OBES SURG (2016) 26:862–863
DOI 10.1007/s11695-016-2078-3

LETTER TO THE EDITOR

Laparoscopic Sleeve Gastrectomy with Intraoperative Endoscopic Guidance: the Importance of This Technique

Antonios Athanasiou[1] · **Eleftherios Spartalis**[1] · **Demetrios Moris**[1] · **Andreas Alexandrou**[1] · **Theodoros Liakakos**[1]

Published online: 30 January 2016

Dear Editor:

It was with great interest that we read the article on laparoscopic sleeve gastrectomy (LSG) published in the November 2015 issue of *Obesity Surgery*. Nimeri et al. [1] recommend the routine use of intraoperative endoscopy in order to reduce two major complications after LSG, namely postoperative stenosis and gastric leak. The authors have used this technique in 310 consecutive cases with excellent results over a 6-year period. More specifically, a 32-Fr endoscope was used as a bougie at the beginning of the procedure, and after the transection of the stomach, an endoscopy was performed in order to check for leak, bleeding, and stenosis. When the intraoperative endoscopy was positive for stenosis, especially at the incisura that was not appreciated laparoscopically, the surgeons were able to correct stenosis by removing the invagination suture of the stable line.

✉ Antonios Athanasiou
antwnis_athanasiou@hotmail.com

Eleftherios Spartalis
eleftherios.spartalis@gmail.com

Demetrios Moris
dimmoris@yahoo.com

Andreas Alexandrou
calexandrouandrea@hotmail.com

Theodoros Liakakos
theodlia@med.uoa.gr

[1] 1st Surgery Department, Laikon General Hospital, School of Medicine, National and Kapodistrian University of Athens, 75 Mikras Asias, 115 27 Athens, Greece

According to the literature, only a few surgical departments worldwide perform LSG using intraoperative endoscopic guidance instead of the standard bougie [2–4]. In our surgical department, we have been performing sleeve gastrectomy laparoscopically or robotically with the use of intraoperative endoscopy since 2004 with excellent results [5]. We would like to endorse this method and share some additional advantages that we have identified from our experience using this same method.

The use of an endoscope in order to calibrate the diameter of the gastric tube includes numerous advantages which can reduce considerably the morbidity and mortality of patients who underwent LSG. The endoscope allows us to better understand how close we lie to the lesser curvature, as its light facilitates the correct placement of the instrument (Fig. 1a). The endoscope can also be anchored in the first part of the duodenum, and with subsequent slight retraction, the instrument remains securely in this position throughout the procedure. Right before the end of the procedure, we can verify without difficulty the patency of the gastric tube and inspect the inner surface of the stable line for possible bleeding or leak points (Fig. 1b). Additionally, we can check the outer surface of the stable line for leak points with careful insufflation in the remnant stomach and by filling with water the perigastric area. The aforementioned leak check is considered to be better than dye injection in the gastric remnant. Last but not least, intraoperative endoscopy is performed by a member of our surgical team in contrast to the bougie which usually is placed by the anesthesiologists, which means that the possibility for esophageal perforation is eliminated [6, 7].

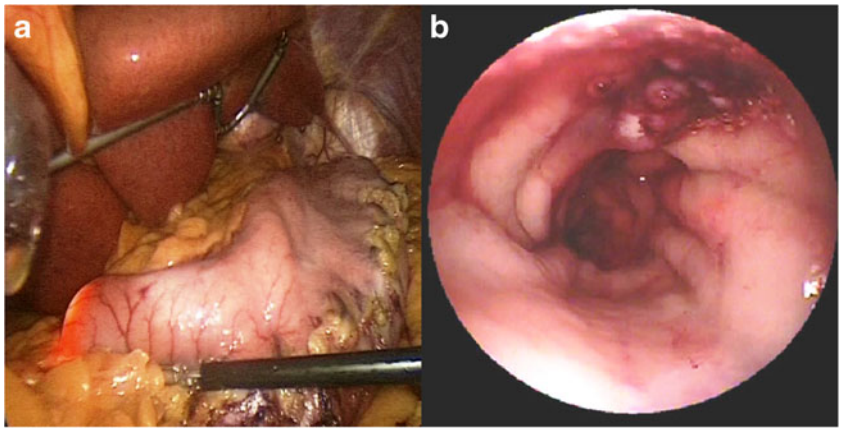

Fig. 1 **a** Endoscope in proper position and the light at its tip, inside the lumen of the stomach. **b** View of the gastric tube by intraoperative endoscopic icon. The inner surface of the staple line is at the top side of the icon

Overall, we strongly believe that the use of the endoscope is crucial not only for the calibration of the gastric sleeve but also for the prevention of significant complications after LSG, such as stenosis and bleeding or even potentially fatal complications such as gastric leak. The routine use of intraoperative endoscopy can be implemented without any significant change in the operation time and the cost of the procedure, and can be considered as a practical addition to the surgical armamentarium.

Compliance with Ethical Standards

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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

Conflict of Interest The authors declare that they have no competing interests.

References

1. Nimeri A, Maasher A, Salim E, et al. The use of intraoperative endoscopy may decrease postoperative stenosis in laparoscopic sleeve gastrectomy. Obes Surg. 2015. doi:10.1007/s11695-015-1958-2.
2. Frezza EE, Barton A, Herbert H, et al. Laparoscopic sleeve gastrectomy with endoscopic guidance in morbid obesity. Surg Obes Relat Dis. 2008;4(5):575–9.
3. Andreas A, Adamantios M, Antonios A, et al. Laparoscopic sleeve gastrectomy for morbid obesity with intra-operative endoscopy: lessons we learned after 100 consecutive patients. Obes Surg. 2015;25(7):1223–8.
4. Ruiz-Tovar J, Sola-Vera J, Miranda E, et al. Laparoscopic sleeve gastrectomy with endoscopic versus bougie calibration: results of a prospective study. J Laparoendosc Adv Surg Tech A. 2014;24(10):671–5.
5. Alexandrou A, Athanasiou A, Michalinos A, et al. Laparoscopic sleeve gastrectomy for morbid obesity: 5-year results. Am J Surg. 2015;209(2):230–4.
6. Gagner M, Huang RY. Comparison between orogastric tube/bougie and a suction calibration system for effects on operative duration, staple-line corkscrewing, and esophageal perforation during laparoscopic sleeve gastrectomy. Surg Endosc. 2015. doi:10.1007/s00464-015-4399-z.
7. Theodorou D, Doulami G, Larentzakis A, et al. Bougie insertion: a common practice with underestimated dangers. Int J Surg Case Rep. 2012;3(2):74–7.