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Closed Abdominal Trauma with Isolated Gallbladder Injury

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SUMMARY Clinical observation of closed abdominal trauma and isolated gallbladder injury is discussed. The frequency of occurrence and risk factors for the development of gallbladder injury are presented.

Keywords: closed abdominal trauma, rupture of the gallbladder, intra-abdominal bleeding, cholecystectomy

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BSDK - large duodenal papilla

GB - gallbladder

INTRODUCTION

Isolated damage to the gallbladder (GB) with abdominal trauma occurs in 1–1.81% of cases [1–5].

Risk factors for rupture of the GB include spasm of the sphincters of the large duodenal papilla (BSDK) and increased pressure in the bile ducts as a result of heavy alcohol intake, complications of cholelithiasis, liver cirrhosis [1, 5]. Injury to the GB can be suspected at the stage of examination using radiation diagnostic methods [4–7] and, as a rule, is finally confirmed only after laparotomy, which is performed for the acute abdomen syndrome. [7].

A few publications describe the successful treatment of gallbladder injury by endoscopic stenting of the common and hepatic bile ducts with its preservation [8]. Typically, cholecystectomy is performed for GB injury [1, 2, 7].

Clinical observation.

Patient V., 64 years old woman, was admitted on June 30, 2019 to the Irkutsk Regional Clinical Hospital. According to relatives, probably in a state of alcoholic intoxication, she fell from her own height. She was found unconscious, taken to the emergency room by an ambulance to rule out stroke or acute coronary syndrome. Neurologist and cardiologist on duty excluded acute cardiovascular pathology. The general condition of the patient is grave, she is conscious, disoriented, does not remember the circumstances of the injury. Body temperature 36.8°C. The position is passive. The subcutaneous fat layer is overdeveloped. The skin and visible mucous membranes are pale pink. Respiratory rate - 16 per minute. Palpation of the chest is painless. Clear lung percussion sound. Breathing is vesicular. No wheezing or pleural friction noise. Heart rate - 80 per minute, blood pressure - 130/80 mm Hg. Tongue in the root area is coated, dry. The abdomen is enlarged due to massive subcutaneous fat. On palpation of the anterior abdominal wall, the maximum pain is in the right hypochondrium. Free fluid in the abdominal cavity is not detected. Symptoms of peritoneal irritation are questionable. The liver does not protrude from under the edge of the costal arch. The spleen is not palpable.

Laboratory data. Complete blood count: leukocytes - 22.2x10⁹, erythrocytes 4.03x10⁹, hemoglobin 108 g/l. Amylase - 20 IU/L, total bilirubin - 20.4 μmol/L, direct bilirubin - 12.1 μmol / L, glucose - 9.3 μmol / L.

An ultrasound examination of the abdominal cavity was performed: the dimensions of the GB were 10.8x5.7 cm, of the usual form. The wall is 0.6–0.7 cm thick. The gallbladder lumen is inhomogeneous with hyperechoic structures up to 2.0 cm in size with an acoustic shadow. An accumulation of fluid with a thickness of 0.4-0.5 cm is located paravesically.

To clarify the diagnosis, a multispiral computed tomography was prescribed, according to the results of which, under the right lobe of the liver, spreading to the bed of the GB and the hepatic hilum, a heterogeneous content is determined, up to 161x76x83 mm in size, with a density of 5–68 units H, gallbladder is ovoid, in its lumen a calculus up to 5 mm in diameter is visualized, with a density of up to 787 units H. An injury to GB was suspected.

According to urgent indications, a median laparotomy was performed. In the abdominal cavity up to 300 ml of blood with clots mixed with bile, gallstones. A large omentum imbibed by blood is fixed under the liver, on the surface of which there are a large number of gallstones (Fig. 1).

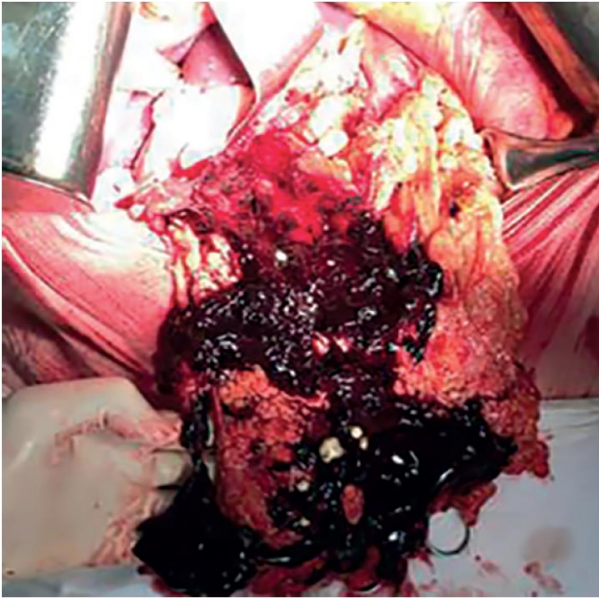


Fig. 1. The greater omentum with blood clots and calculi

After its resection, a gallbladder was found with a thickened wall and its defect measuring 3x2 cm (Fig. 2), from which blood clots and multiple calculi were coming.

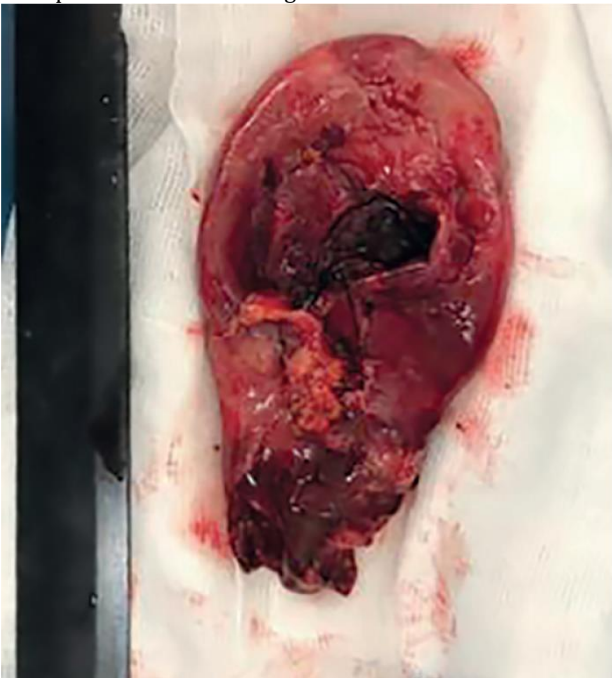


Fig. 2. The excised gallbladder

There are no other injuries to internal organs. Cholecystectomy was performed from the cervix. Sanitation, drainage of the abdominal cavity. Diagnosis after surgery: "Closed abdominal trauma, rupture of the gallbladder. Hemoperitoneum, a widespread serous peritonitis with an admixture of bile. Cholelithiasis".

The postoperative course was severe, the stabilization of the patient's state was continued in the conditions of the intensive care unit, artificial ventilation of the lungs was carried out for 8 days. The drains from the subhepatic space were removed on the 6th day. The patient was discharged from the hospital on the 19th day in a satisfactory condition.

The histological conclusion: a strand of the greater omentum weighing 219 g with hemorrhages. Gallbladder measuring 10x13 cm, the wall is brown, flabby, with a gap of 4.5 cm, a gallstone in the lumen, histological examination: wall edema, hemorrhages, fibrin, disintegrating neutrophils.

DISCUSSION

At the prehospital stage, the diagnosis of intra-abdominal trauma was not established due to the lack of accurate information about the circumstances that led to the loss of consciousness. There were no skin lesions or hemorrhages. In the hospital, due to retrograde amnesia, it was not possible to find out the patient's history. Clinical signs of abdominal trauma with damage to internal organs were not expressed: moderate abdominal pain, moderate pain in palpation of the anterior abdominal wall were noted. This was due to a short time interval from the moment the bile and blood entered the abdominal cavity, the absence of a pronounced inflammatory reaction of the peritoneum.

Diagnostic search using radiation methods revealed fluid in the subhepatic space, changes in the wall of the GB and its possible rupture. Most importantly, the diagnosis "acute abdomen" was established, and surgical treatment was performed in a timely manner.

CONCLUSION

In the above observation, the main reason for the rupture of the gallbladder in abdominal trauma (falling from the height of patient's own growth), possibly, was intravesical hypertension (hydrostatic shock) as a complication of cholelithiasis. According to the histological study, it is possible that we are talking about acute cholecystitis with destruction of the gallbladder wall. The indication for urgent surgery was the clinic of "acute abdomen", hemoperitoneum. The operation confirmed the data obtained by radiation methods of research.

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