



EUS-guided Anastomosis Complication in a Patient with Roux-en-Y Gastric Bypass: Dehiscence of the Surgical Anastomosis During Endoscopic Mucosal Resection Across EUS-guided Jejunum-gastric Anastomosis with Lumen Apposing Metal Stent

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Abstract

Introduction Roux-en-Y gastric bypass (RYGB) is one of the most common surgical procedures for the management of morbid obesity. However, RYGB poses technical difficulties in exploring the gastric remnant and in performing endoscopic biliary interventions due to altered anatomy. Recently, EUS guided gastro-gastric anastomosis to access the excluded stomach has been introduced in order to allow direct trans-gastric interventions.

Method and Material We report the case of a 38-year-old female referred to our unit to undergo EUS direct trans-gastric intervention (EDGI) for the management of a small stone in the biliary tract. Pre-procedural CT scan highlighted an abnormal distension of the gastric remnant. EUS guided jejuno-gastric anastomosis was carried out with the deployment of a 15 x 10 mm lumen apposing metal stent (LAMS).

Results After 3 days, an upper GI endoscopy was performed, highlighting a mobile 25 mm polyp near the pylorus. Therefore endoscopic resection was planned before the performance of the ERCP. Piecemeal endoscopic mucosectomy was carried out with no evidence of any adverse event. However, endoscopic evaluation after specimen retrieval detected an almost complete dehiscence of the anastomosis. Emergency surgery was decided with restoration of the continuity of the gastric cavity to allow future endoscopic examinations/procedures.

Discussion Here, we report the first case of dehiscence of the surgical gastro-jejunal anastomosis during EDGI procedure. Performing an ERCP during EDGI is probably safer than performing gastric interventions. When performing EDGI, it is paramount to carefully evaluate the type of planned gastric procedure and to adopt a tailored approach according the several variables involved.

Keywords Gastric By Pass · EUS · Axios · EDGI · Altered anatomy · LAMS

Introduction

Roux-en-Y gastric bypass (RYGB) is one of the most common surgical procedures for the management of morbid obesity [1]. However, RYGB poses technical difficulties in exploring the gastric remnant and in performing endoscopic

biliary interventions due to altered anatomy [2]. Current literature shows that a variety of disorders may affect the bypassed stomach [3, 4]; therefore, the capability to access the gastric remnant is a vital clinical issue.

Balloon enteroscopy may be used but overall success rate has been reported in 88% of cases with a perforation rate up to 10% [5]. Recently, access to the excluded stomach has been proposed by means of gastrostomy [6] or EUS-guided anastomosis [7].

Material and Methods

A 38-year-old woman was admitted to our hospital for cholestasis and pain (BMI 20). In her medical history, she had

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laparoscopic cholecystectomy at the age of 18, an omega gastric bypass in 2003 for morbid obesity (BMI 47) followed by its conversion to RYGB in 2009 (BMI 35). Abdominal computed tomography showed a single 3-mm stone within a dilated (19 mm) common bile duct coupled with major distension of the remnant stomach. The latter finding suggesting the presence of a pyloric stricture.

EUS direct trans-gastric intervention (EDGI) was planned [8]. Informed consent was obtained before each procedure including permission to anonymously share personal details.

Under EUS guidance, the remnant stomach was visualized. The best position for lumen apposing metal stent (LAMS) was chosen in order to minimize the distance with excluded stomach and to avoid any intervening vessel. Puncture site was located in the jejunum just below the gastro-jejunal anastomosis. EUS-guided jejuno-gastric anastomosis was performed deploying a cautery tipped LAMS (size 15 mm × 10 mm).

Results

Endoscopy was performed using a standard gastroscope 3 days after LAMS deployment. It highlighted the LAMS correctly in place with easy passage of the scope. A mobile 25-mm polyp causing partial occlusion, due to ball effect, was visualized at the level of the pylorus. Piece meal resection (EMR) was performed. During specimen retrieval, a small amount of peritoneal fat was found in the esophagus. Post-resection perforation was suspected; however, endoscopic evaluation diagnosed an almost complete dehiscence of the surgical anastomosis. Emergency surgery was preferred over endoscopic approach due to the size and features of the dehiscence. The continuity of the gastric cavity was restored and a gastro-gastric anastomosis was carried out in order to allow future endoscopic examinations. Histopathological evaluation of the specimen revealed a high-grade dysplasia. At follow-up, the small stone spontaneously migrated.

Discussion

Here, we report the first case of dehiscence of the surgical gastro-jejunal anastomosis during EDGI procedure. Performing an ERCP during EDGI is probably safer than performing gastric interventions. Firstly, duodenoscopes are stiffer than gastroscopes thus reducing the risk of scope looping. Secondly, once the duodenoscope has reached the papilla, its position remains stable; whereas to perform endoscopic resection, multiple scope movements are required thus increasing the risk of applying an excessive force on the anastomosis.

When performing EDGI, it is paramount to carefully evaluate the type of planned gastric procedure and to adopt a tailored approach according the several variables involved.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11695-021-05395-w>.

Declarations

Ethics Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Consent to Participate Informed consent was obtained from all individual participants included in the study.

Conflict of Interest The authors declare no competing interests.

References

1. Angrisani L, Santonicola A, Iovino P, et al. Bariatric surgery and endoluminal procedures: IFSO worldwide survey 2014. *Obes Surg*. 2017;27(9):2279–89.
2. Elsharif M, Hague AG, Ahmed H, et al. After you Roux, what do you do? A systematic review of most successful advanced assisted ERCP techniques in patients with various altered upper gastrointestinal surgical anatomical reconstructions with particular focus on RYGB (last 10 years). *Clin J Gastroenterol*. 2020;13(6):985–1009. <https://doi.org/10.1007/s12328-020-01201-9>.
3. Tornese S, Aiolfi A, Bonitta G, et al. Remnant gastric cancer after Roux-en-Y gastric bypass: narrative review of the literature. *Obes Surg*. 2019;29:2609–13. <https://doi.org/10.1007/s11695-019-03892-7>.
4. de Roover A, Detry O, de Leval L, et al. Report of two cases of gastric cancer after bariatric surgery: lymphoma of the bypassed stomach after Roux-en-Y gastric bypass and gastrointestinal stromal tumor (GIST) after vertical banded gastroplasty. *Obes Surg*. 2006;16:928–31. <https://doi.org/10.1381/096089206777822142>.
5. Sakai P, Kuga R, Safatle-Ribeiro AV, et al. Is it feasible to reach the bypassed stomach after Roux-en-Y gastric bypass for morbid obesity? The use of the double-balloon enteroscope. *Endoscopy*. 2005;37(6):566–9.
6. Donatelli G, Cereatti F, Spota A, et al. Temporary trans-gastric stent deployment over a 20 French gastrostomy for single-stage endoscopic retrograde cholangiopancreatography after gastric bypass. *Obes Surg*. 2020;30(10):4130–7. <https://doi.org/10.1007/s11695-020-04857-x>.
7. Junge TM, Chiang AL, Kowalski TE, et al. Endoscopic ultrasound-directed transgastric ERCP (EDGE): a retrospective multicenter study. *Endoscopy*. 2020; <https://doi.org/10.1055/a-1254-3942>.
8. Krafft MR, Hsueh W, James TW, et al. The EDGI new take on EDGE: EUS-directed transgastric intervention (EDGI), other than ERCP, for Roux-en-Y gastric bypass anatomy: a multicenter study. *Endosc Int Open*. 2019;7(10):E1231–40. <https://doi.org/10.1055/a-0915-2192>.

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