

Extraction of surgical clip-induced “lollipop” choledocholithiasis

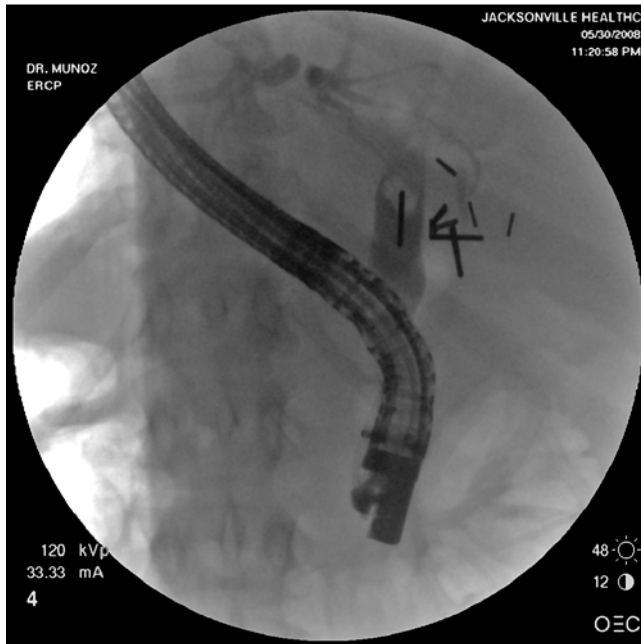


Fig. 1 Cholangiogram showing a metal surgical clip attached to an oval-shaped filled defect within the common bile duct.



Fig. 2 Endoscopic image of the dilation balloon through the ampulla of Vater.



Fig. 3 Rat-tooth forceps grasping the clip in the duodenal lumen during the extraction procedure.



Fig. 4 Rat-tooth forceps grasping the clip and the attached stone in the duodenal lumen during the extraction procedure.



Fig. 5 The extracted stone and attached clip within the duodenal lumen with a new biliary stent in place.

Foreign bodies arising from migrated surgical clips in the common bile duct (CBD) are rare. These usually occur following a cholecystectomy, with gallstone formation around the migrated surgical clip [1–3]. We describe the first successful endoscopic extraction, without sphincterotomy, of choledocholithiasis induced by a surgical clip. With the use of a balloon dilator and rat-tooth forceps, a complex CBD stone/foreign body was removed without complications.

A 57-year-old woman presented with a 1-day history of abdominal pain. On exami-

nation there was no fever, chills, or urine/stool discoloration. Her vital signs were normal except for elevated blood pressure. There were no signs of scleral icterus or chronic liver disease. The abdominal examination was significant only for epigastric tenderness on palpation. Multiple surgical clips in the right upper quadrant, consistent with a history of cholecystectomy 30 years earlier, were seen on plain abdominal radiography. An abdominal computed tomography (CT) scan revealed mild intra/extrahepatic ductal dilatation.

However, the patient's condition improved spontaneously and she was discharged with instructions to return on recurrence of pain or fever. After 4 weeks, the patient returned and repeat abdominal CT revealed increased dilatation of the CBD. Emergent endoscopic retrograde cholangiopancreatography (ERCP) demonstrated a single CBD defect with multiple surgical clips surrounding the duct. During balloon dredging, fluoroscopy suggested migration of one of the clips. The patient was transferred to our institution for repeat ERCP to determine the clip's location and, if possible, for extraction endoscopically.

ERCP demonstrated a dilated CBD (14 mm) and a luminal defect with multiple surgical clips at the level of the bifurcation; initially the clips were not mobile (● Fig. 1). The sphincter was dilated using a dilating balloon (● Fig. 2). The CBD was then swept with a retrieval balloon and an oval-shaped defect with an attached surgical clip was observed migrating distally. As the defect approached the papilla, further migration was not possible. The balloon was deflated and removed, and, because of the clip's orientation (distally in the CBD), a rat-tooth forceps was introduced inside the papilla to grasp it under fluoroscopic guidance, and the “object” was extracted carefully into the duodenum (● Figs. 3–5). The clip and attached stone measured approximately 12 × 15–18 mm (● Figs. 4, 5). A repeat cholangiogram immediately afterward indicated a clear CBD. Following removal, no further complications were reported.

In conclusion, in patients with biliary colic, pancreatitis, and/or cholangitis after cholecystectomy, migration of a surgical clip or clip-induced choledocholithiasis should be considered. Although ERCP with sphincterotomy remains the preferred diagnostic/treatment modality, if circumstances preclude or limit sphincterotomy, the method described here permits extraction, using available accessories.

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