Commentary: The search for the Holy Grail to prevent anastomotic leaks: Let's keep looking, it is not omentoplasty

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An omental flap being sutured during a minimally invasive Ivor Lewis esophagectomy.

Central Message

Experienced esophageal surgeons found that omentoplasty does not prevent anastomotic leaks after neoadjuvant therapy and minimally invasive esophagectomy. We must continue examining leak prevention.

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In 2015, the number of minimally invasive esophagectomies performed in the United States surpassed the number of open esophagectomies performed.¹ Minimally invasive esophagectomy is associated with decreased postoperative morbidity, mostly by reducing pulmonary complications, and improved quality of life.^{2,3} However, despite recent advances, esophagectomy is still a morbid procedure. Morbidities occur in >60% of patients, and mortality is 3.8%.⁴ Anastomotic leaks are one of the most dangerous complications of esophagectomy and continue to vex surgeons. Leaks occur in at least 10% of patients, and 10% to 15% of these patients die in the postoperative period.^{4,5} In addition to the emotional toll on patients, families, and surgeons, the management of an anastomotic leak can pose a tremendous cost burden, increasing hospital stay by a week and doubling the cost of the esophagectomy.⁶

Many surgeons use an omental flap, wrapped around the anastomosis, to attempt to decrease the incidence of leaks. Three randomized trials showed a decreased incidence of anastomotic leak with the use of omentum.⁷⁻⁹ These studies included both transthoracic and transhiatal esophagectomies, preceded the era of minimally invasive surgery, and were done in patients with squamous cell cancer. Curiously, a meta-analysis of the 3 randomized studies¹⁰ showed that only patients who underwent transhiatal esophagectomy benefitted from an omental flap; no benefit was seen in patients who received omentoplasty during transthoracic esophagectomy.

In the current issue of the *Journal*, Lu and colleagues¹¹ from the University of Pittsburgh explored the value of wrapping the anastomosis with an omental flap in a retrospective series of patients with esophageal cancer who underwent minimally invasive Ivor Lewis esophagectomy after neoadjuvant chemoradiation. The study population is different from the previous randomized studies and is more contemporary and in line with current practice

guidelines recommending neoadjuvant therapy for patients with esophageal cancer. The authors identified 245 patients who had neoadjuvant chemoradiotherapy followed by minimally invasive Ivor Lewis esophagectomy. Approximately 60% of patients (147/245) had omentoplasty. It is important to note that most of the esophagectomies (71.8%, 176/245) were performed by Dr Luketich, arguably the surgeon with the most experience with minimally invasive esophagectomy in the United States. Applying advanced statistics and careful propensity matching, the authors were unable to demonstrate a therapeutic benefit of adding an omental flap to their anastomosis. This is concordant with the meta-analysis of previous studies that showed no benefit of an omental flap during transthoracic esophagectomy.

There are other important points in the study that should serve as examples to all of us publishing the results of esophagectomy. The incidence of anastomotic leak was carefully reported and appropriately classified. In the best hands of the group with the largest published experience in minimally invasive Ivor Lewis esophagectomy, the leak rate was 15%. Most of the leaks required some intervention, and only 4 of 37 patients (10.8%) had Class 1 leaks, which were detected radiographically but did not require intervention. The need to take down the newly constructed conduit due to tip necrosis (Class 4 leak) occurred in ~8% of patients with leaks (3/37) and in 1.2% (3/245) of all patients.

These are sobering results, and I commend the authors for their transparency.

As a surgeon who uses omental flaps in my esophageal anastomosis, the results are disappointing. Over the years, I have witnessed small leaks in patients with omental flaps, and some class 4 leaks, but I had the impression that free leaks occurred less often with the flaps. This impression is not supported by the data presented by Lu and colleagues. So, the big question is, where do we go from here? For those of us who use omental flaps, should we stop doing them? What can surgeons do to prevent anastomotic leaks? We will need to continue to search for the Holy Grail to prevent anastomotic leaks, but we should not accept leaks in more than 10% of patients undergoing esophagectomy as inevitable.

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