**Case Report**

**Cholecystectomy for Gallbladder Perforation after ERCP**

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**Abstract**

Acute perforated cholecystitis (APC) is probably the most severe complication of acute cholecystitis. APC is a rare but potentially fatal complication of Endoscopic Retrograde Cholangio-Pancreatography (ERCP). Surgical dissection could be challenging with high risks of bile duct injury and conversion. The rates of morbidity and mortality are higher compared to those of patients without perforation. We report a 50-yr-old man with perforation of gallbladder that was diagnosed several days after undergoing ERCP for CBD stone extraction. After a few hours the patient presented with a severe abdominal pain, melena and hematemesis. Second ERCP + sphincterotomy showed a bleeding papilla along with copious amounts of pus oozing out of CBD. Elective surgery after 3 days revealed a visible perforation at body and fundus of gallbladder. The abdomen was filled with pus and fibrinous fluid. Cholecystectomy was done and the patient’s condition was good after surgery. To our knowledge, this is the first report describing perforation of gallbladder subsequent to ERCP.

**CASE REPORT**

In August 2016, a 55-yr-old man presented with right abdominal pain, radiating to right shoulder and accompanied by jaundice, general fatigue and nausea. The patient stated that he was suffering the pain since two weeks ago while jaundice flared a week after. Physical examination revealed no more than some tenderness in Right upper quadrant of the abdomen. The patient was a febrile. Significant abnormal laboratory tests were as follows: ALT 342 U/L (normal value 14 to 45 U/L), AST 119 U/L (normal value 14 to 45 U/L), alkaline phosphates 600 U/L (normal 43 to 122 U/L), total bilirubin 13.5 mg/dL (normal 0.2 to 1.4 mg/dL), direct bilirubin 8 mg/dL (normal 0 to 0.6 mg/dL) and ESR 40 mm/hr (normal 1 to 15 mm/hr).

Abdominal CT scan confirmed dilated intra and extra hepatic ducts demonstrated by abdominal sonography. A 7 mm echogenic area was reported at distal end of CBD and gallbladder was filled with multiple stones. ERCP performed to extract the CBD stone was successful (Figure 1). He was discharged the next day.

24 hours later he returned to the emergency department complaining of sudden RUQ abdominal pain radiating to RLQ followed by melena and hematemesis. The apparently ill patient had fever and was icteric; however the abdomen was flaccid on physical examination. Polymorpho nuclear leukocytosis (19.2 × 10⁹/mm³) was reported on laboratory tests. Endoscopy showed an actively bleeding papilla which was controlled by means of epinephrine injection therapy (Figure 2). Second ERCP with precut sphincterotomy allowed access to the common bile duct. Copious pustular secretions were removed after placing a 10F stent within the CBD (Figure 3). No extravasation was detected (Figure 4). Despite antibiotic therapy fever, leukocytosis and abdominal tenderness persisted. The patient was transferred to surgical ward and was electively operated for cholecystectomy three days later. Abdomen was filled with abundant pus and fibrinous secretions. Omentum was shifted to RUQ and around the gallbladder. Visible perforation was reported in body and fundus of gallbladder.

![Figure 1](image1.jpg)

**Figure 1** A balloon was inserted to extract the CBD Stone (arrow).  
View of the stone dropping from papilla.
Pathologic findings of a gangrenous gallbladder were: ulcerative epithelium; infiltration of chronic inflammatory cells; hemorrhage throughout the wall and subserosal fibrosis. The patient was discharged four days after the surgery. The patient’s condition was good after surgery.

**DISCUSSION**

Perforation is a rare but serious complication of ERCP.

Three types of perforation complicating endoscopic retrograde cholangiopancreatography (ERCP) are most frequently recognized: [1,2] retroperitoneal duodenal perforation; free bowel-wall perforation; Perforation of the bile ducts. Of these, retroperitoneal duodenal perforations are the most common. They usually occur as a result of a sphincterotomy that extends beyond the intramural portion of bile duct. Perforation of the bile ducts usually occurs following dilation of strictures, forceful cannulation, and guidewire insertion, or stent migration [3]. Some less common forms of perforation have also been described: Intestinal perforation related to late biliary stents; Sigmoid colon perforation as a consequence of bowel air distension and diverticular disease [2]; Cystic duct perforation as a complication of endoscopic stone extraction in a patient with chronic cholecystitis and dense adhesions [4].

Perforation of the gallbladder is more often associated with acute cholecystitis and laparoscopic cholecystectomy [5, 6]. Gangrenous cholecystitis has been rarely reported following ERCP [7]; rare cases of perforated gallbladder have also been reported following steroid therapy [8].

To the best of our knowledge, there has been no report of post-ERCP perforated gallbladder so far. This may be regarded as a very rare complication of ERCP; however, proof of that would require more cases. On the other hand, one should consider that a stone-filled gallbladder was reported on abdominal sonography which raises the question whether the perforation was the result of a cholecystitis.

**REFERENCES**


