

Rescue of a biliary extraction basket impaction using argon plasma coagulation

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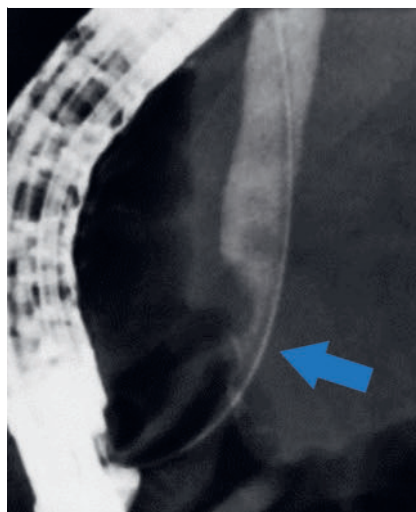
Introduction

Argon plasma coagulation (APC) has proven effective for trimming metallic stents [1]. We report a case in which APC was utilized to address basket-stone impaction resulting from inflammatory stricture of the bile duct (**▶ Fig. 1**).

Case report

A 67-year-old man was admitted with cholangitis after undergoing endoscopic treatment for choledocholithiasis at another hospital. The stones had a maximum diameter of 9 mm, which was not particularly large. During the procedure, a biliary extraction basket with eight wires became stuck in the distal bile duct. After several unsuccessful attempts to manage the basket-stone impaction, an endoscopic nasobiliary tube was inserted alongside the shaft of the basket catheter, and the patient was transferred to our hospital (**▶ Fig. 2**).

Because the basket was exposed to the duodenal lumen, we used APC (VIO300D; 40W flow rate 1.8L/min; ERBE, Germany) to cut the basket's metallic wires one by one (**▶ Video 1**) (**▶ Fig. 3a**, **▶ Fig. 3b**, **▶ Fig. 3c**). We began with a setting of 40W for safety and continued at this setting, owing to its effectiveness. After cutting six of the basket's eight wires, the catheter could be pulled to remove the entire basket (**▶ Fig. 4**). Subsequently, we placed an endoscopic biliary stent, completing the first session. After 2 months, an endoscopic papillary large balloon dilation was performed to treat the inflammatory stricture before stone removal. We successfully removed the remaining stones using a mechanical lithotripter (**▶ Fig. 5**). A key aspect of this method was maintaining control of the catheter shaft while cutting. Monitoring the traction force allowed us to avoid mucosal injury and precisely cut the target wire. Leaving some wires uncut facilitated basket re-

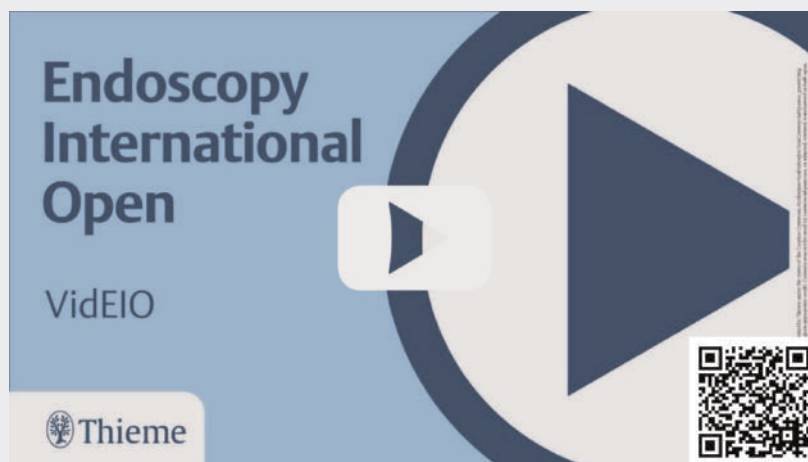


▶ Fig. 1 Fluoroscopic image showing inflammatory stricture of the distal bile duct (blue arrow).



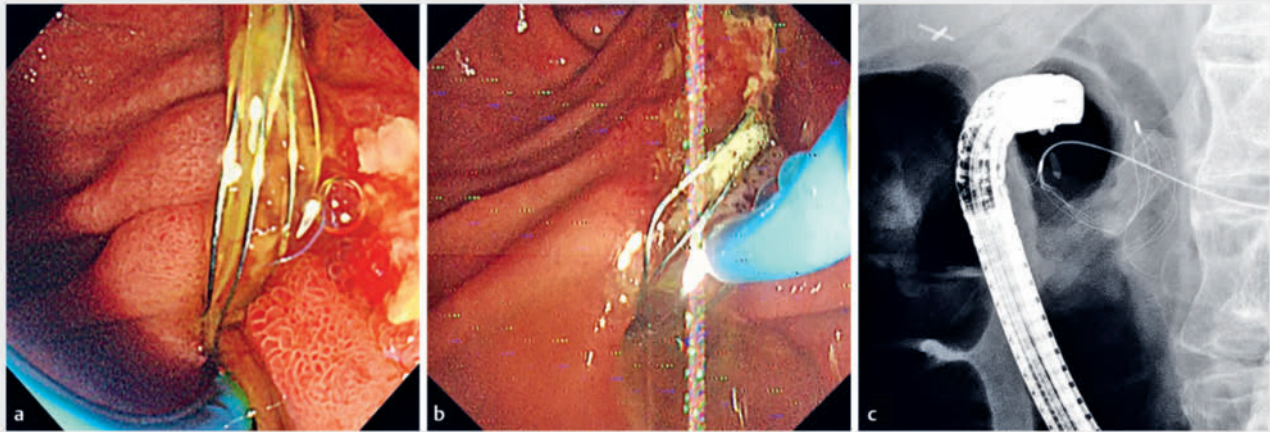
▶ Fig. 2 Fluoroscopic image showing the stuck basket and the endoscopic nasobiliary tube.

VIDEO

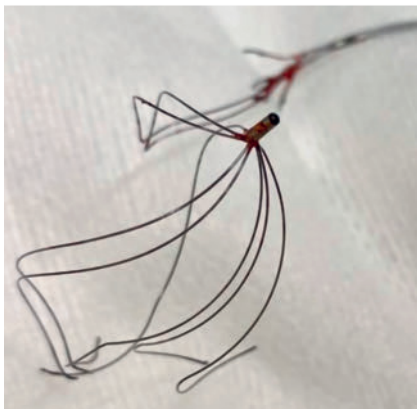


▶ Video 1 Argon plasma coagulation was utilized to address basket-stone impaction resulting from the inflammatory stricture of the bile duct.

moval by manually pulling on the catheter shaft [2, 3]. Cutting a wire of a basket with APC can be safe and effective when wire is exposed to the duodenal lumen.



► **Fig. 3** **a** Endoscopic image showing the basket and endoscopic nasobiliary tube exposed in the duodenum lumen. **b** Endoscopic image during APC for stone-impacted basket catheter. **c** Fluoroscopic image during APC for stone-impacted basket catheter.



► **Fig. 4** The removed basket.



► **Fig. 5** Fluoroscopic image showing complete removal of the remaining stones.

Conflict of Interest

Author Haruhiro I was supported by grants from Olympus Corporation and Takeda Pharmaceutical Company and is an advisor for Olympus Corporation and Top Corporation. Other authors declared no conflict of interest for this article.

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