biliary obstruction is associated with significant hepatic damage.

In conclusion, we would say that biloma is a rather unusual complication after laparoscopic cholecystectomy that should be kept in mind. It can be managed successfully by drainage catheter placement under ultrasound guidance; in persistent leakage a non-operative interventional common bile duct stenting is necessary.

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