

SUBCAPSULAR LIVER HEMATOMA – A COMPLICATION AFTER LAPAROSCOPIC CHOLECISTECTOMY

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CASE REPORT

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Abstract

Subcapsular liver haematoma is among the most severe complications after laparoscopic cholecystectomy, but occurs rarely. The hematoma is usually located around the right lobe of the liver (in 75% of patients). We report the case of a 71 year old patient who underwent laparoscopic cholecystectomy for acute cholecistitis. Initial postoperative evolution was favorable. On postoperative day 3 patient presents intense abdominal pain and decreased hemoglobin. The CT shows subcapsular hepatic hematoma. Emergency surgery is performed for signs of hemorrhagic shock with evacuation of the hematoma and hemostasis. Postoperative evolution is good. There are several theories proposed for the occurrence of a subcapsular hematoma of the liver after laparoscopic cholecystectomy. Among these, the presence of a hemangioma, the use of NSAIDs or low molecular weight heparin. No clear mechanism is known and the only clinical sign can be abdominal pain. This case reminds us that we must take abdominal pain seriously after cholecystectomy in order to identify severe complications that can occur, such as hepatic subcapsular hematoma.

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Introduction

Cholecystectomy has remained the most common treatment for symptomatic gallstones. First cholecystectomy was performed in the second half of the 19th century by classic method [1],[2]. In time, surgical procedures have changed and the complications changed in consequence. Nowadays, the standard approach is laparoscopy, first introduced in Germany in 1985. First studies comparing laparoscopic and open procedures were made in 1991 by

Southern Surgeons Club, which showed a smaller number of surgical complications, as well as reduced mortality during laparoscopic surgery [3]. In case of laparoscopic cholecystectomy, the most common complications occurring during peri or early postoperative period include: lesions of the bile duct, bleeding, bile duct leakage, lesions of the intestine, perforation of the gallbladder and choledocholithiasis [4-9]. Subcapsular liver hematoma is among the most severe complications, but occurs rarely. A subcapsular hematoma of the liver is an

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accumulation of blood between Glisson's capsule and the liver parenchyma; rupture into the peritoneum has a 75% mortality rate. The hematoma is usually located around the right lobe of the liver (in 75% of patients) [10],[11].

Case report

A 71 year old female patient, previously untreated, underwent emergency laparoscopic surgery for symptomatic cholelithiasis with suspicion of choledocholithiasis. The indication was laparoscopic cholecystectomy with subsequent ERCP if CBD lithiasis was confirmed. Pneumoperitoneum was created using a Veress needle. When we inserted the optical port, we found gangrenous cholecystitis with localized biliary peritonitis. We performed, with difficulty, bipolar cholecystectomy. The CBD was slightly dilated thus cystic duct drainage was performed. Initial evolution was favorable. 72 h after surgery the patient presented intense abdominal pain, with tachycardia and normal blood pressure. Laboratory tests showed a decrease in the level of hemoglobin from 12.08 to 10.77 g%. The abdominal pain was resolved with analgesic and anti-inflammatory drugs. Two days later the patient continued to have intense pain thus we performed a CT scan that showed subcapsular hepatic hematoma of 8.9/4.3 cm, right lobe liver laceration in segment 6- subcapsular hilum of 3/2.2 cm and intrahepatic hematoma segment 7 of 5.2 cm (Figures 1- 6).

She received blood transfusion, but the decrease of hemoglobin from 8.4 to 6.2 g% in the same day together with signs of hemorrhagic shock, were the reason for which emergency laparotomy was decided. Intraoperative, minimally ruptured subcapsular hematoma was diagnosed, involving the right lobe of the liver, without bleeding from the gallbladder site or cystic stump. There was a small amount of blood in the peritoneal cavity. The decision was to

evacuate the hematoma, hemostasis and liver packing (Figure 7, 8).

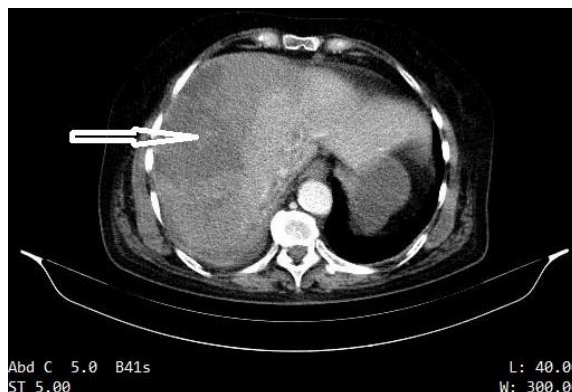


Figure 1 – Right lobe liver laceration in segment 6

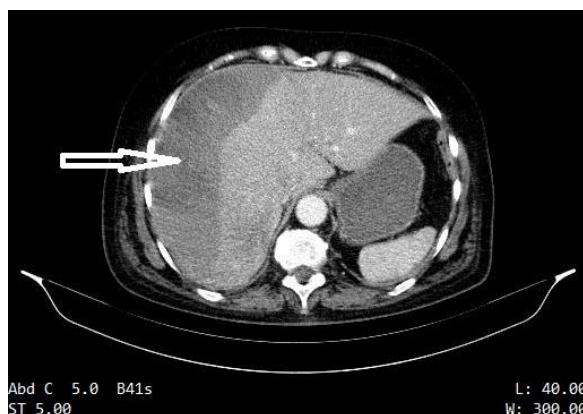


Figure 2 – Subcapsular hepatic hematoma



Figure 3 – Subcapsular hepatic hematoma and intrahepatic hematoma towards the hepatic hilum

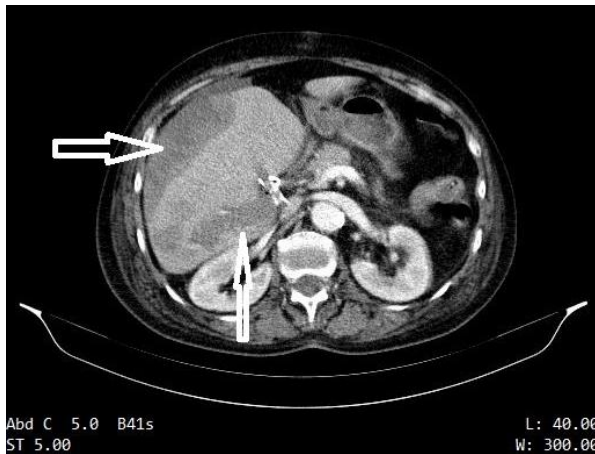


Figure 4 - Subcapsular hepatic hematoma and intrahepatic hematoma towards the hepatic hilum

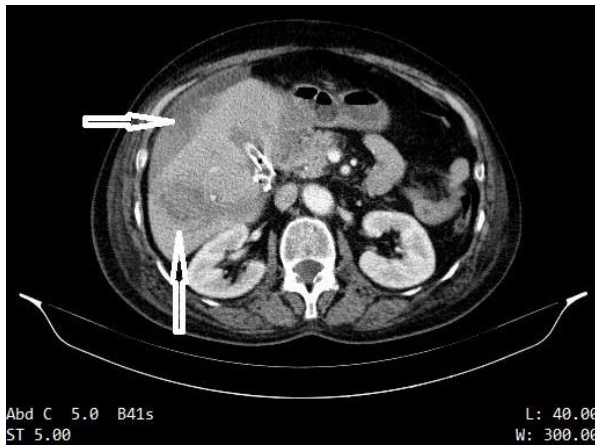


Figure 5 - Subcapsular hepatic hematoma and intrahepatic hematoma towards the hepatic hilum



Figure 6 – Intrahepatic hematoma segment 7

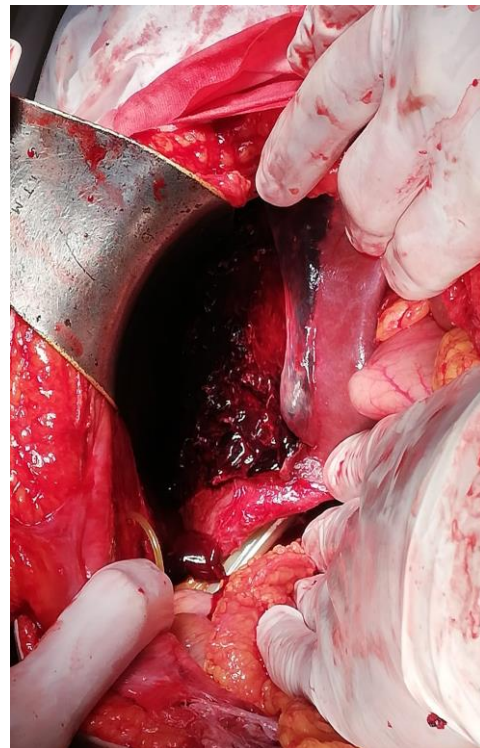


Figure 7 – Intraoperative aspect: ruptured and partially evacuated subcapsular hepatic hematoma



Figure 8 – Intraoperative aspect: ruptured and partially evacuated subcapsular hepatic hematoma

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Packing was removed after 72 hours. On palpation of the liver, the intraparenchymatous hematoma could not be identified (Figures 9, 10).



Figure 9 – Intraoperative aspect at reintervention – no significant bleeding after packing removal

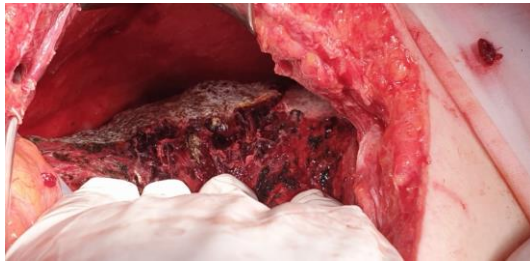


Figure 10 – Intraoperative aspect at reintervention – complete hemostasis achieved with fibrin hemostatic patch

The postoperative evolution was favorable. The CT scan at two weeks post surgery still showed the images of intrahepatic hematoma and laceration in 6th segment (Figures 11, 12, 13, 14).



Figure 11 – Minimal residual subcapsular hepatic hematoma

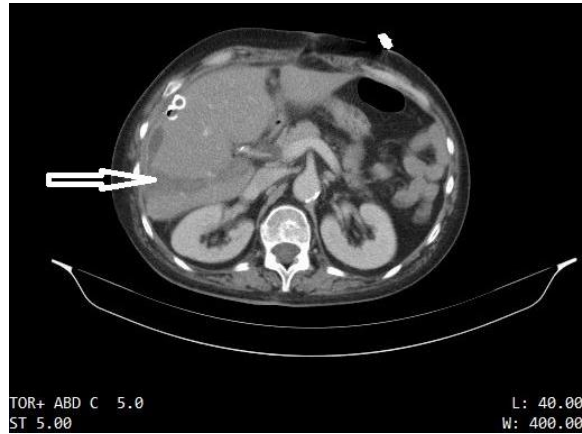


Figure 12 – Intrahepatic hematoma towards the hepatic hilum

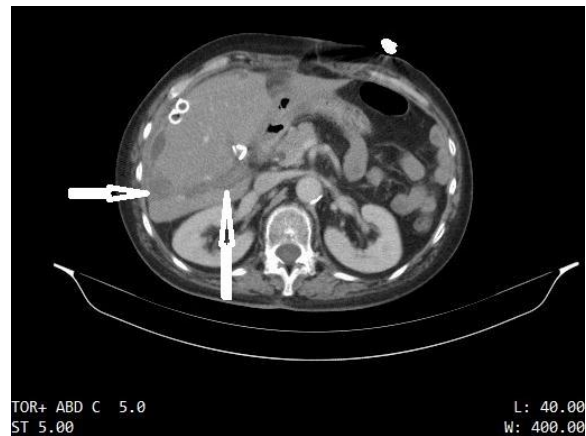


Figure 13 – Intrahepatic hematoma towards the hepatic hilum



Figure 14 – Intrahepatic hematoma segment 6

Same aspect was seen on abdominal ultrasound (Figure 15, 16, 17).



Figure 15 - Interhepatodiaphragmatic hematoma

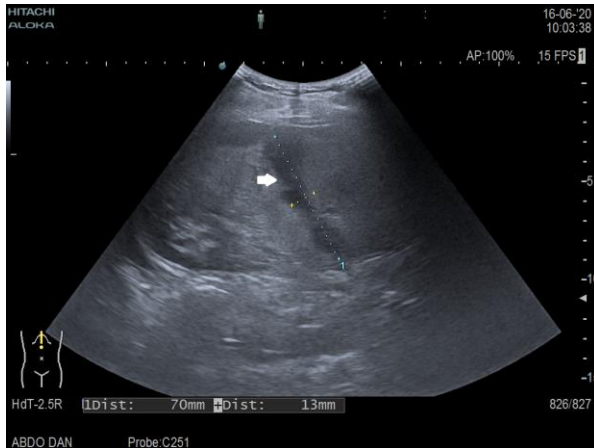


Figure 16 - Intrahepatic hematoma towards the hepatic hilum



Figure 17 - Hematoma segment 6

The patient did not develop fever, chills or leukocytosis and was discharged on the

32nd postoperative day after tube cholangiography revealed no CBD lithiasis. On follow up, at two weeks after discharge, the ultrasound showed further improvement, with partial resorption of the hematomas and favorable evolution of the patient (Figures 18, 19, 20).



Figure 18 - Interhepato-diaphragmatic hematoma



Figure 19 - Intrahepatic hematoma towards the hepatic hilum

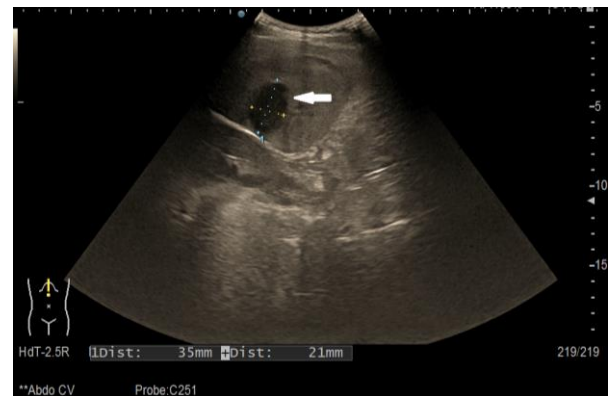


Figure 20 - Hematoma segment 6

Further follow up is required with ultrasound examination every two weeks and CT scan at 3 months.

Discussion

Laparoscopic cholecystectomy is the method of choice in acute cholecystitis, considered as safe as the open approach [12]. The most common complications are hemorrhage, biliary peritonitis, common bile duct lesions, residual lithiasis. Severe complications occur in approximately 2.6% of cases [15]. Postoperative hemorrhage is rare (0.08-2%) [10],[14] and is due to the gallbladder site, trocar insertion, cystic artery, falciform ligament and rupture of the liver capsule [13].

Hepatic subcapsular hematoma is rare and it is a severe complication of laparoscopic cholecystectomy that may occur within the first days after the procedure.

In our case, the patient presented diffuse abdominal pain, tachycardia and decreased hemoglobin levels. Ultrasound evaluation and CT confirmed the diagnosis of subcapsular hematoma. Similar cases have been reported in patients with hepatic subcapsular hematoma after laparoscopic cholecystectomy. Patients may also show signs of bleeding if the capsule ruptures with massive hemoperitoneum. Also, the hematoma can be infected by bacterial translocation, with patients showing fever, abdominal pain and signs of sepsis [16], and ultrasound evaluation or CT can diagnose the infected hematoma.

In our case, the probable cause of the hematoma is the retraction of a cystic branch into the hepatic parenchyma with intrahepatic hematoma that dissected the parenchyma and then was located under the Glisson's capsule (hepatic laceration would explain this mechanism). This may be due to incorrect manipulation of the gallbladder or intraoperative liver lesions and defective hemostasis.

As other causes of hepatic subcapsular hematoma after cholecystectomy, the presence of a hemangioma has also been described, which during the manipulation of the liver can tear, thus producing the subcapsular hematoma. In our case, no hemangioma was found intraoperative and also, preoperative ultrasound and MRI did not show the presence of a hemangioma.

Another possible cause could be the administration of non-steroidal anti-inflammatory drugs such as Ketorolac [10], [18],[19] together with a low molecular weight heparin. This has been associated with a number of cases admitted for postoperative pain.

Also a possible cause could be the insertion of the trocar [17], the excessive traction of the gallbladder which causes the injury of the liver capsule and the excessive manipulation of the liver during the dissection of the gallbladder.

The treatment of hepatic subcapsular hematoma depends on the patient's condition, the size of the hematoma and the value of the hemoglobin. In our case, the patient showing signs of hemorrhagic shock, with progressive decrease of hemoglobin, and CT examination that revealed the hematoma, emergency surgery was decided. If the patient's condition allows, conservative treatment can be attempted, its resorption could be expected in the case of a small hematoma. Also ultrasound-guided percutaneous drainage can resolve the hematoma [11]. In case of hematoma infection, the treatment of choice is percutaneous drainage under CT or ultrasound guidance together with the administration of antibiotic treatment [16], [20]. There are cases cited where the vessel was embolized in active bleeding [16]. There are few articles in literature that describe such a severe complication after laparoscopic cholecystectomy. There is still no universally accepted theory regarding cause, treatment or outcome [21-25].

Conclusion

Few cases of hepatic subcapsular hematoma after laparoscopic cholecystectomy have been described in literature. Hepatic subcapsular hematoma is a very rare but serious complication that endangers the patient's life. This case reminds us that we must not disregard intense abdominal pain after cholecystectomy for it may be the sign of severe complications such as hepatic subcapsular hematoma. Imagistic and biological monitoring in cases of clinical suspicion is extremely important.

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