

What is the best reconstruction after totally laparoscopic distal gastrectomy if the delta-shaped gastroduodenostomy cannot be performed?

Sang-Hoon Ahn^{1,2}, Hyung-Ho Kim^{1,2}

¹Department of Surgery, Seoul National University College of Medicine, Seoul, Korea; ²Department of Surgery, Seoul National University Bundang Hospital, Seongnam, Korea

Corresponding to: Hyung-Ho Kim, M.D, Ph.D, Professor. Department of Surgery, Seoul National Bundang Hospital, 300 Gumi-dong, Bundang-gu, Seongnam-si, Gyenggi-do, 463-707, Korea. Email: hhkim@snuhb.org.



Submitted May 10, 2013. Accepted for publication May 30, 2013.

doi: 10.3978/j.issn.2224-4778.2013.05.35

Scan to your mobile device or view this article at: <http://www.amepc.org/tgc/article/view/2082/2871>

Totally laparoscopic distal gastrectomy (TLDG) means that all the processes are performed laparoscopically without a mini-laparotomy on the epigastrium for the reconstruction in laparoscopy-assisted distal gastrectomy (LADG) (1). Delta-shaped gastroduodenostomy is a representative type of intracorporeal anastomosis. It has been reported that early postoperative outcomes, such as estimated blood loss, return of bowel function, postoperative pain and hospital stays are significantly improved in TLDG compared with LADG. Furthermore, especially in obese patients, the overall complications rate is significantly lower in TLDG than in LADG because direct visualization by laparoscopy gives a better operation view and minimizes unexpected surgical trauma (2,3). Recently, Kanaya *et al.* have reported that the short and long-term outcomes of the 100 consecutive patients with a mean follow-up period of 54.9 months. They concluded that the delta-shaped anastomosis is safe, simple, and provides satisfactory postoperative outcomes (4).

However, intracorporeal Billroth-II anastomosis has been rarely reported until now. There is only one report about intracorporeal Billroth-II (5). Intracorporeal Billroth-II anastomosis is usually performed using a linear stapler. When using a linear stapler, theoretically, a stricture in entry hole could be a problem (6).

To solve this problem, in the issue of *Journal of Gastrointestinal Surgery* (2012;16:738-43), Jianjun Du *et al.* reported a series of 36 patients with a novel, safe, simple, and time-saving Billroth II anastomosis by only stapling devices after laparoscopic distal gastrectomy. The results

grossly appear to be excellent, with good postoperative outcomes and appropriate conduct of the operative procedures. However, we think that this report raises several questions. Firstly, does the entry hole closure by a linear stapler truly cause a stricture? Jianjun De and colleagues assumed that intracorporeal reconstruction of Billroth II was mostly performed by using laparoscopic linear stapler combined with hand-sewn technique. Recently, it is a general trend that the entry hole is usually closed by a linear stapler and this is the most simple and time-saving procedure when intracorporeal gastro-jejunostomy was performed. In experienced hands, it can be finished within 5-10 minutes. The reasons for the hand-sewing closure of the entry hole are a problem of cost and concern for stricture of the efferent loop. Leaving the expense aside, this kind of stricture problem could be avoided if the entry hole is made on the afferent loop side (7). And also with the proper stapling technique, the amount of sacrificed tissue after linear stapling could be even lower than that of hand-sewing manner, which means a proper linear stapling technique do not cause a stricture in the jejunum.

Secondly, Billroth II reconstruction is not a recommendable method in the current situation. There is much concern about gastric remnant carcinoma and worse postoperative quality of life due to alkaline reflux gastritis (8), although Billroth II gastro-jejunostomy is still widely used as a reconstruction after distal gastrectomy. In this point of view, Roux-en Y type reconstruction has been reported as a better option with the advantage of less bile reflux into the remnant stomach or reflux esophagitis than Billroth

II anastomosis (9). And also Roux-en Y reconstruction is thought to be more natural and simple way to make gastro-jejunosomy using a circular stapler.

Thus, what is the best reconstruction after totally laparoscopic distal gastrectomy if the delta-shaped gastroduodenostomy cannot be performed? We cautiously recommend Roux-en Y gastro-jejunosomy rather than Billroth II anastomosis. It has been reported that Roux-en Y anastomosis is superior to Billroth II anastomosis in terms of frequency of bile reflux. Furthermore, it can be performed without concern about the stricture in the common entry hole. However, we need more solid evidence from further clinical trials to determine the best anastomosis after TLDG.

Acknowledgements

Disclosure: The authors declare no conflict of interest.

References

- Ikeda O, Sakaguchi Y, Aoki Y, et al. Advantages of totally laparoscopic distal gastrectomy over laparoscopically assisted distal gastrectomy for gastric cancer. *Surg Endosc* 2009;23:2374-9.
- Kim MG, Kim KC, Kim BS, et al. A totally laparoscopic distal gastrectomy can be an effective way of performing laparoscopic gastrectomy in obese patients (body mass index ≥ 30). *World J Surg* 2011;35:1327-32.
- Kim MG, Kawada H, Kim BS, et al. A totally laparoscopic distal gastrectomy with gastroduodenostomy (TLDG) for improvement of the early surgical outcomes in high BMI patients. *Surg Endosc* 2011;25:1076-82.
- Kanaya S, Kawamura Y, Kawada H, et al. The delta-shaped anastomosis in laparoscopic distal gastrectomy: analysis of the initial 100 consecutive procedures of intracorporeal gastroduodenostomy. *Gastric Cancer* 2011;14:365-71.
- Lee HW, Kim HI, An JY, et al. Intracorporeal Anastomosis Using Linear Stapler in Laparoscopic Distal Gastrectomy: Comparison between Gastroduodenostomy and Gastrojejunosomy. *J Gastric Cancer* 2011;11:212-8.
- Lee WJ, Wang W, Chen TC, et al. Totally laparoscopic radical BII gastrectomy for the treatment of gastric cancer: a comparison with open surgery. *Surg Laparosc Endosc Percutan Tech* 2008;18:369-74.
- Uyama I, Sakurai Y, Komori Y, et al. Laparoscopy-assisted uncut Roux-en-Y operation after distal gastrectomy for gastric cancer. *Gastric Cancer* 2005;8:253-7.
- Osugi H, Fukuhara K, Takada N, et al. Reconstructive procedure after distal gastrectomy to prevent remnant gastritis. *Hepatogastroenterology* 2004;51:1215-8.
- Lee MS, Ahn SH, Lee JH, et al. What is the best reconstruction method after distal gastrectomy for gastric cancer? *Surg Endosc* 2012;26:1539-47.

Cite this article as: Ahn SH, Kim HH. What is the best reconstruction after totally laparoscopic distal gastrectomy if the delta-shaped gastroduodenostomy cannot be performed? *Transl Gastrointest Cancer* 2013;2(S1):102-103. doi: 10.3978/j.issn.2224-4778.2013.05.35