

**DISCLOSURE**

*All authors disclosed no financial relationships.*

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**Commentary**

Lymphoceles can arise in the setting of trauma and damage to the native lymphatic ducts. This condition often results from surgical interventions, malignancy, or trauma that disrupts the normal route of lymphatic drainage. In this patient, a large lymphocele developed that extrinsically compressed the bile duct, resulting in obstructive jaundice. This was treated as if the lesion were a pseudocyst and was drained to the duodenum endoscopically, resulting in the resolution of the patient's symptoms.

Although in this case the authors observed a good outcome, drainage of a lymphocele in this manner can potentially result in a chronic lymphatic fistula to the luminal GI tract, which can have adverse consequences, affect fluid and electrolyte balance, and even potentially compromise renal function from fluid losses. The fluid in a lymphocele, as was true in this case, is often milky white, giving a clue to its origin. These are indeed rare lesions—in approximately 20 years of performing EUS I have encountered GI lymphoceles fewer than 1 dozen times.

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## Electrohydraulic lithotripsy–related thermal injury lesion of the biliary mucosa



An 88-year-old woman with putrid cholangitis underwent emergent ERCP including maximum-incision sphincterotomy and temporary stent insertion. Because cholangiography indicated a giant stone >22 mm in the common bile duct, which was dilated up to 25 mm, we scheduled direct cholangioscopy–guided electrohydraulic lithotripsy (EHL) 5 days later after resolution of the cholangitis. Freehand intubated direct cholangioscopy with an ultra-slim upper endoscope provided adequate visualization of a large common bile duct stone (**A**). After ample saline solution irrigation as a medium for shock wave application, the procedure was started with an Autolith Touch unit (Northgate Technologies Inc, Elgin, Ill, USA) with low-power, 5 pulses per activation as settings, occasionally producing clouds of biliary sludge (**B**, **C**).

At later stages, when larger, rather mobile EHL fragments were targeted, the settings were adapted to high power and 3 shots with continuous irrigation sustained, until only small EHL fragments easily extracted were left over. Only thereafter did a circumscribed thermal injury

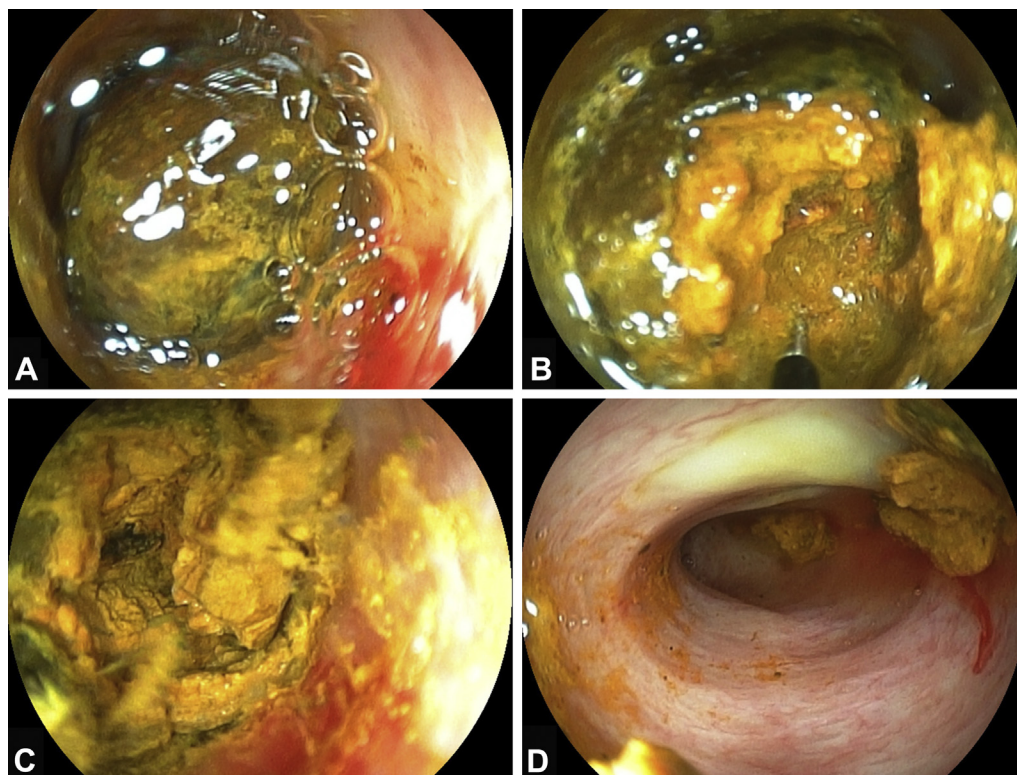
lesion of the biliary mucosa come to our attention, most likely representing inadvertent EHL-related ductal trauma, which remained without clinical sequelae (**D**). During the procedure itself, no apparent loss of visual control was noted; however, unnoticeable off-target shock wave transmission, visually obscured by underwater spark ignition during treatment of mobile EHL fragments near the bile duct wall, may not be excluded.

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### Commentary

EHL remains a widely used and highly effective tool for the fragmentation of large bile duct stones. Once fragmented, the individual stone fragments can be removed from the bile ducts with balloons, baskets, or a combination thereof. In theory, EHL is a noncontact technology; ie, the EHL probe is placed near the bile duct stone in a fluid-filled bile duct and an electric current is used to generate a shock wave. The shock wave passes through the fluid medium to the stone in question and results in its fragmentation.

The EHL probe, in theory, should also not come into contact with the bile duct walls because this could lead to duct injury, including perforation and stricture formation. Having performed EHL for many years, I suspect that in real-world scenarios, the EHL probe not infrequently comes into at least some degree of contact with the duct walls, given the confined nature of the space inside the bile duct, often without meaningful resultant clinical injury. This case illustrates injury to the bile duct wall from EHL contact. No long-term information is given, but it would be interesting to learn whether a stricture developed at the site of injury in this patient.

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