

Massive spontaneous haematoma of the liver following laparoscopic cholecystectomy

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Introduction

Laparoscopic cholecystectomy (LC) has become a day case surgery owing to low peri-operative complications reported to be around 2-8%¹. Major complications are rare and occur in approximately 2.6% of cases¹. These includes common bile duct (CBD) injury, bowel injury and choledocholithiasis³ while postoperative haemorrhage is rare (0.08-2%)^{3,6}. Common bleeding sites include the gallbladder fossa, the abdominal trocar insertion site, the cystic artery, the falciform ligament and liver capsular tear. Intrahepatic subcapsular haematoma (ISH) of the liver without intraabdominal haemorrhage is an extremely rare and potentially life threatening complication of LC⁶.

Case Report

A 31 year old female underwent laparoscopic cholecystectomy in a local hospital for recurrent biliary colics with multiple gallstones in the gallbladder. Six hours after the surgery she complained of right hypochondrial pain . Upon examination, her blood pressure was 110/70 mm/Hg with a pulse rate of 90/min and respiratory rate of 40/min.

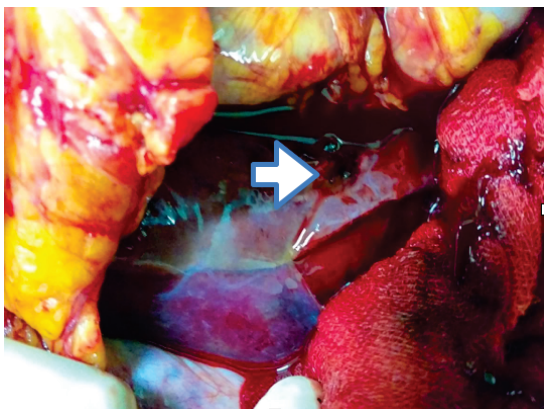


Figure 1. Picture demonstrating subcapsular hepatic haematoma with capsular rupture-White arrow.

Her Haemoglobin dropped to 6.9 g/dl. Therefore bleeding was suspected and decided to do a urgent exploratory laparotomy

There was altered blood with clots amounting to 450ml in the right sub hepatic space. The liver appeared congested, hyperaemic and enlarged. Large intrahepatic sub capsular haematoma was noted mainly in the right lobe extending to segment IV with rupture of the capsule .

Due to uncontrollable bleeding from ruptured site of the capsule decided to pack the liver. Per-operative USS showed normal inflow and outflow. Then the patient was transferred to hepatobiliary Centre. Her aspartate aminotransferase (AST), alanine amino transferase (ALT) was 3456 u/l and 4500 u/l. Serum lactate level increased from 3.4 to 10. Patient was started on N-acetylcistidine infusion.

Patient started developing a temperature of 101 C after 24hours .Re-laparotomy and removal of packs was done at 48 hours due to increasing bladder pressure with reduced urine output and fever. No active bleeding from the liver was noted this time. However there was large sub capsular haematoma in both left and right lobe. Rest of the liver appeared viable. Due to the suspension of infected clot decided to go ahead with clot evacuation.

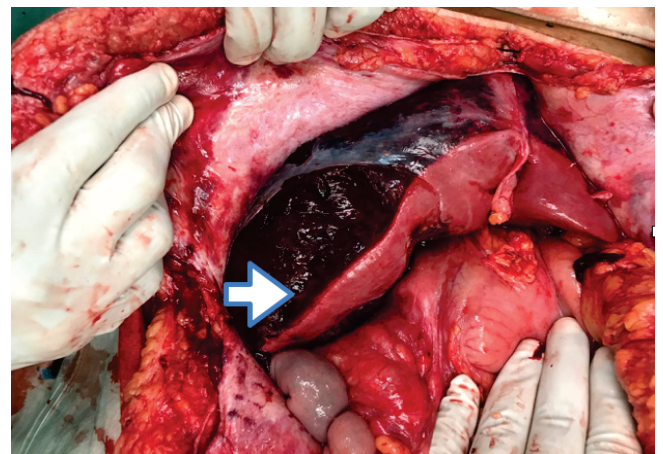



Figure 1. Contained haematoma after 48 hours (before the haematoma evacuation)-White arrow.

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Evacuation of the haematoma was done with blunt dissection using the sucker, irrigation and hydrogen peroxide. She was managed in the ICU for liver injury, acute kidney injury, and sepsis with septic shock. After two weeks of ICU care patient recovered from organ failure and transferred to general ward.

Discussion

LC is the gold standard treatment for symptomatic gall stones. However rare fatal complications are known to occur. ISH is such a rare complication. Liu, Q. F et al reported 16 cases from 1994 to 2015, there are other authors reporting similar complications^{1,2}.

The probable cause for haematoma is arguable. Use of intraoperative non-steroidal anti-inflammatory drugs (NSAIDs) such as ketorolac and diclofenac/low molecular weight heparin², other postulate accidental injury during insertion of the trocar, retraction of the gallbladder which causes the injury of the liver capsule and the manipulation of the liver during the dissection of the gallbladder¹ are some of the possible causes. However, in our patient NSAIDs or heparin had not been used. The liver appeared normal after the primary surgery. One possible explanation for late haematoma is the pressure of the pneumo-peritoneum.

The treatment is variable depending on the extent of haematoma, the patient's condition, value of the hemoglobin. Treatment is aimed at resuscitation, establishing diagnosis, controlling the expansion of haematoma and prevention of secondary complications of haematoma¹. Intra abdominal packing or use of selective embolization are common options in the case of active bleeding,^{4,6}. In some cases ultrasound guided percutaneous drainage was opted rather than a surgical intervention.

In our patient it was decided to evacuate the haematoma due to use of packs and the potential onset of sepsis. Our method was an open debridement using sucker and hydrogen peroxide. Previous authors have described clot evacuation by creating an opening in the friable capsule and clot evacuation by suction. Oxidized cellulose and haemostatic matrix had been applied over the decapsulated matrix to achieve haemostasis³.

Conclusion

LC can rarely lead to life-threatening ISH as seen in our patient. Communication and timely intervention leads to favorable results.

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Learning Points:

- Intrahepatic subcapsular haematoma is a rare complication following laparoscopic cholecystectomy.
- It is potentially life threatening.
- Intraabdominal packing can be life saving.
- Recording of surgical procedure will help in fact finding of this type of complications.