

Video Article

Laser lithotripsy with balloon enteroscopy-assisted peroral cholangioscopy for a large common bile duct stone after Billroth II gastrectomy

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BRIEF EXPLANATION

ENDOSCOPIC PROCEDURES FOR large common bile duct stones in patients with altered anatomy remain challenging, despite reports on direct peroral

cholangioscopy (POCS).^{1–4} Recently, a novel slim cholangioscope (9F eyeMAX; Micro-Tech, Nanjing, China) facilitated balloon enteroscopy-assisted POCS (BE-POCS).⁵

An 83-year-old man, after Billroth II gastrectomy, was admitted with a large common bile duct stone. BE-POCS

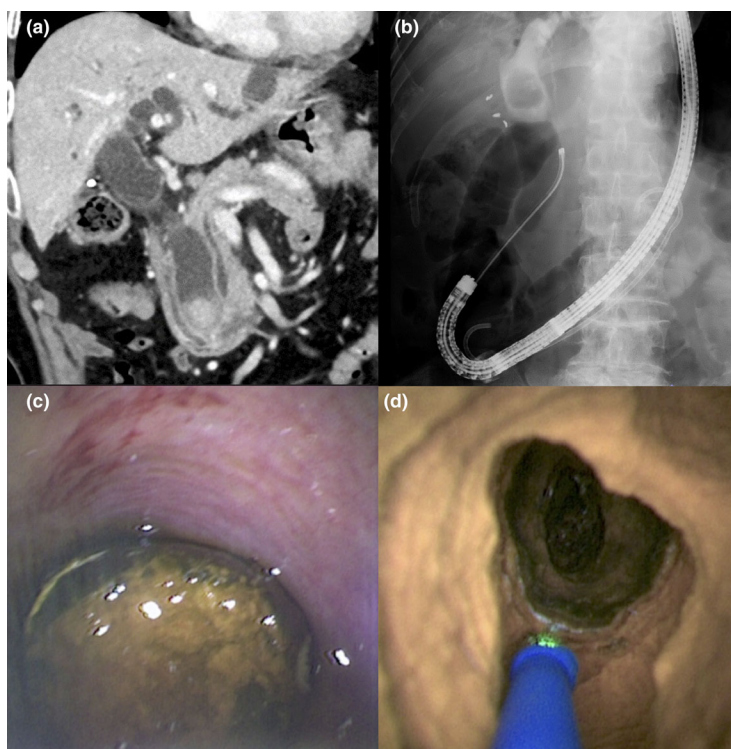


Figure 1 (a) Coronal plane of the computed tomographic image shows a large stone in the common bile duct. (b) A slim cholangioscope (9F eyeMAX; Micro-Tech, Nanjing, China) is inserted through the working channel of the SIF-H290S (Olympus, Tokyo, Japan). (c) Cholangioscopy shows a large stone in the common bile duct. (d) Holmium YAG laser lithotripsy can crush the stone core.

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Received 8 April 2024; accepted 25 June 2024.

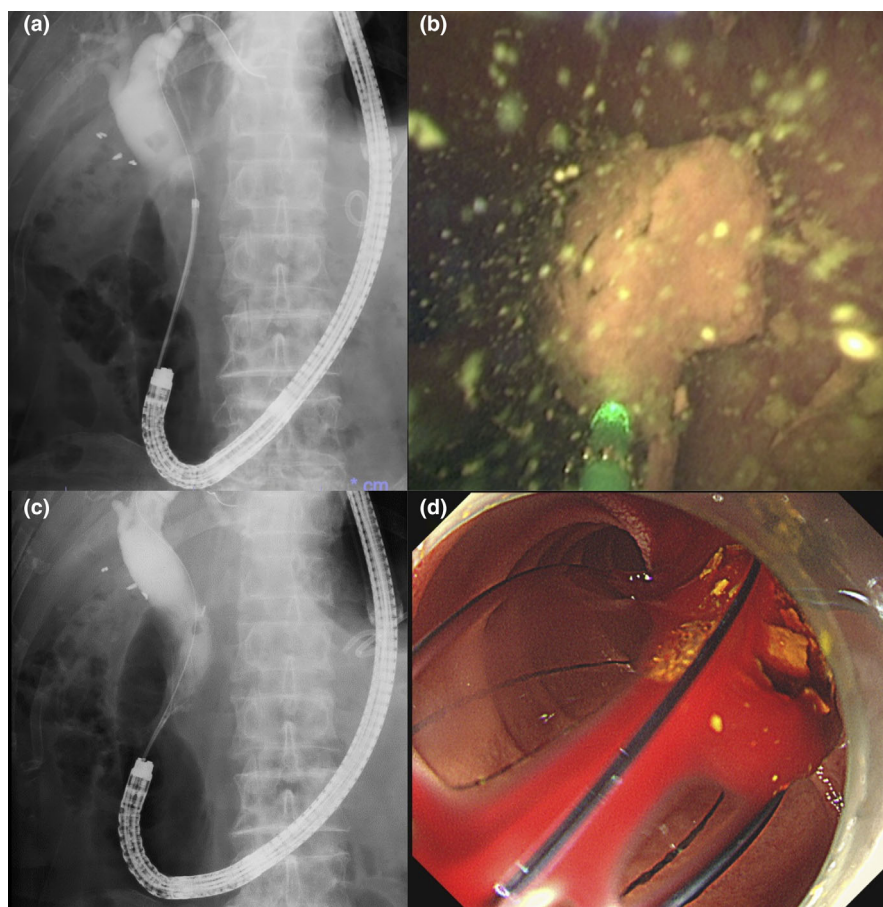


Figure 2 (a) Fluoroscopic image shows a residual stone in the common bile duct. (b) The green color of the laser is helpful for detecting the tip of the probe. (c) The fragmented stones are removed using a spiral-shaped basket catheter. (d) Small fragments are extracted using a microbasket catheter.

using a Holmium YAG (Ho:YAG) laser was employed for stone removal (Video S1). A balloon enteroscope (SIF-H290S; Olympus, Tokyo, Japan) was inserted into the afferent loop, and cholangiography revealed a large stone (15 mm) in the dilated common bile duct (20 mm). After papillary balloon dilation (15 mm), 9F eyeMAX was smoothly inserted via enteroscopy. A large stone was located in the hepatic hilum. Ho:YAG laser (LithoEVO; EDAP TMS, Lyon, France) lithotripsy effectively crushed the stone core under cholangioscope guidance (Fig. 1). The irrigation ability was sufficient to maintain a clear view because of a separate irrigation channel. A basket catheter (LithoCrush V; Olympus) was used to remove the fragments; however, the largest piece could not be extracted, and mechanical lithotripsy failed. A plastic stent was placed

until the second session because of the procedure length (100 min). One month later, the largest fragment was completely crushed using the Ho: YAG laser to prevent basket impaction (Fig. 2). The green color of the laser helped detect the probe tip during the procedure. The fragmented stones were removed using a spiral basket catheter (KANEKA Medics, Tokyo, Japan). Cholangioscopy confirmed no residual stones in the intrahepatic bile ducts. Finally, small fragments were extracted using a microbasket catheter (ABIS, Hyogo, Japan) (60 min).

This is the first report of laser lithotripsy with BE-POCS for a patient with Billroth II gastrectomy. Ho:YAG laser lithotripsy using a slim cholangioscope is useful for treating difficult stones in patients with altered anatomy.

Authors declare no conflict of interest for this article.

ACKNOWLEDGMENTS

WE THANK THE patients involved in this report.

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SUPPORTING INFORMATION

ADDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

Video S1 Holmium YAG laser lithotripsy with balloon enteroscopy-assisted peroral cholangioscopy was effective in removing a large stone in a patient who underwent Billroth II gastrectomy.