



Reconstruction for esophageal cancer after previous sleeve gastrectomy technical challenges in a case report

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ABSTRACT

Obesity is a major risk factor for cancer. While bariatric surgery reduces obesity-related risks, it may introduce challenges in surgical oncology. We report a case of esophageal carcinoma in a patient with a history of laparoscopic sleeve gastrectomy (LSG), successfully managed with a completely laparoscopic-thoracoscopic Ivor-Lewis esophagectomy using the remnant stomach for reconstruction. Despite LSG-related vascular alterations, collateral circulation appeared sufficient to support conduit perfusion, suggesting that this approach is feasible in selected patients.

Keywords: Sleeve gastrectomy, esophageal carcinoma, Ivor-Lewis esophagectomy

INTRODUCTION

Obesity is associated with an increased risk of several malignancies, including esophageal carcinoma. Laparoscopic sleeve gastrectomy (LSG) is an effective bariatric procedure for the management of obesity and metabolic comorbidities (1). However, LSG alters gastric anatomy and vascularization, potentially complicating esophagogastric reconstruction. In addition, LSG has been associated with gastroesophageal reflux, Barrett's esophagus, and esophageal carcinoma (2). Although esophageal carcinoma following LSG has been reported, experience with a completely laparoscopic-thoracoscopic Ivor-Lewis esophagectomy using the remnant stomach remains limited. The altered vascular anatomy raises concerns regarding conduit perfusion and anastomotic safety, making surgical planning particularly challenging in this patient population.

CASE REPORT

A 58-year-old woman (body mass index 35 kg/m²) had undergone LSG eight years earlier for type 2 diabetes. She presented with progressive dysphagia. Endoscopy revealed a squamous cell carcinoma located 26 cm from the incisors. Staging computed tomography demonstrated no distant metastasis. After multidisciplinary tumor board evaluation, neoadjuvant chemoradiotherapy was administered. Following restaging, a completely laparoscopic-thoracoscopic Ivor-Lewis esophagectomy was planned.

The abdominal phase was performed laparoscopically using four ports, followed by a three-port thoracoscopic approach. Adhesions related to the prior LSG were carefully lysed. The left gastric vessels were divided, and standard lymphadenectomy was completed. During gastric mobilization, particular attention was paid to preserving potential collateral blood supply. The remnant stomach was assessed for length and perfusion and was deemed suitable as a conduit. Conduit perfusion was evaluated by visual assessment of color, pulsation, and bleeding from the staple line. Following transection, mucosal color was also assessed to further estimate tissue perfusion. Indocyanine green fluorescence imaging was not used; although it could have provided a more objective evaluation of perfusion, indocyanine green imaging

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was not available under the existing institutional conditions. Thoracoscopic esophageal mobilization proceeded to the level of the azygos vein, and a side-to-side esophagogastric anastomosis was created using a circular stapler.

The postoperative course was uneventful, and the patient was discharged on postoperative day 13. Final pathology revealed adenosquamous carcinoma, staged as T3N1.

DISCUSSION

LSG substantially modifies gastric anatomy and vascular supply, which may complicate esophageal cancer surgery. Consequently, colonic or jejunal interposition is often considered. However, reports describing successful use of the remnant stomach after LSG remain scarce (3-5). Most available data consist of isolated case reports or small series, limiting the generalizability of current evidence. Previous cases have demonstrated feasibility using different surgical approaches and methods to assess conduit perfusion.

Although LSG disrupts the short gastric and gastroepiploic vessels, long-term vascular adaptation and collateral circulation may preserve adequate perfusion. In the present case, collateral circulation was evident intraoperatively and supported safe reconstruction. These findings suggest that the remnant stomach may remain a viable conduit in carefully selected patients. Careful intraoperative assessment of conduit viability is therefore essential.

CONCLUSION

With careful preoperative planning and meticulous intraoperative assessment of conduit perfusion, the remnant stomach can be safely used for esophageal reconstruction following Ivor-Lewis esophagectomy in selected patients with prior LSG. To the best of our knowledge, reports of completely laparoscopic-thoracoscopic Ivor-Lewis esophagectomy following LSG are

extremely limited, and this case adds to the emerging experience in this setting. This Video 1 demonstrates the key technical steps and intraoperative decision-making process required to safely perform this complex reconstruction.

Video Link: <https://drive.google.com/file/d/1aLsXhUMPOZgGVba1BT0wyD94yp4pl4Ps/view?usp=sharing>

Ethics

Informed Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying video/images. No identifiable patient information is included.

Footnotes

Authorship Contributions

Surgical and Medical Practices: G.O., M.A.U., H.T.; Concept: G.O., M.A.U., H.T.; Design: G.O., M.A.U.; Data Collection or Processing: G.O., M.A.U., K.C.C.; Analysis or Interpretation: G.O.; Literature Search: G.O., K.C.C.; Writing: G.O., M.A.U., H.T.

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