

Application of the “covered-stent-in-uncovered-stent” technique for easy and safe removal of embedded biliary uncovered SEMS with tissue ingrowth

Removal of embedded biliary uncovered self-expandable metal stents (uSEMS) is regarded as difficult or even impossible when the duration of indwell exceeds a couple of weeks, because of the ingrowth of tissue [1–3]. The presence of diffuse and severe ingrowth is the main feature limiting SEMS removal [1]. In the esophagus, placement of a self-expanding plastic stent (SEPS) inside the SEMS has been shown to induce pressure necrosis of this tissue hyperplasia, allowing subsequent removal of the stent [4]. We applied this technique in a 58-year-old patient with a history of alcohol abuse, obstructive jaundice, and suspected malignancy, in whom an uSEMS 10 mm wide and 6 cm long (Wallflex; Boston Scientific, Natick, Massachusetts, USA) had been mistakenly inserted more than 1 year before. The patient had experienced recurrent cholangitis due to stent obstruction caused by tissue ingrowth. Stent removal was therefore considered, but was unsuccessful using conventional maneuvers. A covered SEMS (Wallflex) was then placed inside the uSEMS (● **Figs. 1, 2**).

The patient developed acute cholecystitis and a liver abscess, needing percutaneous drainage and prolonged antibiotherapy. Four weeks later, after resolution of the sepsis, removal of both stents was re-attempted but failed due to persistent tissue ingrowth. A new covered SEMS was inserted for another 4-week period. Endoscopic retrograde cholangiopancreatography showed spontaneous migration of the covered stent and disappearance of the tissue hyperplasia, except at the distal end of the metal stent (● **Fig. 3**).

Removal of the uncovered stent was, however, easy using a rat-tooth forceps (● **Fig. 4**).

Damage to the bile duct was checked using SpyGlass (Boston Scientific), which showed permeability and no residual stricture (● **Fig. 5**).

Removal of biliary uncovered SEMS is less successful than removal of covered stents (0–38% vs. 92%). We previously reported



Fig. 1 Endoscopic view of the placement of a covered self-expandable metallic stent (SEMS) inside the uncovered SEMS.



Fig. 2 Fluoroscopic view of both covered and uncovered stents in the common bile duct.



Fig. 3 Disappearance of tissue ingrowth shown by common bile duct opacification.



Fig. 4 Extraction of the uncovered SEMS with a rat-tooth forceps.



Fig. 5 SpyGlass cholangioscopy showing permeability of the common bile duct and absence of damage after removal of the stent.

on piecemeal extraction of double uncovered Wallstents in a laborious procedure [5]. More recently we applied the “covered-stent-in-uncovered-stent” technique described for removal of esophageal SEMS in the biliary tree and showed that a period of 6–8 weeks might be appropriate for successful and less time-consuming removal.

Competing interests: None

Endoscopy_UCTN_Code_TTT_1AR_2AZ

F. J. Arias Dachary¹, C. Chioccioli²,
P. H. Deprez¹

¹ Gastroenterology Department,
Cliniques Universitaires Saint-Luc,
Université Catholique de Louvain,
Brussels, Belgium

² Service de Gastro-entérologie,
Clinique St-Jean, Brussels, Belgium

References

- 1 *Familiari P, Bulajic M, Mutignani M et al.* Endoscopic removal of malfunctioning biliary self-expandable metallic stents. *Gastrointest Endosc* 2005; 62: 903–910
- 2 *Stainier L, Hubert C, Jouret M et al.* Self-expanding metallic stents in benign post-operative biliary strictures: a difficult surgical obstacle? *Hepatogastroenterology* 2007; 54: 999–1003
- 3 *Shin HP, Kim MH, Jung SW et al.* Endoscopic removal of biliary self-expandable metallic stents: a prospective study. *Endoscopy* 2006; 38: 1250–1255
- 4 *Eisendrath P, Cremer M, Himpens J et al.* Endotherapy including temporary stenting of fistulas of the upper gastrointestinal tract after laparoscopic bariatric surgery. *Endoscopy* 2007; 39: 625–630
- 5 *Lahlal M, Gigot JF, Annet L, Deprez PH.* Successful endoscopic extraction of a double uncovered expandable metal stent. *Endoscopy* 2009; 41 Suppl 2: E98–E99

Bibliography

DOI 10.1055/s-0030-1255792

Endoscopy 2010; 42: E304–E305

© Georg Thieme Verlag KG Stuttgart · New York ·
ISSN 0013-726X

Corresponding author

P. H. Deprez, MD, PhD

Gastroenterology
Cliniques Universitaires Saint-Luc
Université Catholique de Louvain
Av. Hippocrate 10
1200 Brussels
Belgium
Fax: +32-2-7648927
pdeprez@uclouvain.be