



Management of bile leak from subvesical duct (duct of Luschka) during laparoscopic cholecystectomy

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A 60-year-old woman with resolved biliary pancreatitis was scheduled for interval laparoscopic cholecystectomy. Before surgery, her vital signs were normal and physical examination findings were unremarkable. There was no associated comorbidity. Her liver function test and serum amylase level were within normal limit. A recent abdominal ultrasound scan had revealed a solitary stone impacted at the neck of the gallbladder. At laparoscopic cholecystectomy, pericholecystic omental adhesions and a thick-walled gallbladder were encountered. The procedure was completed after the dissection of the Calot's triangle and division of the cystic duct and artery.

Intraoperative inspection of the gallbladder revealed continuous bile leak from a small subvesical duct (duct of Luschka) (Figure 1). Clipping (Ligaclip Extra; Ethicon Endo-Surgery, Puerto Rico, USA) the offending subvesical duct successfully managed the bile leak (Figure 2-4) (Supplementary video file 1). An abdominal drain was placed in the subhepatic region. The patient had an uneventful post-operative course. She was discharged on post-operative day 3 after removal of the abdominal drain. At 1-month follow-up, the patient was symptom-free and had normal liver function test results. The histopathological findings of the gallbladder specimen were suggestive of chronic cholecystitis.

Written consent was obtained from the patient for publication of this report and any accompanying images and video. Post-cholecystectomy bile leak can occur in 0.3%–2.7% of cases (1), with the most common sites of occurrence being cystic duct stump and aberrant subvesical duct (2). Approximately 27% of clinically significant bile leaks occur secondary to subvesical duct injury. Usually bile leak from subvesical duct tends to be minor and often resolves spontaneously. However, it may sometimes cause persistent bile leak, resulting in localized or generalized peritonitis with potentially life-threatening consequences (3).

Intraoperative detection of severed subvesical duct is rare and most cases present during the first postoperative week (2). Common presentations include abdominal distention, pain, fever, and occasionally jaundice.

When detected postoperatively, management includes control of sepsis, drainage of biloma, and decompression of the bile ducts. Endoscopic sphincterotomy and biliary stenting are highly effective in treating persistent bile leaks (4).

Intraoperative detection of subvesical duct injury provides a unique opportunity for timely control of bile leak and prevention of serious complications. Management of the bile leak from the subvesical duct can be achieved with sutures, clip, or fibrin glue. Clipping is a safe, effective, and fast way of managing bile leaks, if the duct can be clearly delineated.

In conclusion, a surgeon should be aware of the risk of subvesical duct injury during cholecystectomy and should be prepared to manage it tactfully if detected intraoperatively.

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Figure 1. Laparoscopic image showing bile leak from aberrant subvesical duct



Figure 3. The duct is grasped and gently pulled for proper use of the clip



Figure 2. Clip being applied after delineating the leaking subvesical duct



Figure 4. Aberrant subvesical bile duct after clip placement

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