

Over-the-Wire Stent Exchange Using a Simple Snare Technique in Endoscopic Retrograde Cholangiopancreatography



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Abstract

Stent insertion is an established technique of endoscopic retrograde cholangiopancreatography (ERCP) to treat symptomatic malignant or benign biliary strictures, and stent placement is accomplished by using the over-the-wire (OTW) method. In some cases, however, it might be challenging and sometimes time consuming to pass a complex biliary stricture with the guidewire. Stent-exchange technique with a guidewire left in place during stent removal might therefore be helpful to guarantee successful and time-sparing interventions.

A simple method is presented to remove the stent with the guidewire left in place, using the OTW stent-exchange method in ERCP. This technique simplifies stent OTW exchange by using a simple endoscopy snare. This article is part of an expert video encyclopedia.

Keywords

Endoscopic retrograde cholangiopancreatography; Video.

Video Related to this Article

Video available to view or download at doi:10.1016/S2212-0971(13)70223-1

Technique

Endoscopic retrograde cholangiopancreatography (ERCP) with over-the-wire (OTW) stent exchange of a plastic double pigtail stent using an endoscopic snare device.

Materials

- Endoscope: Therapeutic video duodenoscope (outer diameter: 11.3 mm, working channel: 4.2 mm, TJF-160VR; Olympus EMEA, Hamburg, Germany).
- Guidewire (0.03", 260 cm, Visiglide with hydrophilic-coated tip; Olympus EMEA, Hamburg, Germany).
- Catheter (7 Fr, 1.8–2.3 mm, 215 cm; MTW, Wesel, Germany).
- Double-pigtail plastic endoprosthesis (Gastrosoft, 10 Fr, 7 cm, Optimed 4000–5120; Optimed, Ettlingen, Germany).
- Pusher (10 Fr, 170 cm; MTW, Wesel, Germany).
- Snare (diameter 15 mm; Endoflex, Voerde, Germany).

Endoscopic Procedure

ERCP procedures are sometimes challenged by complex and difficult-to-pass biliary strictures, and passing the stricture with

a guidewire may be very time consuming. Therefore, the attempt to employ an unsuitable stent or the inability to advance the stent over the stricture might result in loss of the guidewire access by removing the misplaced stent. Likewise, in difficult-to-pass strictures that have previously been successfully passed by a stent, recannulation by use of the OTW stent-exchange technique might be very helpful to guarantee success of the intervention.

In this present case, inability to advance a plastic stent over a tight biliary tumor stenosis resulted in the necessity to change the stent. However, initial cannulation with the wire was difficult. Therefore, OTW stent removal was initiated. A small endoscopic snare device was threaded over the guidewire outside the endoscope and then pushed through the working channel of the duodenoscope, thereby gently pushing the double-pigtail stent, which was still partially within the working channel of the duodenoscope, outside of the endoscope. Subsequently, the snare was opened in front of the duodenoscope and was placed over the distal part of the stent by closing it tightly around the stent. The endoprosthesis was then removed by pulling the snare together with the misplaced prosthesis through the working channel of the endoscope. The guidewire must be closely observed and kept in place to prevent dislocation. Locking the guidewire with the Albarrán lever assists this procedure. Thereafter, either a new stent with smaller diameter could be placed or the stenosis can be dilated OTW. In the present case, balloon dilation of the strictures was performed at several levels of the biliary tree. Finally, two plastic endoprostheses could be inserted, one into the right and another into the left intrahepatic biliary ducts for palliation in this patient.

Key Learning Points/Tips and Tricks

- OTW stent-exchange technique facilitates the reinsertion of a stent over a difficult-to-pass stricture by first introducing

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- the guidewire into the stent and then removing the stent OTW with a simple endoscopic snare.
- A small endoscopic snare device is threaded over the guidewire outside of the endoscope and then pushed through the working channel of the duodenoscope. Then the snare is opened and placed over the distal part of the stent, closing it tightly around the stent.
 - This technique is likewise useful in removing a misplaced plastic stent while leaving the guidewire in place.

Alternatives

The Soehendra stent retriever has been designed to remove a straight stent in the OTW technique: a guidewire is introduced through the Soehendra retriever into the stent and the stent is fixed to the retriever by screwing the retriever into the distal end of the stent. The stent is then removed by pulling on the retriever and extracting both retriever and stent over the endoscopic working channel while leaving the wire in place.

Scripted Voiceover

Time (min:sec)	Voiceover text
0:00	MR Cholangiopancreatography demonstrates dilated intrahepatic bile ducts in a patient with non-resectable hilar cholangiocarcinoma and peritoneal carcinomatosis.
0:12	Cross sectional magnetic resonance imaging confirms biliary dilation.

0:19	Cannulation of the most severely dilated, left-sided segment succeeded with a guide-wire.
0:29	Although, pushing a 10 French plastic endoprosthesis through the tight tumor stricture failed.
0:35	Therefore, over-the-wire stent removal was performed with the guide-wire kept in place.
0:42	A small endoscopic snare is threaded over the guide-wire outside of the endoscope and consecutively pushed through the working-channel of the duodenoscope.
0:54	The snare is closed over the distal part of the stent.
1:02	The endoprosthesis is now removed by pulling the snare together with the endoprosthesis through the working channel of the endoscope. Hereby, the guide-wire must be closely observed and kept in place to prevent dislocation. Locking the guide-wire with the Albarrán lever assists this procedure.
1:44	Multiple balloon dilations of the strictures finally enable the insertion of two plastic endoprosthesis for endoscopic palliation in this patient.

Further Reading

- Dumonceau, J.; Tringali, A.; Blero, D.; *et al.* Biliary Stenting: Indications, Choice of Stents and Results: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline. *Endoscopy* **2012**, *44*, 277–298.
- Seitz, U.; Seewald, S.; He, X.; *et al.* The New Soehendra Stent Retriever Makes Stent Exchange Much Easier. *Endoscopy* **2003**, *35*, 98.