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Commentary on Laparoscopic-Endoscopic Cooperative Surgery for Duodenal Lesions

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Introduction

Laparoscopic wedge resection of gastric submucosal tumors is an established method, but the tumor is usually resected to an excessive extent [1,2]. Hiki et al. first reported laparoscopic-endoscopic cooperative surgery (LECS) for gastric tumors [3]. Under the LECS approach, the tumor can be resected with minimal but adequate surgical margin. We reported LECS for duodenal lesions in 2010 [4], but other such reports limited. Although LECS enables resection of the tumor with minimal but adequate surgical margin and without postoperative deformity or stenosis, the procedure is still not fully established.

LECS Indication for Duodenal Lesions

Location

The non-ampullary area of the first or second portion of the duodenum is suitable for LECS. The endoscopic approach on the distal side of the ampulla of Vater is difficult, and the transduodenal approach or another procedure is the better therapeutic option at this location. Endoscopic maneuvers performed at the third or fourth portion of the duodenum are also quite difficult, thus also making LECS difficult.

Tumors

Adenomas or submucosal tumors are good indications for LECS. However, inversing the tumor intraabdominally raises concern about possible intraabdominal dispersion of the tumor. Extreme caution should be exercised for indications other than adenomas and submucosal tumors. LECS for duodenal carcinoma requires a procedure that prevents intraabdominal tumor dispersion. Irino et al. reported LECS for duodenal tumors that does not perforate the duodenal wall or disperse the tumor cells [5].

Tumor size

A size limit of 3 cm is considered appropriate for duodenal wall resection with LECS because hand-suturing/stitching would be practically difficult in cases in which large defects of the wall result. Additionally, closure of large defects may cause postoperative stenosis.

Discussion

Endoscopic submucosal dissection (ESD) of duodenal lesions is practically difficult and is occasionally accompanied by perforation of eroded luminal walls [6,7]. Laparoscopic wedge resection of the duodenum is indicated for quite limited cases such as small tumors or tumors with a small base. LECS, in which intraoperative endoscopy is combined with a manual ESD technique, has enabled the performance of reliable and adequate resection of duodenal tumors. Various LECS approaches have been reported including creative methods such as LECS reported by Irino et al. [5] and NEWS [8] and CLEAN-NET [9]. These procedures do not perforate the duodenal wall and therefore avoid the dispersion of tumor cells. However, NEWS and CLEAN-NET are difficult to perform at the duodenum because of the narrow working space. Irino et al. reported a LECS procedure in which ESD was performed by endoscopy, followed by closure of the mucosal defect using seromuscular suturing via laparoscopy [5]. This procedure can improve the feasibility and safety of LECS for duodenal tumor resection.

If the tumor is located on the pancreas side, a very careful approach is necessary because reinforcement by seromuscular sutures cannot be performed on this side. In such cases, transduodenal approach with mini laparotomy should be considered [10].

The number of LECS procedures performed for duodenal tumors remains limited, and careful surgery is required. The development of LECS for duodenal carcinoma or tumors located at the third or fourth portion of the duodenum is a challenge for the future.

Conclusion

The LECS approach for duodenal tumors would be preferable for resection along a precise cut line to ensure negative margins and avoid unwanted resection. However, creative procedures will be required in the future to improve the reliability and benefits of LECS for duodenal lesions.

References

1. Cheng HL, Lee WJ, Lai IR, Yuan RH, Yu SC (1999) tumor. Hepatogastroenterology 46: 2100-2104.Laparoscopic wedge resection of benign gastric tumor. Hepatogastroenterology 46: 2100-2104.
2. Bouillot JL, Bresler L, Fagniez PL, Samama G, Champault G, et al. (2003) Laparoscopic resection of benign submucosal stomach tumors. A report of 65 cases. Gastroenterol Clin Biol 27: 272-276.
3. Hiki N, Yamamoto Y, Fukunaga T, Yamaguchi S, Nunobe S, et al. (2008) Laparoscopic and endoscopic cooperative surgery for gastrointestinal stromal tumor dissection. Surg Endosc 22: 1729-1735.

4. Sakon M, Takata M, Seki H, Hayashi K, Munakata Y, et al. (2010) A novel combined laparoscopic-endoscopic cooperative approach for duodenal lesions. J Laparoendosc Adv Surg Tech A 20: 555-558.
5. Irino T, Nunobe S, Hiki N, Yamamoto Y, Hirasawa T, et al. (2015) Laparoscopic-endoscopic cooperative surgery for duodenal tumors: a unique procedure that helps ensure the safety of endoscopic submucosal dissection. Endoscopy 47: 349-351.
6. Honda T, Yamamoto H, Osawa H, Yoshizawa M, Nakano H, et al. (2009) Endoscopic submucosal dissection for superficial duodenal neoplasms. Dig Endosc 21: 270-274.
7. Yamamoto Y, Yoshizawa N, Tomida H, Fujisaki J, Igarashi M (2014) Therapeutic outcomes of endoscopic resection for superficial nonampullary duodenal tumor. Dig Endosc 26: 50-56.
8. Goto O, Mitsui T, Fujishiro M, Wada I, Shimizu N, et al. (2011) New 6 method of endoscopic full-thickness resection: a pilot study of nonexposed endoscopic wall-inversion surgery in an ex vivo porcine model. Gastric Cancer 14: 183-187.
9. Inoue H, Ikeda H, Hosoya T, Yoshida A, Onimaru M, et al. (2012) Endoscopic mucosal resection, endoscopic submucosal dissection, and beyond: full-layer resection for gastric cancer with nonexposure technique (CLEAN-NET). Surg Oncol Clin N Am 21: 129-140.
10. Abe N, Takeuchi H, Hashimoto Y, Yoshimoto E, Kojima Y, et al. (2015) Laparoscopy-assisted transduodenal excision of superficial nonampullary duodenal epithelial tumors. Asian J Endosc Surg 310-315.