







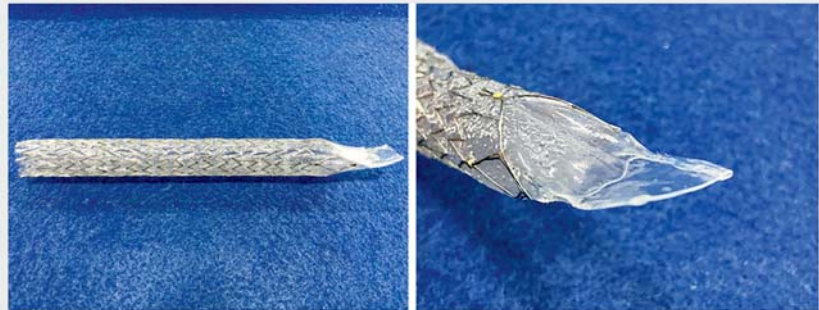
Novel biliary stenting with an antireflux system for distal biliary obstruction in a patient with a surgically altered anatomy


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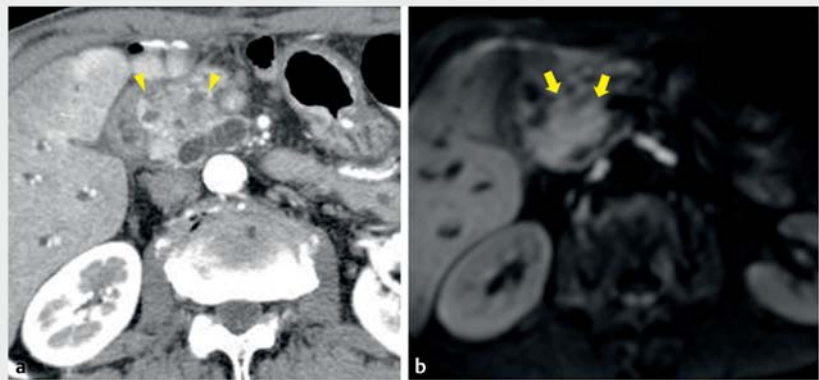
Prevention of recurrent biliary obstruction (RBO) is important for management of chemotherapy and surgical resection in patients with pancreaticobiliary cancers. Placing an antireflux metal stent (ARMS) is generally associated with a reduced risk of RBO and non-occlusion cholangitis compared to using a conventional self-expandable metal stent (SEMS) [1–3]. Recently, a duckbill-shaped ARMS was developed, with a design to prevent duodenobiliary reflux [4]. We used a novel ARMS (Duckbill Biliary Stent; Kawasumi Laboratories, Tokyo, Japan) ( **Fig. 1**) to prevent RBO.


A 71-year-old man who had previously undergone Billroth-II reconstruction after pylorus gastrectomy presented with obstructive jaundice. Computed tomography and magnetic resonance imaging revealed biliary obstruction caused by pancreatic head cancer ( **Fig. 2a**,  **Fig. 2b**). We conducted endoscopic retrograde cholangiography using a forward-viewing endoscope and placed a covered SEMS to perform neoadjuvant chemotherapy (NAC). However, this patient experienced early stent occlusion, which caused kinking between the bile duct and stent during chemotherapy ( **Fig. 3a**,  **Fig. 3b**). After removal of the previous stent, a novel ARMS (10 mm × 6 cm) was safely placed without kinking the bile duct ( **Video 1**). NAC continued to be successfully performed from the time of stent exchange until the date of surgery, without any adverse events, including RBO.

A previous study reported that a conventional ARMS was not associated with a longer time to RBO than a covered SEMS [5]. This novel ARMS with excellent flexibility was useful for performing biliary drainage, even in a patient with a strongly flexed bile duct due to surgically altered anatomy.




 **Fig. 1** Duckbill-shaped anti-reflux metal stent.



 **Fig. 2 a** Computed tomography shows a hypo or isoattenuated lesion of pancreatic head (yellow arrowhead). **b** Diffusion-weighted image shows the mass with high signal intensity (yellow arrows).



 **Fig. 3 a** Computed tomography shows stent occlusion due to sludge. **b** The common bile duct was kinked by a covered self-expandable metal stent (yellow arrowhead).

 VIDEO

Novel biliary stenting with an antireflux system for distal biliary obstruction in a patient with a surgically altered anatomy

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► **Video 1** Novel biliary stenting with an antireflux system for distal biliary obstruction in a patient with a surgically altered anatomy.

Competing interests

The authors declare that they have no conflict of interest.

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