INTRAHEPATIC SUBCAPSULAR HEMATOMA COMPLICATING LAPAROSCOPIC CHOLECYSTECTOMY

Law CW, Ng CLL
Department of Surgery, Faculty of Medicine, University of Malaya, Kuala Lumpur.

ABSTRACT

A 65-year-old lady with cholelithiasis underwent an elective laparoscopic cholecystectomy (LC) and was discharged on post-operative day 2. She was re-admitted after five days with right hypochondriac pain and fever. Investigations revealed a drop in hemoglobin. Computed tomography showed a large intrahepatic subcapsular collection without intra-abdominal collection. She was treated with intravenous antibiotics. Percutaneous aspiration of intrahepatic subcapsular collection under ultrasound guidance revealed old blood. Hence diagnosis of intrahepatic subcapsular hematoma (ISH) was made. She improved and was discharged after a two weeks' hospital stay. Follow-up ultrasonography examination two months later revealed complete resolution of the hematoma. We report this case due to its rarity and review the previously documented cases of this complication. *(JUMMEC 2008; 11 (2): 83-85)*

KEYWORDS: *laparoscopic cholecystectomy, intrahepatic subcapsular hematoma*

Introduction

Laparoscopic cholecystectomy (LC) is a well-accepted modality in the treatment of gallstone disease. Laparoscopic procedures are associated with faster recovery, earlier return to daily life and the cosmetic benefit of smaller scars. Post-operative hemorrhagic complications of LC are uncommon, and when bleeding does occur, it usually results in hemoperitoneum or an intra-abdominal collection. Development of an intrahepatic subcapsular hematoma (ISH) without intraperitoneal bleeding is unusual.

Case report

This is a 65-year-old lady with underlying hypertension who was on atenolol and nifedipine. She was initially admitted with gallstone pancreatitis two years ago during which an endoscopic retrograde cholangio-pancreatogram (ERCP) with sphincterotomy was performed. She was then scheduled for LC six months later. However, due to unforeseen circumstances, elective LC was only carried out two years after the pancreatitis attack. Intra-operatively, the liver appeared normal and the operation was completed uneventfully without any immediate complications. No bleeding was noted at the end of the procedure. Following delivery of the gall bladder out of the abdomen, a single stone was noted within. Histopathology of the gall bladder showed chronic inflammation. She was discharged two days after surgery.

The patient was readmitted on post-operative day five with right hypochondriac pain and spiking temperature of up to 38.5^{0}C. Her abdomen was soft with slight tenderness over the right hypochondrium. Bruises were noted below her infra-umbilical port site and right flank. Her vital signs were stable. Full blood count revealed a drop in hemoglobin from 14.5 g/dL pre-operatively to 10.3 g/dL and a white cell count of 10.8 x 10^9 / L (white cell count was raised as compared to her baseline result pre-operatively). The liver function tests were unremarkable. Clinical impression of intra-abdominal biliary collection or hematoma was made. Computed tomography was arranged because it has a higher sensitivity as compared to ultrasound. It revealed a 6 cm x 10 cm subcapsular liver collection in segment V and VI which were slightly enhanced with contrast. No extravasation of contrast was seen and there was no free fluid in the peritoneal cavity. The patient was started on sulperazone 1 g thrice a day intravenously. Despite the antibiotics, she still had spiking temperature and a clinical diagnosis of infected subcapsular biloma or hematoma was

Correspondence:
Law Chee Wei
Department of Surgery
Faculty of Medicine, University of Malaya
50603 Kuala Lumpur
Email: drcwlaw@gmail.com

made. Percutaneous aspiration of the intrahepatic subcapsular collection under ultrasound guidance was performed using a 21G needle after three days of antibiotics. The procedure revealed old blood from the aspiration and further drainage was impossible due to clotted old blood. Diagnosis of an ISH was made.

As she continued to have spiking temperature, imipenem was started on day seven of admission. Blood cultures which were taken three times were all negative. The patient improved and was discharged after completing two weeks of imipenem. Follow-up ultrasonography examination two months later revealed complete resolution of the hematoma.

Discussion

Postoperative bleeding is an uncommon complication of LC. A survey of 77,604 cases done in the United States in 1993 found the incidence rate to be approximately 0.08–0.2% (1). Post-operative bleeding most commonly occurred at the gallbladder fossa, the abdominal wall puncture site, the cystic artery, and the falciform ligament. An ISH without hemoperitoneum occurring after LC is extremely rare.

A literature search on ISH without hemoperitoneum revealed only five cases. Out of these, the cause of ISH was identifiable only in one case which the surgeon attributed to an instrument stab wound (2). In the other four cases, the surgeons postulated that ISH was due to:

1. excessive bending and wrinkling of the liver capsule during retraction and dissection of the gallbladder (3)
2. injury to a pre-operatively unidentified intrahepatic hemangioma (4)
3. administration of Ketorolac, a nonsteroidal anti-inflammatory drug (NSAID), used for perioperative analgesia might have induced an antithrombolytic state through its effect on thromboxane production and platelet aggregation. which possibly aggravated some minor subcapsular bleeding induced by liver retraction (5)
4. injury to the hepatic parenchyma by the guidewire used during ERCP (6)

However, the cause of ISH in our case remains unclear. The operation itself seemed uneventful. Therefore, a high index of suspicion is needed in diagnosing post-LC ISH. In patients who do not recover as expected or have a decrease in haemoglobin post-operatively, low threshold for imaging increases the chances of early detection of an ISH.

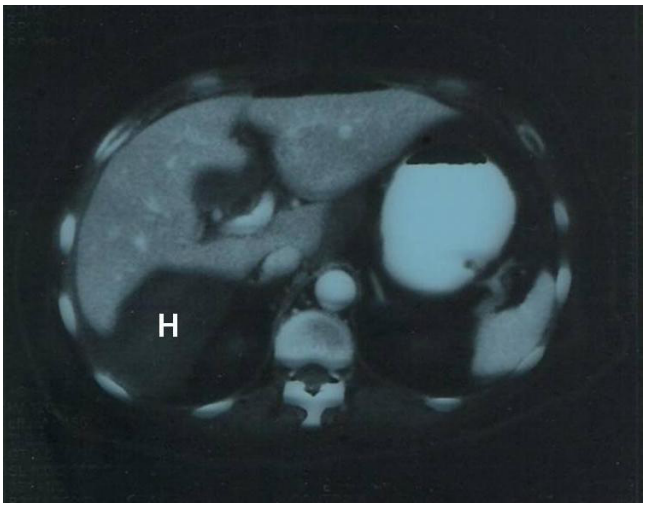

Figure 1: *Intrahepatic Subcapsular Hematoma (H = hematoma)*

In our case, the ISH was of moderate size. It was drained percutaneously and the patient was protected with antibiotics. Follow-up imaging was performed till the hematoma was resolved completely. Similar management was noted from our literature search, whereby stable patients with a small, nonexpanding ISH were treated conservatively with closed clinical monitoring (7). On the other hand, percutaneous drainage under ultrasound guidance was performed for cases with moderate to larger-sized hematomas.

References

1. Deziel DJ, Millikan KW, Economou SG, *et al*. Complications of laparoscopic cholecystectomy: a national survey of 4,292 hospitals and an analysis of 77,604 cases. *Am J Surg* 1993; 165: 9-14.
2. Nathanson LK, Shimi S, Cuschieri A. Laparoscopic cholecystectomy: the Dundee technique. *Br J Surg* 1991; 78:155-159.
3. Alexander HC. Two unusual hemorrhagic complications during laparoscopic cholecystectomy. *Surg Laparosc Endosc* 1993; 3:346-348.

4. Pietra N, Sarli L, Costi R, Violi V. Intrahepatic subcapsular hematoma. A rare postoperative complication of laparoscopic cholecystectomy. *Surg Laparosc Endosc* 1998; 8: 304-307.

5. Erstad BL, Rappaport WD. Subcapsular hematoma after laparoscopic cholecystectomy, associated with Ketorolac administration. *Pharmacotherapy* 1994; 14:613- 615.

6. Ortega DP, Fernandez LR, Garcia SJ, *et al*. Liver hematoma following endoscopic retrograde cholangiopancreatography (ERCP). *Surg Endosc 2000; 14: 767*.

7. Bhandarkar DS, Katara AN, Shah RS. Intrahepatic subcapsular hematoma complicating laparoscopic cholecystectomy. *Surg Endosc* 2004 May;18(5):868-870. *Epub* 2004 Feb 2.