Management of Pylorus During Esophagectomy. To Drain or Not to Drain?

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Dear Editor,

delayed gastric emptying due to bilateral vagotomy after esophagectomy, has been associated with increased aspiration rates, prolonged hospital stay and impaired quality of life. A pyloric drainage procedure in an effort to reduce its incidence, most commonly a pyloroplasty, represented for years a standard part of distal esophagectomy. This trend has been reevaluated nowadays and the question that still remains open is whether we should further keep on draining pylorus during esophagectomy or not.

Surgical pyloric drainage (pyloroplasty/pyloromyotomy), although effective, is directly related to respectable complication rates, such as leakage, bile reflux, dumping syndrome or even postoperative stenosis, with potential fatal outcome. There are several proposed techniques for performing a pyloroplasty nowadays. Heineke- Mikulicz variant is the most widely practiced pyloroplasty (in contrary to Finney or Jaboulay alternatives) and is ideally performed via a 5-cm-long full-thickness antroduodenal longitudinal incision. Pyloroplasty can also be safely performed with a circular or linear stapler, while laparoscopic assisted trans-oral stapled pyloroplasty is also feasible (1).

The existing literature in refer to omission of pyloric intervention at the index operation (open or even minimal invasive) is controversial. The avoidance of intraoperative drainage gained important field in the era of minimally invasive esophagectomies (2, 3). Gastric motility and transit time is actually not significantly impaired, even in the absence of pyloric drainage,

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especially in cases of gastric tube rather than whole stomach approach for reconstruction. In this line, various studies support that “no drainage” tactic leads to comparable results to open surgery including surgical pyloric drainage (4-7), while others show more frequent aspiration events and higher need of pyloric dilatation early postoperatively (8).

Intrapyloric botulinum toxin injection represents a valuable alternative to surgical drainage of pylorus, especially when combined with pyloric dilation, so that many authors favor its intraoperative use (8-9). A total dose between 100 to 200 U of botulinum toxin can be injected into each of four quadrants of the pylorus. Eldaif et al. express on the other hand strong criticism of botulinum injections, due to its higher complication's rates, such as postoperative reflux symptoms, increased need of promotility agents and further postoperative endoscopic interventions as well (10).

There are also isolated reports of electrostimulation for intractable paresis of intrathoracic stomach after esophagectomy. The existing evidence is weak enough, so that this alternative option remains investigational.

The effectiveness and potential benefit of pyloric drainage while performing an esophagectomy are doubtful. Furthermore, the ideal technique of pyloric drainage in terms of complication incidence or in preventing postoperative endoscopic interventions has to be further proven (3,5,8). Given the strong inconvenience among existing studies, we suggest that the best clinical practice is to only perform an intraoperative pylorus dilation (if feasible through the gastric tube), keeping the option of botulinum injection for cases complicated with early postoperative gastric outlet syndrome. A gastrograffin passage may reveal these cases, thus should ideally be routinely performed prior to removal of nasogastric tube, most commonly on postoperative day five. Preoperative endoscopic pyloric balloon dilatation close to esophagectomy (1-2 weeks prior operation) may also obviate the need of postoperative intervention for delayed gastric emptying.

Further and larger prospective studies are

needed to evaluate the short- and long-term effects of every proposed form of pyloric intervention. Although a “not to drain” policy is actually feasible and safe, the initial question remains still unanswered.

Conflict of interest

The authors of the present manuscript have no conflict of interest and no funding to declare.

Authorship

Both authors confirm that they have met the criteria for authorship as established by the International Committee of Medical Journal Editors.

References

1. Hibbard ML, Dunst CM, Swanström LL. Laparoscopic and endoscopic pyloroplasty for gastroparesis results in sustained symptom improvement. *J Gastrointest Surg.* 2011;15(9):1513-9
2. Nguyen NT, Dholakia C, Nguyen XM, Reavis K. Outcomes of minimally invasive esophagectomy without pyloroplasty: analysis of 109 cases. *Am Surg.* 2010;76(10):1135-8
3. Giugliano DN, Berger AC, Meidl H, Pucci MJ, Rosato EL, Keith SW, et al. Do intraoperative pyloric interventions predict the need for postoperative endoscopic interventions after minimally invasive esophagectomy? *Dis Esophagus.* 2017;30(4):1-8
4. Li B, Zhang JH, Wang C, Song TN, Wang ZQ, Gou YJ, et al. Delayed gastric emptying after esophagectomy for malignancy. *J Laparoendosc Adv Surg Tech A.* 2014;24(5):306-11
5. Arya S, Markar SR, Karthikesalingam A, Hanna GB. The impact of pyloric drainage on clinical outcome following esophagectomy: a systematic review. *Dis Esophagus.* 2015;28(4):326-35
6. Mohajeri G, Tabatabaei SA, Hashemi SM, Hemmati H. Comparison of pyloromyotomy, pyloric buginage and intact pylorus on gastric drainage in gastric pull-up surgery after esophagectomy. *J Res Med Sci.* 2016;21:33
7. Akkerman RD, Haverkamp L, van Hillegersberg R, Ruurda JP. Surgical techniques to prevent delayed gastric emptying after esophagectomy with gastric interposition: a systematic review. *Ann Thorac Surg.* 2014;98(4):1512-9
8. Antonoff MB, Puri V, Meyers BF, Baumgartner K, Bell JM, Broderick S, et al. Comparison of pyloric intervention strategies at the time of esophagectomy: is more better? *Ann Thorac Surg.* 2014;97(6):1950-7; discussion 1657-8
9. Fuchs HF, Broderick RC, Harnsberger CR, Divo FA, Coker AM, Jacobsen GR, et al. Intraoperative Endoscopic Botox Injection During Total Esophagectomy Prevents the Need for Pyloromyotomy or Dilatation. *J Laparoendosc Adv Surg Tech A.* 2016 Jun;26(6):433-8
10. Eldaif SM, Lee R, Adams KN, Kilgo PD, Gruszynski MA, Force SD, et al. Intrapyloric botulinum injection increases postoperative esophagectomy complications. *Ann Thorac Surg.* 2014;97(6):1959-64; discussion 1964-5