Septate gallbladder necrosis: A case report

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Abstract

Introduction: The septate gallbladder is a rare abnormality with either multiple septums or a single septum. In our case, a 32-year-old male patient was admitted to the hospital for right upper quadrant abdominal pain accompanied by fever. Abdominal CT scan show acute cholecystitis, no gallstones. Preoperative diagnosis: Acute cholecystitis suspected peritoneal biliary infiltration, indicated for emergency laparoscopic cholecystectomy. Intraoperative, the septate gallbladder is enlarged, the wall is thick, and the duodenum is attached. In particular, the fundus compartment of the gallbladder showed necrosis. There were no complications during surgery.

Conclusions: The septate gallbladder can cause complications of gallstones, cholecystitis and especially gallbladder necrosis as in our case. Ultrasonography can detect this abnormality, so careful examination is necessary to avoid omission, especially in the case of patients with recurrent right upper quadrant pain but no gallstones.

Keywords: The septate gallbladder, gallbladder necrosis, cholecystitis.

Introduction

The septate gallbladder is a rare abnormality, which may be multiple-septum (honeycomb gallbladder) or single-septum (also known as septate gallbladder).[1] Septate gallbladder was first reported by the author Knetsch in 1952 and to date, about 150 cases have been reported worldwide.[2, 3] Septate gallbladder causes can be congenital or acquired.[3, 4] This condition is little known because it exists in the asymptomatic form and is discovered incidentally on abdominal examination. More rarely, a septate gallbladder can cause recurrent acute abdominal pain or gallstones.[5] For patients with these symptoms, medical therapy's efficacy is unclear, while cholecystectomy is a radical treatment even in septate cholecystitis without gallstones.[6] Complications of the septate gallbladder must be identified early and treated promptly, otherwise, they can cause serious conditions such as gallbladder necrosis or even death. In our case, a septate gallbladder necrosis was detected during surgery.

Clinical case

A male patient, 32 years old, was admitted to the hospital with right upper quadrant abdominal pain on day 2, accompanied by fever. This is an acute pain which is severe and constant. The patient has had similar pain several times for 3 years and has no other special history. On physical examination, there was an infection syndrome, severe right upper quadrant abdominal pain, and abdominal guarding.

Tests: WBC 16.04 G/L, % Neu 88.8%. AST, ALT, Bilirubin and other tests were within normal limits. Abdominal ultrasound showed acute cholecystitis with no gallstones. The abdominal CT scans also gave similar results (Figure 1). These tests show that the patient has cholecystitis.

Figure 1. Cholecystitis on abdominal CT scan

Figure 2. Duodenum adherent to the gallbladder

Preoperative diagnosis: Acute cholecystitis suspected peritoneal biliary infiltration, indicated for emergency laparoscopic cholecystectomy. Surgical procedure: Inserting 03 trocars into the abdomen, PCO2 12mmHg, observed gallbladder divided into 2 compartments, gallbladder distended, gallbladder wall thickened and adherent to the duodenum, great omentum (Figure 2). In particular, the fundus compartment of the gallbladder showed necrosis (Figure 3). No gallbladder torsion was seen. Other organs in the abdomen were not found abnormal. Perform dissection and cholecystectomy. There were no complications during surgery. After surgery, the patient was feed at the 12th hour and discharged on the 3rd day.

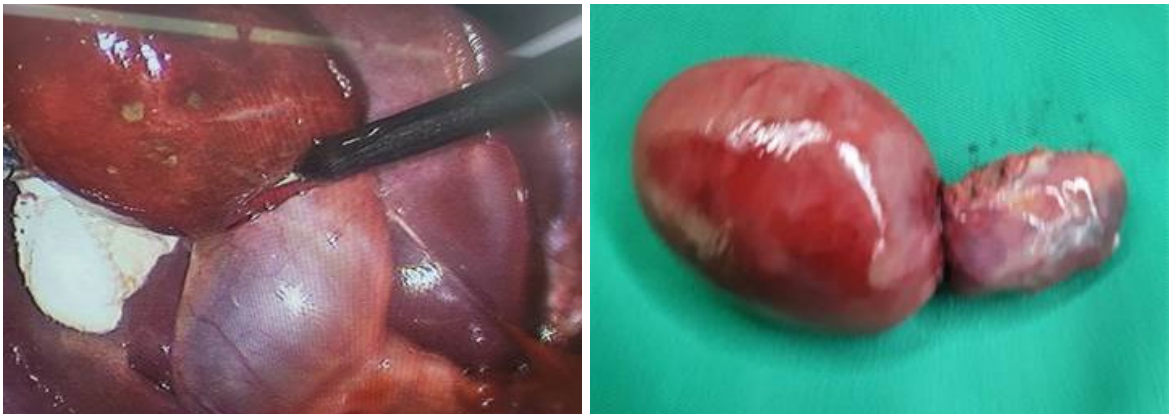

Figure 3. Fundus compartment necrosis

Discussion

According to the embryological hypothesis, the septate gallbladder most likely results from the incomplete resolution of the solid stage of gallbladder development that is present before the third fetal month.[7, 8] On histopathological examination of these congenital septate gallbladders, the section through the septum shows smooth muscle fibres, similar to the section through the rest of the gallbladder wall (Figure 4).[9] On the other hand, the septate gallbladder may also be acquired. Author Sasaki reported 2 cases of septate gallbladder secondary after cholecystitis.[10] When evaluated on histopathological images of these 2 cases, no smooth muscle fibres existed in the septum, This can be used to distinguish it from a congenital septate gallbladder. In another case, a 16-year-old boy had trauma to the abdomen with visceral injuries. He underwent chole-cysto-jejunostomy, and an abdominal ultrasound 1 year later showed multi-septations of the gallbladder, thus confirming the acquired form.[11] Preoperative ultrasonography and intraoperative evaluation of the gallbladder were normal. After 1 year of surgery, an ultrasound evaluation revealed a septate gallbladder. The authors suggested that this secondary septate gallbladder condition was caused by direct trauma to the gallbladder or by the outflow of substances in the gastrointestinal tract.

When the gallbladder is divided by a septum, it creates a septate gallbladder distinguish from a multiseptate gallbladder. If the septum divides the gallbladder vertically, it is called a 2-lobed gallbladder, if the septum divides the gallbladder horizontally, it is called an hourglass gallbladder.[7] A septate gallbladder is usually asymptomatic and is found incidentally during an abdominal examination.[12] In some cases, the septate gallbladder causes recurrent episodes of acute abdominal pain or complicates gallstones.[7] The reported cases of septate gallbladder requiring surgery have been associated with cholecystitis or the presence of gallstones. Gallstones are often concentrated in the fundus compartment, which may be caused by the two gallbladder compartments communicating only through a small hole, causing cholestasis and stone formation in the isolated compartment.

In our case, the patient had several episodes of right upper quadrant pain for 3 consecutive years. This time the patient was admitted to the hospital with more intense pain and fever. Intraoperative, we saw images of the duodenum, the great omentum adhered to the gallbladder. We evaluate the gallbladder has been inflamed many times, causing adhesions to surrounding organs. In this situation, the patient can get the septate gallbladder necrosis due to multiple time inflammatory adhesions recurrent in the gallbladder. At present, there are rare case reports of necrosis of the septate gallbladder.

(a) Fundus (b) Neck (c) the septum

Figure 4. Histology of the septate gallbladder [9]

Using abdominal ultrasound or abdominal CT scans can detect the preoperative septate gallbladder with varying levels of success.[9] In our case, preoperative ultrasound only detected cholecystitis without detecting septate gallbladder. However, in another case, the patient came to the clinic with abdominal pain in the right lower quadrant several times in 1 year, we found a septate gallbladder with gallstones by ultrasound (Figure 5). This patient was indicated for laparoscopic cholecystectomy, the postoperative results showed a septate gallbladder, the fundus compartment was filled with stones, and the mucosa was inflamed.

Figure 5. Abdominal ultrasound shows a septate gallbladder with gallstones

In our case, the gallbladder was necrotic but without gallstones. This is a point to note for surgeons when seeing patients with cholecystitis but no gallstones. Some articles support the indication of septate cholecystectomy for patients with septate cholecystitis without gallstones.[6]

Conclusion

The septate gallbladder may be asymptomatic but also cause complications of gallstones, cholecystitis and especially gallbladder necrosis, as in our case. Therefore, it is necessary to detect it in time to indicate a suitable treatment. Cautious ultrasonography is required to avoid omission, especially in the case of patients with repeated right upper quadrant pain but no gallstones.

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