

Gangrenous cholecystitis complicated by hepatic abscess and drained percutaneously.

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Section: Abdominal imaging

Case Type: Clinical Cases

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Patient: 64 years, female

Clinical History:

A 64-year-old female underwent ultrasound examination and was operated due to gangrenous cholecystitis. One month later she was reevaluated by ultrasound and computed tomography examination; a hepatic abscess was visualized and drained percutaneously.

Imaging Findings:

A 64-year-old female admitted to emergency department due to acute episodes of abdominal pain and vomitus. During the ultrasound examination, a Murphy sign was present. The gall bladder demonstrated an internal serpentine like hyperechoic structure attributed to necrotizing membrane due to gangrenous cholecystitis (Figure 1). In addition the cystic artery was enlarged. The patient underwent laparoscopic cholecystectomy. At reevaluation the cicatrices healed without reddening or widening of the scars. Blood cell count and blood hematocrit level were normal. Blood pressure and heart rate were also normal. Thus the diagnosis of hypovolemia due to bleeding from vascular or parenchyma organ injury and the infection was excluded. Bowel perforation was also excluded, the plain abdominal film was negative for free intra abdominal fluid or air. The postcholecystectomy syndrome (PCS) was included in the differential diagnoses due to absence of clinical signs. The only symptom presented was the felling of bad smell from the patient. A small right pleural effusion recognized, pointing to hepatic or right subdiaphragmatic lesion. An ultrasound showed a hepatic abscess with an associated pleural effusion (Figure 2). The patient was therefore referred to computed tomography examination which revealed an enlarged fluid collection between the liver and the right hemidiaphragm. This fluid collection was percutaneously drained (Figure 3). The fluid drained was purulent with intense odor, thick and with pale color. Culture of the fluid showed *Escherichia coli*. On the 5th postoperative day, the hepatic drain was removed. On the 15th postoperative day, the patient was discharged.

Discussion:

Laparoscopic cholecystectomy provides and effective treatment for most patients with symptomatic gallstones. The procedure however is surgically demanding and introduces specific risks unique to the laparoscopic surgery that are not present during the performance of open cholecystectomy. The most common indications for laparoscopic cholecystectomy are acute calculus and acalculus cholecystitis. Other indications include chronic calculus and acalculus cholecystitis, gallstone pancreatitis, symptomatic gallbladder polyps, non-functioning gallbladder, and gallstones in patients with sickle cell disease. Absolute contraindications include peritonitis, sepsis, bowel distension, and advanced pregnancy. Relative contraindications vary with surgeons experience may include advanced cholecystitis, cholangitis, common bile duct stones, acute pancreatitis, previous upper abdominal surgery, portal hypertension, bleeding disorders, and morbid obesity. The risk of laparoscopic cholecystectomy includes those of laparoscopy: bleeding (of the abdominal wall, and the omentum), injury (of the abdominal, retroperitoneal

vessel and solid visceral) perforation (of the gastrointestinal and bladder) and those: of cholecystectomy (gallbladder fossa bleeding, bile duct injury, bile leakage, pneumoperitoneum, and gallstone spillage into the abdominal cavity with subsequent abscess formation. These complications result in part from the limited technical constraints (tactile sensation, three-dimensional visualization, confined working space, etc) with the minimally invasive approach, thereby preventing their recognition. The biliary injuries in the patients who underwent a laparoscopic cholecystectomy were classified as follows: class 1, 8% (partial transection of the common bile duct); class 2, 21% (injury to the common hepatic duct due to clips or cautery); class 3, 54% (excision of a portion of the common duct and/or hepatic ducts); and class 4, 15% (damage to the right hepatic duct). The remaining 2% had cystic duct stump leaks or bile leaks from a duct in the liver bed. During laparoscopic cholecystectomy, it is common for bile and even stones to spill into the peritoneal cavity. The bile can be aspirated, the stones can be removed, and the peritoneal cavity can be irrigated. Despite the irrigation, if the spilled bile is colonized by bacteria, an abscess can develop. This is likely the cause of the abscess in this case. Most abscesses that develop after laparoscopic cholecystectomy are amenable to percutaneous drainage. Frequently during laparoscopic cholecystectomy, when stones are spilled into the peritoneal cavity, there is no attempt to retrieve them. In the vast majority of cases, there are no sequelae. Regardless of the nature of the biliary injury, the majority of them are not recognized during the initial laparoscopic cholecystectomy. Radiographic studies may be valuable in suggesting or confirming the diagnosis when not clinically evident. Plain films, contrast studies, ultrasound, and computed tomography (CT) all can be useful modalities in this area.

Differential Diagnosis List: Postoperative abscess secondary to superinfection of intraoperative bile leakage

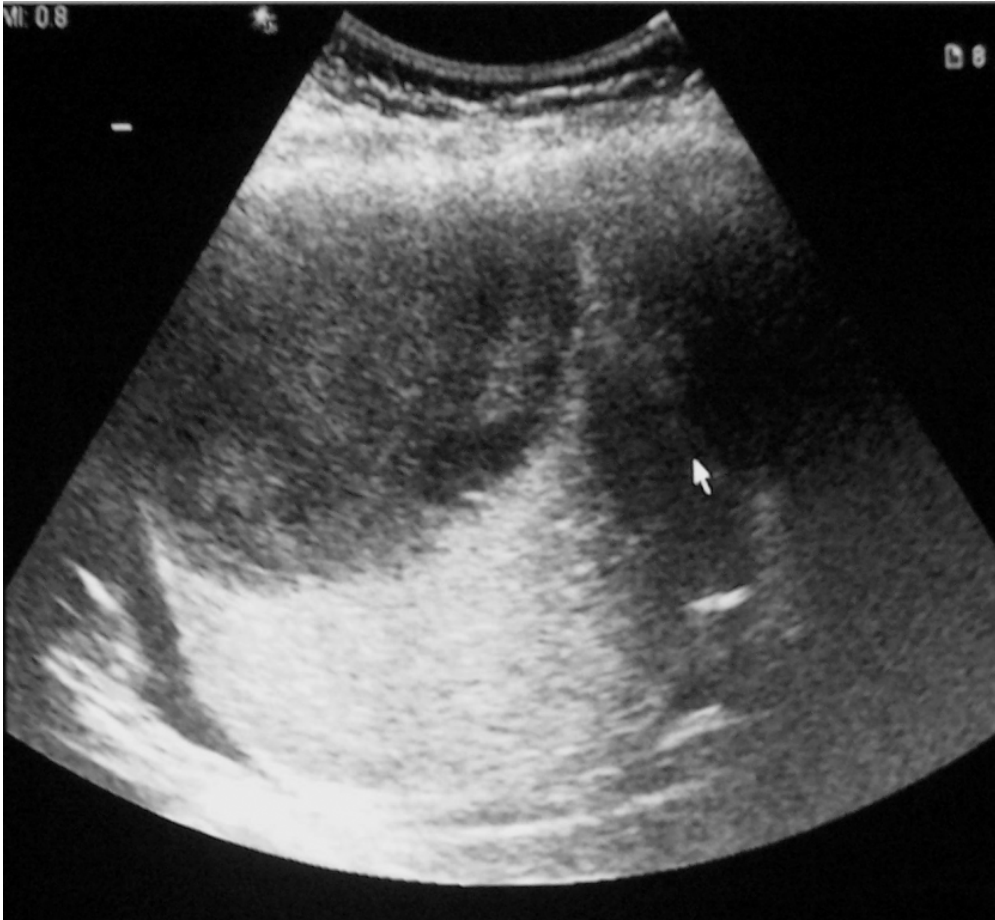
Final Diagnosis: Postoperative abscess secondary to superinfection of intraoperative bile leakage

References:

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Figure 1

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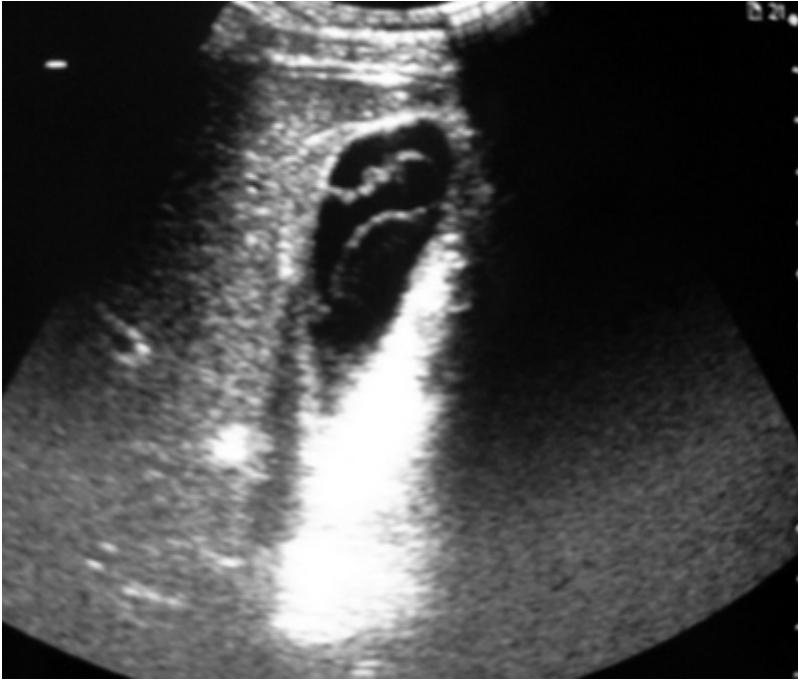
Description: Figure 2.

An enlarged heterogeneous hypoechoic lesion with internal hyperechoic foci and posterior enhancement depicted .

An associated pleural effusion was also observed **Origin:**

Figure 2

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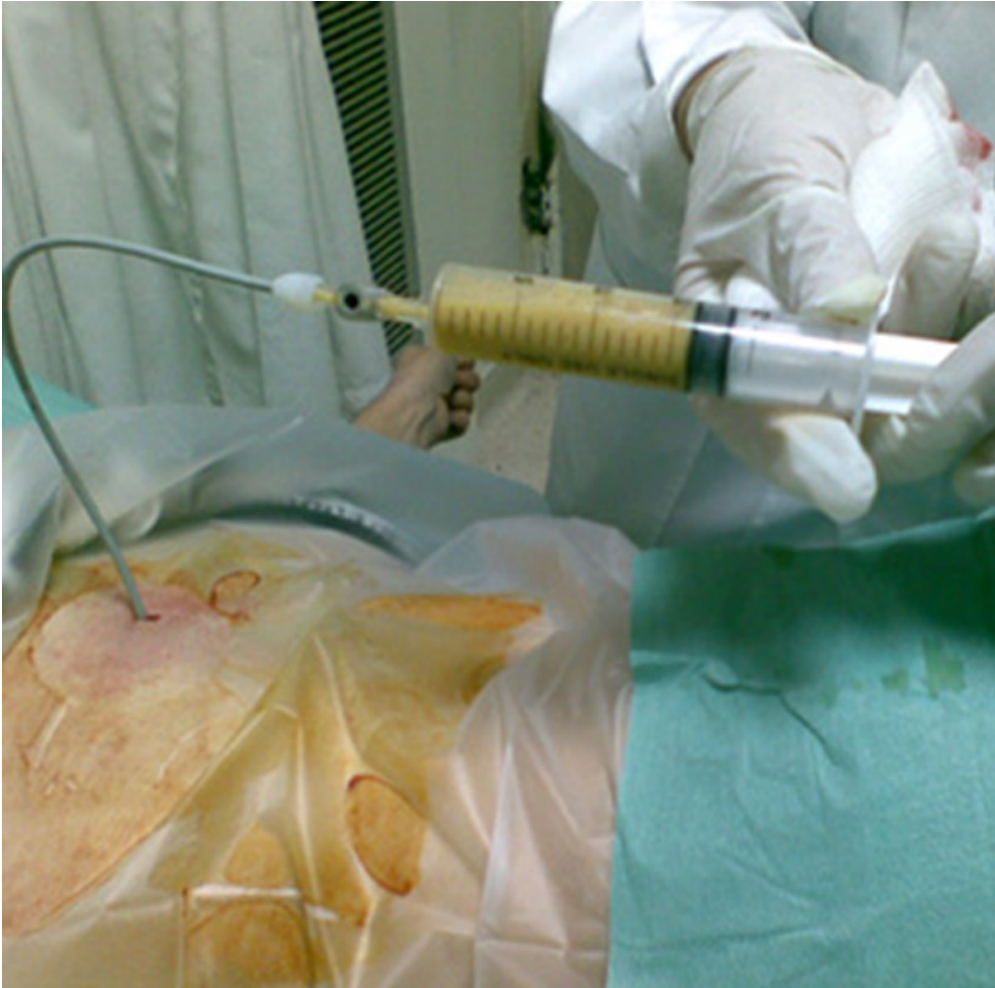
Description: Figure 1.

Linear intraluminal echo representing a sloughed membrane.

Gall bladder demonstrated with normal size, and wall thickness. **Origin:**

Figure 3

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Description: Figure 3. FNA biopsy. The fluid drained was purulent with intense odor, thick and with pale color. **Origin:**