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**Bending the distal tip of a guidewire aids in cannulation of an occluded uncovered biliary metal stent**

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*Dear Editor,*

Biliary metal stent implantation is an effective treatment for malignant obstructive jaundice. However, it is well known that stents placed for a long time can become occluded and cause jaundice and cholangitis. At this time, endoscopic intervention is usually required to replace the stent or re-insert the stent. Re-cannulation for metal stent occlusion is challenging because the guidewire may pass through the side holes of the uncovered metal stents, resulting in prolonged surgical time and exposure to radiation. Here we present a small tip procedure that may help endoscopists complete the re-cannulation of an uncovered metal stent in a very short time.

## Case report

A 77-year-old female patient with a biliary uncovered metal stent inserted for malignant obstructive jaundice was admitted to our hospital due to a relapse of jaundice and fever during two weeks. Blood test showed elevated total bilirubin and occlusion of the metal stent was diagnosed. Endoscopic retrograde cholangiopancreatography (ERCP) was planned to place a fully covered self-expandable metal stent inside the former stent.

Cannulation was attempted to place the guidewire through the uncovered metal stent, with a few centimeters of the hydrophilic part of the guidewire outside the sphincterotome to produce a shepherd's hook configuration (Fig. 1A-C). Thus, allowing the guidewire to reach the bile duct above the stent easily without getting into the holes. After successful cannulation (Fig. 1D and E), we managed to place a fully covered metal stent into the former stent (Fig. 1F). The patient had a rapid symptom relief and was discharged from hospital one week after the procedure without any adverse events.

## Discussion

A review of reported studies regarding re-cannulation for metal stent occlusion showed that cases of stent dysfunction include clogging by stone, sludge or food impaction, tumor ingrowth, tumor overgrowth and migration (1). Although an uncovered metal stent has a relatively long patency period due to its large caliber, stent dysfunction has been reported to occur in 27 % of patients (2). When these patients need reintervention, guidewire cannulation may be a challenge because the guidewire can get into the holes of the uncovered metal stent, making the procedure difficult (3). In our case, bending the distal tip of a guidewire to produce a shepherd's hook configuration allowed successful guidewire cannulation in less than ten seconds. This method was simple and fast. We recommend using this technique to re-cannulate patients with an uncovered metal stent.

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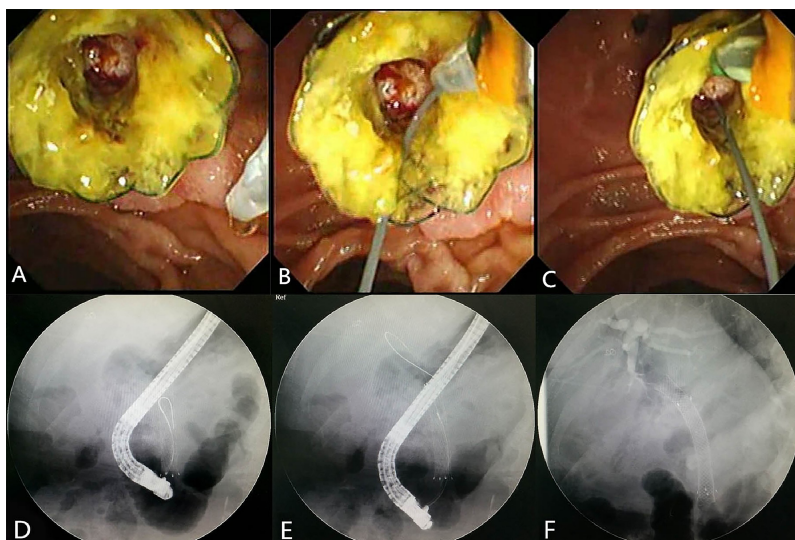


Fig. 1. A. Occluded biliary uncovered metal stent. B and C. Endoscopic view of the distal part of the guidewire positioned at the end of the metal stent. D and E. Radiographic image of the shepherd's hook configuration of the distal part of the guidewire in the lumen of the metal stent. F. A fully covered metal stent was placed inside the former metal stent after successful cannulation.