

Entrapment of a nasogastric tube in the stapler line during laparoscopic sleeve gastrectomy: A case report

 Hikmet Kadakal,  Sertaç Ata Güler,  Nuh Zafer Canturk,  Turgay Şimşek,  Ecenur Varol,
 Ozan Can Tatar,  Mahmut Burak Kilci

Department of General Surgery, Kocaeli University Faculty of Medicine, Kocaeli, Türkiye

ABSTRACT

Laparoscopic sleeve gastrectomy (LSG) is one of the most commonly performed bariatric procedures worldwide. Although generally safe, it is not without complications. We present a rare case of intraoperative entrapment of a nasogastric tube (NGT) in the stapler line during LSG, which resulted in a staple line leak. The complication was identified and managed intraoperatively. This case highlights the importance of communication between surgical and anesthesia teams, as well as meticulous intraoperative control.

Keywords: Bariatric surgery, nasogastric tube, sleeve gastrectomy, staple line leak, surgical complication

Introduction

Obesity is a multifactorial and complex disease resulting from the interaction between genetic and environmental factors.^[1] Its prevalence continues to rise globally, making it a major public health concern.^[2] When conservative methods fail, bariatric surgery becomes an effective and sustainable treatment option for morbid obesity. Bariatric procedures are classified into three main categories: Restrictive, malabsorptive, and combined techniques.^[3-5] Among the restrictive options, laparoscopic sleeve gastrectomy (LSG) has gained widespread popularity due to its efficacy and relative technical simplicity.^[6]

However, LSG is associated with potential complications, including infections, thromboembolic events, staple line leaks, strictures, respiratory issues, and technical mishaps such as entrapment of surgical instruments or devices like bougies or nasogastric tubes within the staple

line.^[7-11] Herein, we report a rare complication in which a nasogastric tube (NGT) was inadvertently stapled within the gastric sleeve, resulting in a leak, and we describe its intraoperative management.

Case Report

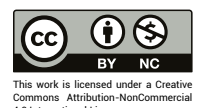
A 53-year-old female with a body mass index (BMI) of 39.6 kg/m² presented to our clinic with morbid obesity resistant to professional dietary interventions. Her medical history included type II diabetes mellitus and essential hypertension. After comprehensive preoperative evaluation, laparoscopic sleeve gastrectomy was planned.

Under general anesthesia, a 38F esophageal bougie was introduced orally for calibration. Starting 6 cm proximal to the pylorus, sleeve gastrectomy was performed using an Endo GIA stapler: Two green (4.1 mm), two gold (3.8 mm), and four blue (3.5 mm) cartridges were applied



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Correspondence: Hikmet Kadakal, M.D., Department of General Surgery, Kocaeli University
Faculty of Medicine, Kocaeli, Türkiye
e-mail: hikmetkadakal@gmail.com



along the greater curvature, terminating near the angle of His. The resected stomach was extracted.

A routine intraoperative methylene blue test revealed a leak. Upon inspection, it was noted that the nasogastric tube (NGT), inserted preoperatively by the anesthesia team for gastric decompression, had not been removed and was inadvertently stapled within the resected gastric sleeve. The NGT was gently withdrawn. Examination of the specimen revealed that a portion of gastric tissue and the NGT tip were embedded in the staple line (Fig. 1). Upon opening the specimen (Fig. 2), a 2 cm defect was identified at the site of the leak. The gastric sleeve was repaired using a stapler by approximating the tissue margins.

The patient remained nil per os for two days postoperatively. A contrast study on postoperative day 2 showed no leak or stricture (Fig. 3), and oral intake was gradually re-



Figure 1. NGT tip in staple line.



Figure 2. The used NGT was found to be shorter than the unused NGT.



Figure 3. A contrast study.

sumed. The patient was discharged in stable condition. At her 4-month follow-up, she had lost 25 kg, with a BMI reduced to 30.1 kg/m². No further complications were observed during follow-up visits.

Discussion

Entrapment of devices such as bougies or nasogastric tubes (NGTs) within the staple line during laparoscopic sleeve gastrectomy (LSG) is a rare but preventable complication.

Intraoperative recognition of this issue allows for timely intervention and repair. Some surgeons advocate the use of intraoperative endoscopy to localize and assess the integrity of the staple line in such cases. In our case, the disruption in the staple line was clearly visualized laparoscopically after removal of the NGT, so endoscopic evaluation was deemed unnecessary.

One mechanism reported in similar cases is that the anesthesiologist may retract the NGT to the oropharynx prior to stapling, but during bougie insertion, the NGT may inadvertently advance back into the stomach and become trapped in the staple line.

Prompt recognition and management of complications in bariatric surgery are critical to minimizing morbidity and mortality. In our case, the patient was transferred to the ward with the NGT still in place postoperatively. The fol-

lowing day, it was removed by another physician assuming it was no longer needed. If the staple line disruption had not been recognized intraoperatively, this sequence of events could have led to a delayed leak and acute abdomen after resuming oral intake.

Conclusion

In laparoscopic bariatric procedures, ensuring removal of the nasogastric tube prior to stapling is essential to prevent serious complications. This requires clear communication between the surgical and anesthesia teams. Ultimately, the responsibility for tracking and verifying the presence and removal of all intraoperative devices should rest with the surgeon. To minimize risk, it may be advisable for the surgical team to be directly involved in both the insertion and removal of the nasogastric tube. Such vigilance can significantly reduce the likelihood of preventable complications.

Disclosures

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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References

1. WHO. Obesity: Preventing and managing the global epidemic. Report of a WHO consultation. Available at: <https://iris.who.int/handle/10665/42330>. Accessed Sep 24, 2025.
2. Mayoral LP, Andrade GM, Mayoral EP, Huerta TH, Canseco SP, Rodal Canales FJ, et al. Obesity subtypes, related biomarkers & heterogeneity. *Indian J Med Res* 2020;151(1):11–21.
3. Lim RB, Blackburn GL, Jones DB. Benchmarking best practices in weight loss surgery. *Curr Probl Surg* 2010;47(2):79–174.
4. Tritos NA, Mun E, Bertkau A, Grayson R, Maratos-Flier E, Goldfine A. Serum ghrelin levels in response to glucose load in obese subjects post-gastric bypass surgery. *Obes Res* 2003;11(8):919–24.
5. Roth CL, Reinehr T, Schernthaner GH, Kopp HP, Kriwanek S, Schernthaner G. Ghrelin and obestatin levels in severely obese women before and after weight loss after Roux-en-Y gastric bypass surgery. *Obes Surg* 2009;19(1):29–35.
6. Yehoshua RT, Eidelman LA, Stein M, Fichman S, Mazor A, Chen J, et al. Laparoscopic sleeve gastrectomy—volume and pressure assessment. *Obes Surg* 2008;18(9):1083–8.
7. Ali M, El Chaar M, Ghiassi S, Rogers AM; American Society for Metabolic and Bariatric Surgery Clinical Issues Committee. American Society for Metabolic and Bariatric Surgery updated position statement on sleeve gastrectomy as a bariatric procedure. *Surg Obes Relat Dis* 2017;13(10):1652–7.
8. Gagner M, Buchwald JN. Comparison of laparoscopic sleeve gastrectomy leak rates in four staple-line reinforcement options: A systematic review. *Surg Obes Relat Dis* 2014;10(4):713–23.
9. Mocanu V, Dang J, Ladak F, Switzer N, Birch DW, Karmali S. Predictors and outcomes of bleed after sleeve gastrectomy: An analysis of the MBSAQIP data registry. *Surg Obes Relat Dis* 2019;15(10):1675–81.
10. Braghetto I, Korn O, Valladares H, Gutiérrez L, Csendes A, Debandi A, et al. Laparoscopic sleeve gastrectomy: Surgical technique, indications and clinical results. *Obes Surg* 2007;17(11):1442–50.
11. Goitein D, Matter I, Raziel A, Keidar A, Hazzan D, Rimón U, et al. Portomesenteric thrombosis following laparoscopic bariatric surgery: Incidence, patterns of clinical presentation, and etiology in a bariatric patient population. *JAMA Surg* 2013;148(4):340–6.