Diameter of surgical versus endoscopic ultrasound-guided gastrojejunostomy: that much wider after all is said and done?

Whereas retrospective literature confirms the comparable clinical success of endoscopic ultrasound-guided gastrojejunostomy (EUS-GJ) and surgical gastrojejunostomy (SGJ) [1, 2], no head-to-head comparison exists of their caliber and long-term patency.

We present one case of a patient receiving both procedures, offering an unusual opportunity for direct comparison (▶Video 1).

A 52-year-old patient was diagnosed with gastric outlet obstruction owing to a duodenal B-cell lymphoma. EUS-GJ was performed using a 20-mm lumen-apposing metal stent (LAMS), followed by 18-mm balloon dilation [3] (▶Fig. 1). Upon disease remission with chemotherapy, a blind-ended bulb resulted from scarring of the stenotic duodenal tract. Although the EUS-GJ was wide and patent (▶Fig. 2), erosions were appearing on the jejunal side after 8 months (▶Fig. 2 c) and an SGJ was proposed owing to the uncertainty of long-term patency of the EUS-GJ and a potentially wider caliber of the SGJ.

Following surgery, gastrointestinal follow-through (▶Fig. 3) showed adequate flow through both anastomoses, but EUS-GJ seemed reduced in diameter 13 months after placement. LAMS extraction was planned, revealing significant granulation tissue overgrowth surrounding a stabilized fistula reduced in caliber (▶Fig. 3).

On that occasion, the SGJ caliber was evaluated. Although the surgeon created an almost 5-cm incision, a 20-mm balloon perfectly fitted the final SGJ (▶Fig. 4).

Indeed, SGJ requires a linear incision of stomach and jejunal walls and latero-lateral suturing of their inferior and superior margins [4]. This elliptic anastomosis will become round after maturation and scarring, with a smaller final circular diameter compared to the initial linear cut (▶Fig. 5).

Pending randomized data, this case suggests a comparable caliber of SGJ and EUS-GJ for a substantial part of their history, and therefore an assumed larger diameter should not be used as a reason to prefer SGJ. However, it also suggests that long-term LAMS friction may induce inflammatory responses deserving further elucidation, especially when advocating EUS-GJ use in benign disease.

Competing interests

Michiel Bronswijk has consultancy agreements with Prion Medical – Taewoong. Schalk Van der Merwe holds the Cook and Boston-Scientific chair in interventional endoscopy and holds consultancy agreements with Cook, Pentax and Olympus. The remaining authors declare no COI relevant for this article.
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References


▶ Fig. 2 Endoscopic follow-up of the endoscopic ultrasound-guided gastrojejunostomy (EUS-GJ). a, b Follow-up at 4 months: wide and patent EUS-GJ, with normotrophic mucosa on the jejunal side. c Follow-up at 8 months: initial erosions were seen on the jejunal side of the anastomosis.

▶ Fig. 3 a Endoscopic follow-through showing adequate contrast flow through both anastomoses, although EUS-GJ diameter seemed slightly reduced after 13 months. b, c Endoscopy performed for lumen-apposing metal stent (LAMS) extraction 13 months after placement. b Endoscopic view of the LAMS reduced in caliber, not passable with a standard gastroscope. c After LAMS removal, significant granulation tissue overgrowth was visible surrounding a stabilized fistula reduced in caliber.


Bibliography

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Supplementary Material

Area = \( \pi \times a \times b \)

Area = \( \pi \times r^2 \)

\( r = \sqrt{a \times b} \)