Successful removal of a migrated biliary plastic stent using a novel spiral dilator

Endoscopic plastic stenting is an established biliary drainage technique. However, plastic stents may migrate proximally or distally, causing recurrent biliary obstruction [1]. The Tornus ES (Olympus Co., Tokyo, Japan) is a newly designed coil-sheath dilator with a screw-shaped tapered tip (▶ Fig.1) that has been recently reported in endoscopic interventions [2–5]. We herein introduce successful troubleshooting using this novel spiral dilator for removal of a migrated biliary plastic stent.

A 63-year-old man presented with obstructive jaundice caused by pancreatic head cancer. Because he had undergone biliary drainage using an 8.5-Fr plastic stent with sphincterotomy 2 months before, we attempted to exchange the stent. The tumor had invaded the duodenum, and the plastic stent had almost migrated (▶ Fig.2a). We chose to use a novel spiral dilator (Tornus ES) because a 0.025-inch guidewire could be introduced into the stent. Its tip was inserted into the distal end of the stent over the guidewire, and care was taken not to push the stent up (▶ Fig.3a). It was then advanced smoothly into the inside of the stent with clockwise rotation. Once the stent and spiral dilator were engaged, we confirmed that the stent rotated in accordance with the movement of the spiral dilator under endoscopic or fluoroscopic vision (▶ Fig.3b). Finally, the stent was successfully removed with the spiral dilator through the scope channel (▶ Fig.3c, Video 1).

Although the outer diameter of the Tornus ES is 7 Fr, it could be inserted and engaged with 7-, 8.5-, and 10-Fr plastic stents in an ex vivo trial (▶ Fig.4b,c,d). In contrast, the tapered tip of the Tornus ES could not be inserted into a 6-Fr stent (▶ Fig.4a). Depending on the inner diameter of the stent, there is a high possibility that plastic stents of 7-Fr or...
larger can be removed. This case demonstrates that removal of a migrated plastic stent using Tornus ES can be a troubleshooting option.

Endoscopy_UCTN_Code_TTT_1AR_2AZ

Acknowledgments

We thank Angela Morben, DVM, ELS, from Edanz (https://jp.edanz.com/ac), for editing a draft of this manuscript.

Competing interests

The authors declare that they have no conflict of interest.

The authors

Yusuke Ishida1, Takehiko Koga1, Naoki Tsuchiya1, Kaori Hata2, Kei Nishioka2, Noriko Shiga2, Fumihito Hirai1

1 Department of Gastroenterology and Medicine, Fukuoka University, Faculty of Medicine, Fukuoka, Japan
2 Department of Gastroenterology, Fukuokaken Saiseikai Futsukaichi Hospital, Fukuoka, Japan

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Endoscopy 2023; 55: E804–E805
DOI 10.1055/a-2098-0982
ISSN 0013-726X
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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

Corresponding author

Yusuke Ishida, MD
Department of Gastroenterology and Medicine, Fukuoka University, Faculty of Medicine, 7-45-1 Nanakuma, Jonan-ku, Fukuoka 814-0180, Japan
Fax: +81 92 863 9759
y.ishida.cb@fukuoka-u.ac.jp