# Cholangioscopic management of proximally migrated biliary stent using a novel through-the-cholangioscope snare

Endoscopic biliary stenting using plastic or metal stents is an established therapy for the management of biliary obstruction due to benign or malignant disease. Stent migration (proximal or distal) has been reported to occur in 5 %– 10 % of cases [1 – 3]. Distally migrated stents mostly pass through the intestine without incident, although bowel perforation, fistulas, and gastrointestinal bleeding have been reported. Proximally migrated stents can cause jaundice and cholangitis, and can be tricky to retrieve. Proximal migration is rare with pigtail stents [4]. This video describes the retrieval of a proximally migrated pigtail stent using a novel through-the-cholangioscope snare (▶ **Video 1**).

A 37-year-old woman with choledocholithiasis underwent four conventional endoscopic retrograde cholangiopancreatographies (ERCPs), which were unsuccessful in clearing a large stone from the common bile duct (CBD). Two plastic pigtail stents were inserted and she was referred to our center for cholangioscopy using SpyGlass (Boston Scientific, Marlborough, Massachusetts, USA) and electrohydraulic lithotripsy (EHL).

The first ERCP at our center revealed that one of the pigtail stents had migrated proximally within the CBD (▶ **Fig. 1**). EHL successfully cleared the large stone. However, attempts to remove the migrated stent using techniques such as balloon placement parallel to the stent with traction retrieval (▶ **Fig. 2**) and SpyBite forceps (Boston Scientific) were unsuccessful.

At the second ERCP, the SpySnare (Boston Scientific) was introduced through the cholangioscope and manipulated to engage the lower end of the pigtail stent. As the stent was embedded within the left intrahepatic duct, significant traction was required to extract the stent; the stent was retrieved successfully.

This is the first case in the UK in which a SpySnare was used to retrieve a migrated stent. Various conventional techniques include balloon placement parallel to the stent with traction retrieval, fluoroscopy-guided use of biopsy forceps, use of a Soehendra stent retriever and wire-guided basket, etc. The newer techniques include using a cholangioscope with various through-the-cholangioscope devices such as SpyBite forceps and SpySnare.

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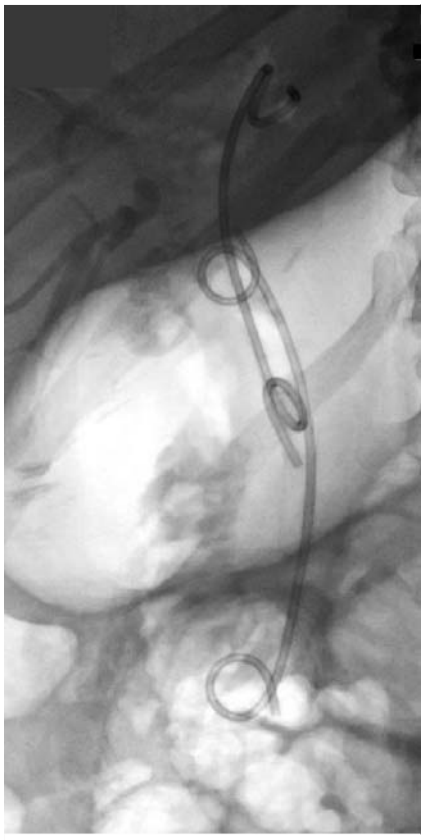
## Competing interests

Dr. Webster has received honoraria, support for educational meetings, and advisory board fees from Boston Scientific Inc.



▶ **Fig. 1** Migrated pigtail stent in the common bile duct, with the upper end within the left intrahepatic duct; the transpapillary stent is in the normal position.

**Video 1** Cholangioscopy-assisted retrieval of a proximally migrated common bile duct stent using a SpySnare (Boston Scientific, Marlborough, Massachusetts, USA).

▶ **Fig. 2** Balloon placement parallel to the stent with traction retrieval.

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