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Endoscopic Gastrojejunostomy: A Novel Approach to Roux Limb Obstructions Following Roux-en-Y Hepaticojejunostomy

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INTRODUCTION

- Roux-en-Y hepaticojejunostomy (RYHJ) is a surgical procedure generating a direct connection between the hepatic bile ducts and the jejunum (Figure 1)
- Major indications include biliary strictures and iatrogenic injuries however some studies have indicated a role in biliary cancer
- We present a novel endoscopic treatment of a Roux limb obstruction following a RYHJ for treatment of a cholangiocarcinoma

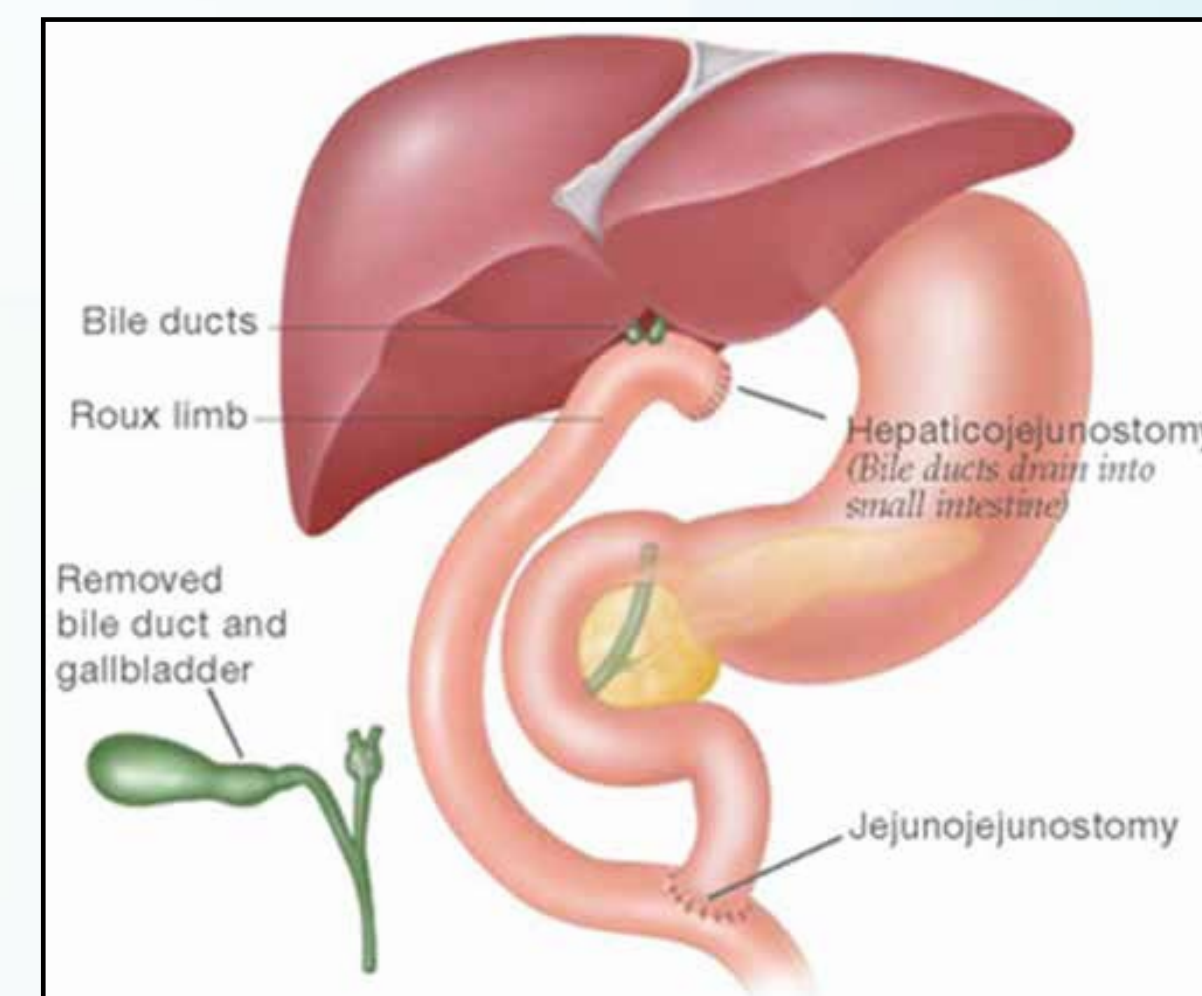


Figure 1: Roux-en-Y hepaticojejunostomy diagram.

CASE BACKGROUND

- 75-year-old female underwent a RYHJ for a cholangiocarcinoma
- Two months post-op, she developed abdominal pain with nausea and vomiting
- CT of her abdomen and pelvis noted a very large distended Roux limb (Figure 2) and subsequently a percutaneous biliary drain (PBD) was placed
- 1 month later, internal trial of hepatic biliary drainage was unsuccessful with repeat cholangiogram noting persistent obstruction (Figure 3)
- To avoid open surgical repair, decision was made to proceed with endoscopic therapy



Figure 2: CT abdomen and pelvis noting a distended Roux limb adjacent to the liver.



Figure 3: Cholangiogram noting patent hepaticojejunal anastomosis and a distended Roux limb.

ENDOSCOPIC INTERVENTION

- Following a normal EGD, endoscopic ultrasound revealed the dilated Roux limb abutting the gastric antrum (Figure 4). This was confirmed to be the target by visualization of both guidewire and contrast injection via the PBD
- Initial fistulizing attempt using a Hot AXIOS™ stent system was unsuccessful due to deployment failure
- Thus a 19g FNA needle was endosonographically introduced into the Roux limb with guidewire advancement
- Needle-knife instrumentation was then utilized to create a fistula
- Following fistula dilation, two double-pigtail stents were deployed with excellent biliary drainage return (Figure 5)
- Successful placement was further confirmed with direct visualization of the pigtail stents within the Roux limb by passage of a cholangioscope through the PBD (Figure 6)
- Two weeks later, repeat cholangiogram noted stent patency and her PBD was removed. She has since been stable, currently undergoing chemotherapy



Figure 4: EUS noting a distended Roux limb abutting the gastric antrum

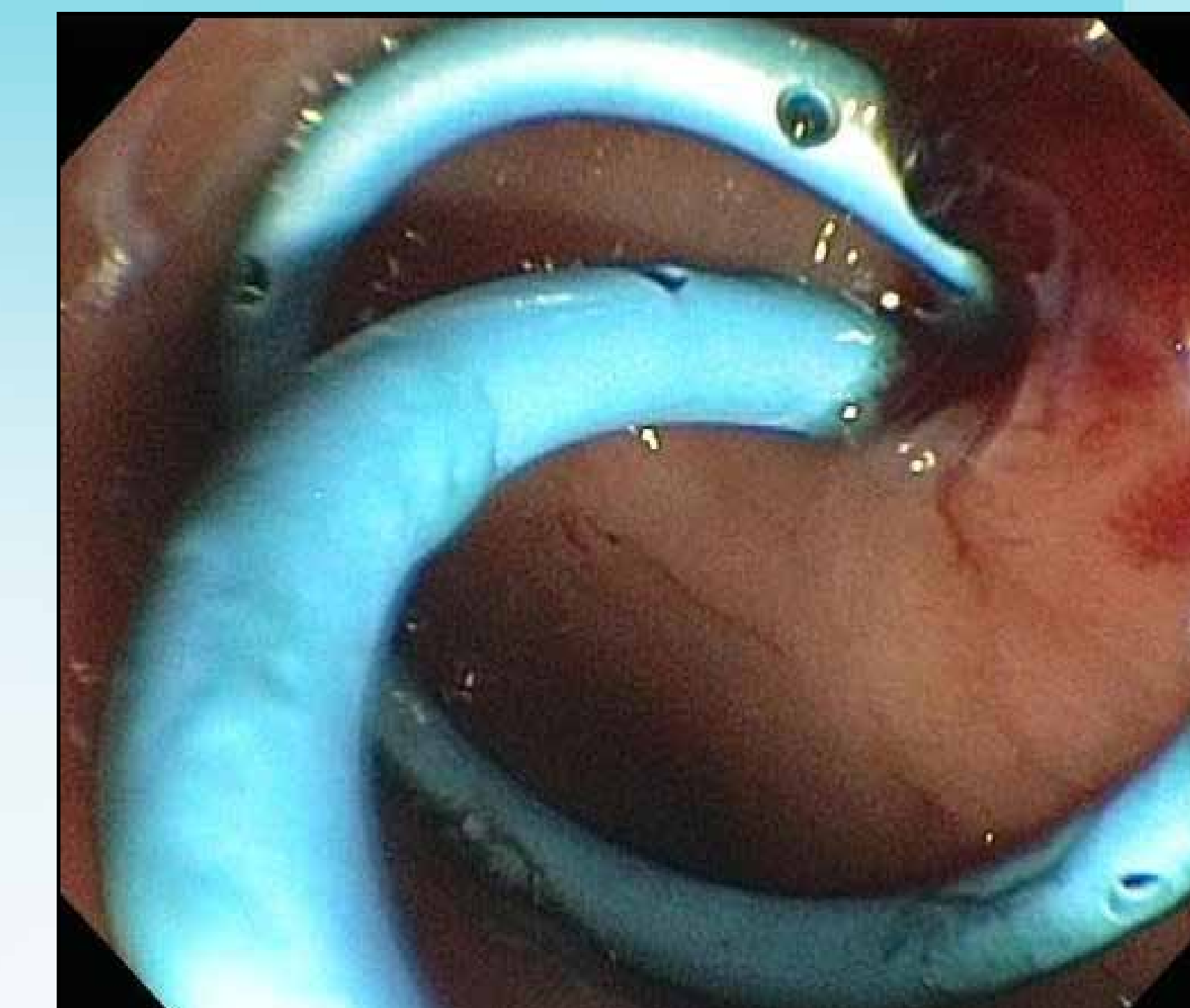


Figure 5: Direct visualization of two double-pigtail stents within gastric antrum.

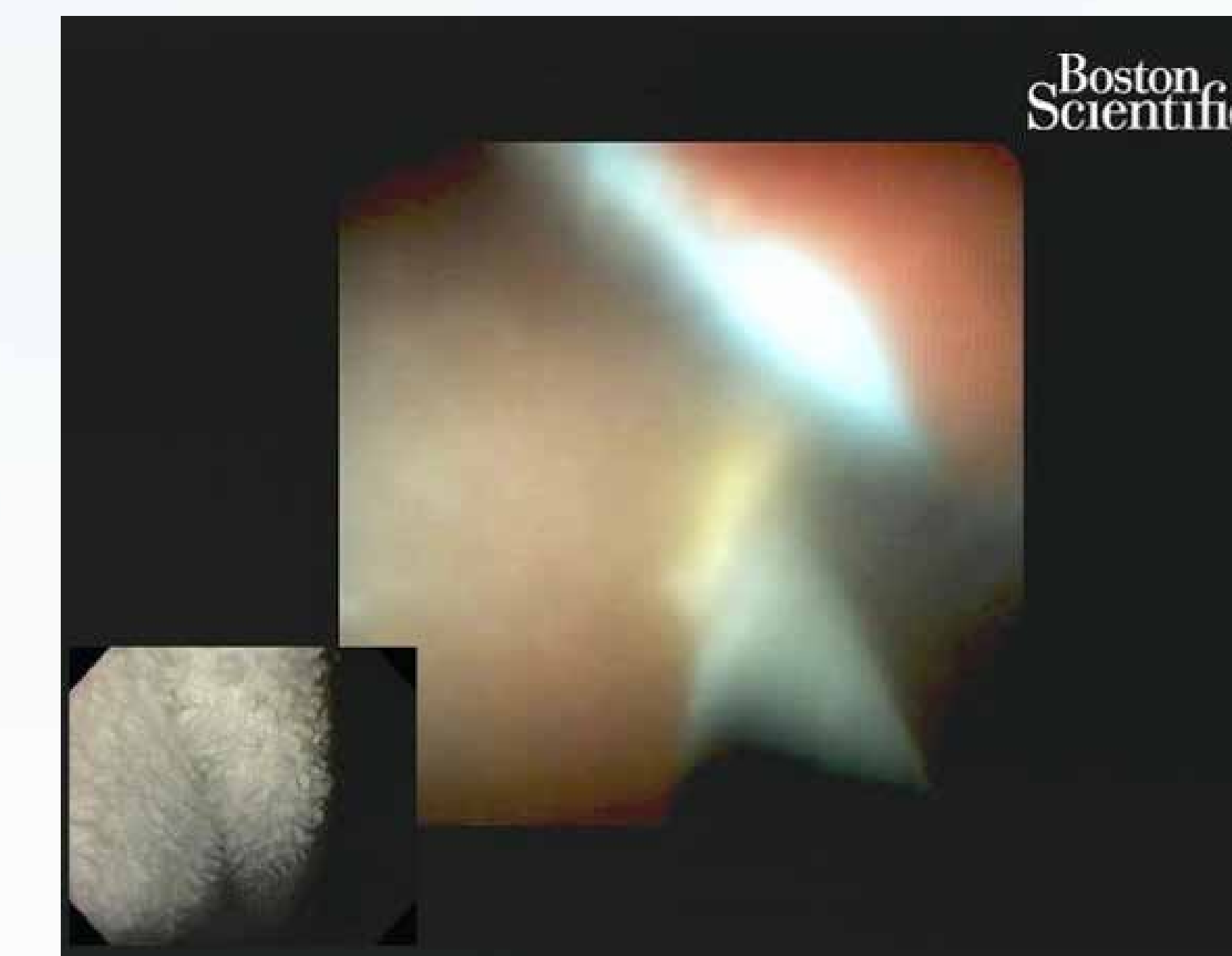


Figure 6: Direct visualization of double-pigtail stents within the Roux limb by cholangioscopy via the external biliary drain.

DISCUSSION

- Multiple EUS-guided techniques have been described in the literature for biliary obstructions however following a RYHJ, limited interventions are available
- In 2014, a “modified RYHJ” was described in the literature as fixing a portion of the distal Roux limb to the anterior gastric wall to allow for future endoscopic access should the need arise
- “Modified RYHJ’s” have not yet been universally implemented, and patients who have undergone RYHJ prior to 2014 would not have this advantage of secured endoscopic access
- Thus given the recent paradigm shift to minimally invasive advanced endoscopic interventions in an effort to circumvent the need of traditional surgical approaches, we have described a unique and safe alternative for treatment of Roux limb obstruction following a “traditional” RYHJ
- Long term effects of this procedure are unknown however monitoring for nutritional and vitamin deficiencies could be considered given the induced biliary reflux

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