

Mid-gut stenting: a transhepatic approach

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Background

A 54 year old man presented in October 2004 with epigastric pain and obstructive jaundice. A CT at the time demonstrated a 2.5cm mass in the head of the pancreas but without evidence of locoregional disease spread.

The patient underwent a Whipple's procedure with curative intention; histology confirmed a pancreatic duct cholangiocarcinoma. Over the following ten years, the patient remained in remission and was kept under surveillance on the ESPAC-3 study.

In February 2015, a soft tissue nodule was identified on CT at the site of resection, which increased in size by June 2015 with associated scattered mesenteric nodules, and was histologically confirmed as recurrent disease. The patient was commenced on single-agent Gemcitabine chemotherapy.

In July 2015, the patient was admitted following one cycle of chemotherapy with biliary sepsis. The patient's liver function tests were markedly deranged, with a bilirubin >100mg/dL.

The patient underwent a contrast-enhanced CT and MRCP study, which revealed biliary dilatation secondary to a malignant stricture within the afferent limb of the hepato-jejunostomy (**Figure 1a/b**).

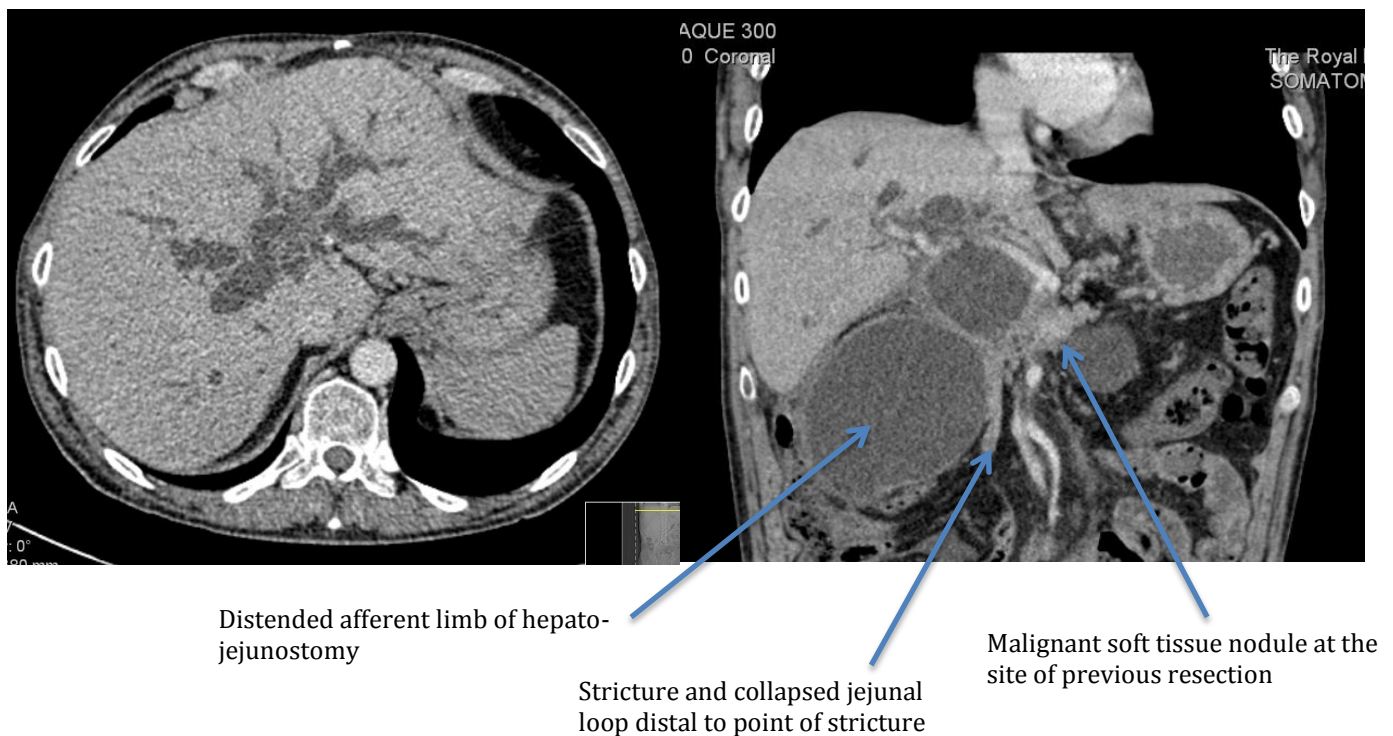


Figure 1a. Axial and coronal contrast-enhanced CT demonstrating biliary dilatation and associated dilatation of the afferent limb of hepatojejunostomy.

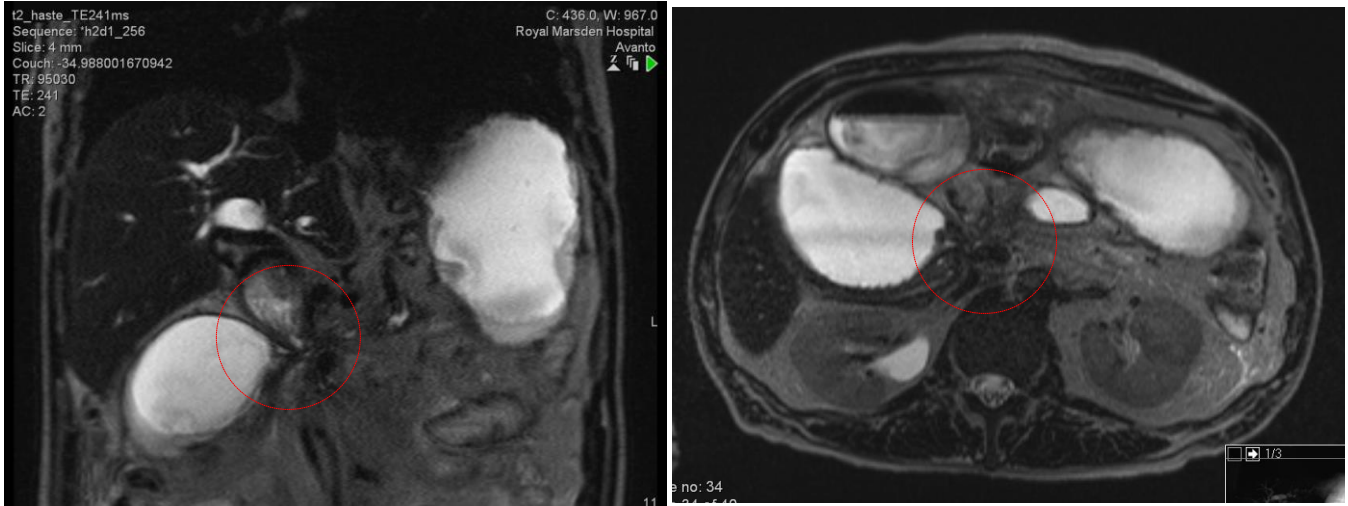


Figure 1b. Coronal and axial MRCP sequences demonstrating in drawing and stricturing of the afferent limb at the site of disease recurrence within the previous surgical bed (red circles).

Procedure:

Given the patient's altered anatomy, a percutaneous transhepatic approach to the stricture was preferred to an endoscopic approach.

An ultrasound guided biliary puncture was performed followed by insertion of a 5-French sheath. A Terumo 0.035" hydrophilic wire and biliary manipulation catheter were navigated into the hepato-jejunostomy, which was exchanged for a 0.035" Amplatz super stiff guidewire and 8Fr biliary drainage catheter, with a view to decompression of the infected biliary system.

A cholangiogram confirmed the presence of biliary dilatation secondary to a malignant stricture within the afferent limb of the hepatojejunostomy at the surgical bed site (**Figure 2**).

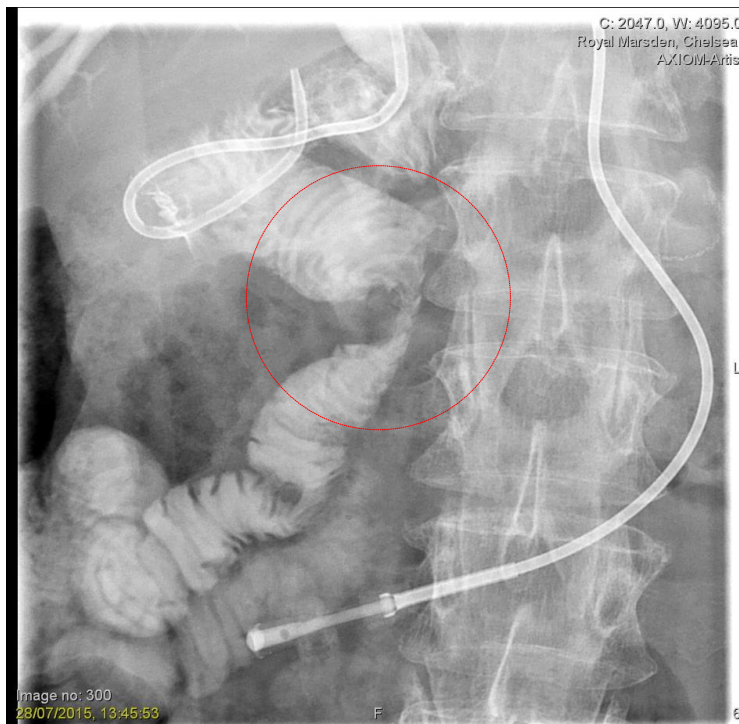


Figure 2. Cholangiogram which most clearly demonstrates the site of stricture formation (red circle).

Following sepsis resolution, the biliary catheter was exchanged for a 9Fr sheath; a Terumo 0.035" guide wire was passed through the malignant stricture, enabling subsequent deployment of two overlapping 22 x 60mm self-expanding Wallflex™ duodenal stents (Boston Scientific) within the stricture, with satisfactory stent deployment observed (**Figure 4**).

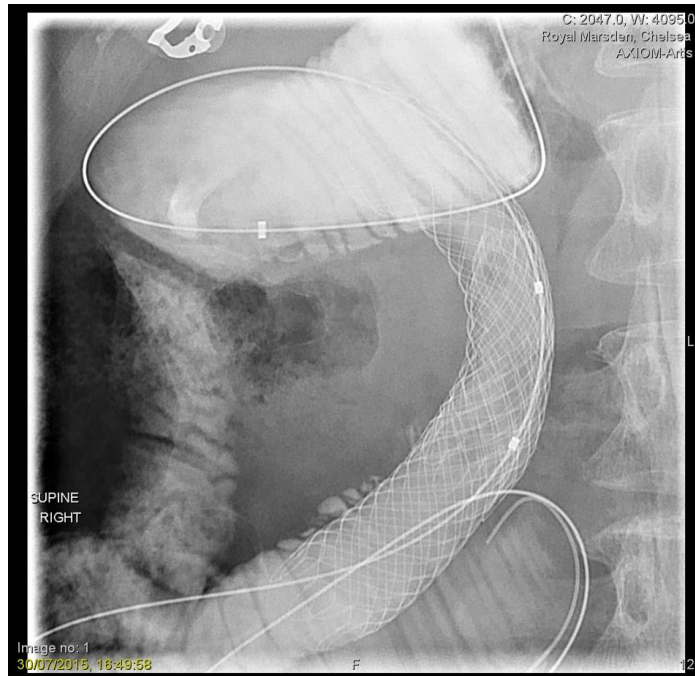


Figure 4.

Wallflex™ stents shown in situ maintaining patency of the stricture.

A cholangiogram performed 24 hours post-deployment showed rapid flow of contrast through the stent and improved biliary appearances (**Figure 5**).



Figure 5.

Cholangiogram demonstrating maintained patency of stent and biliary decompression.

The patient's inflammatory markers and liver function tests normalized and he was discharged with no procedural complications. The patient remains well at the most recent clinic follow-up.

Conclusion:

In recent years, multiple deep enteroscopy approaches have been developed which have afforded gastroenterologists a means of mid-gut stenting. Whilst technically challenging, the endoscopic approach remains the standard of care for palliating malignant strictures. Equally however, not all patients with mid-gut obstruction will be suitable for an endoscopic approach (for example in complex altered anatomy), and in this context, referral to interventional radiology is appropriate, where the skill set of the interventional radiologist can be utilized to good effect.