

Mechanical cervical esophagogastric laterolateral anastomosis after esophagectomies

Anastomose mecânica esofagogástrica cervical látero-lateral após esofagectomias

JOÃO BATISTA NETO, TCBC-AL¹; PAULA GABRIELA MELO MORAIS²; MARCOS DA COSTA NEPOMUCENO, ACBC-AL³; JOSÉ CARDOSO CAVALCANTE JR, TCBC-AL⁴; TADEU MURITIBA, TCBC-AL³; ALBERTO JORGE FONTAN, TCBC-AL⁵

A B S T R A C T

Among the challenges of esophagectomies, the cervical anastomosis remains challenging for its consequences, the main being the anastomotic stricture. The authors present a technique for an Orringer-fashion mechanical cervical laterolateral esophagogastric anastomosis, which reduces the rate of fistula and stenosis.

Key words: Esophagus. Esophagectomy. Anastomotic leak. Anastomosis, surgical. Abdominal wound closure techniques.

INTRODUCTION

Among the challenges of esophagectomies, fistula of the cervical anastomosis remains a major concern of morbidity and mortality, among which stands out stenosis, due to restrictions and distress it imposes to the patient.

The cervical fistula affects 10 to 50% of anastomoses and half results in stenosis with consequent need of dilation sessions¹.

In 1998, Collard *et al.*² compared a new technique of laterolateral (side-to-side), mechanical, cervical esophagogastric anastomosis (CEGA), using the uppermost part of the gastric fundus and posterior wall of the esophagus, with the classic end-to-side, manually sutured esophagogastronomy. Their aim was to reduce the high risk of fistula stenosis and that the latter entailed. Their results using the stapler in a laterolateral suture fashion were satisfactory in reducing the rate of stenosis.

Orringer *et al.*¹ modified this technique in 2000 and demonstrated its effectiveness by performing a mechanical, side-to-side anastomosis, however using the anterior wall of the stomach and the posterior one of the esophagus. This would minimize gastroesophageal reflux by creating a retroesophageal gastric pouch that gets distended by air when swallowing. This technique has reduced their 10-15% fistula rate when using manual suture

to 2.7% clinically significant fistulae when performing this new anastomosis technique.

The aim of this study is to disseminate the technique from Orringer *et al.*¹ to patients undergoing transhiatal esophagectomy, applying it in the transposed or tubularized stomach with satisfactory results, due to the lack of publications about it among Brazilian surgeons.

TECHNIQUE

The transhiatal esophagectomy³ is performed through the left cervical and abdominal accesses. It is indicated in megaesophagus, in tumors of the lower third of the esophagus and cardia, and esophageal benign strictures. All figures were adapted from Orringer *et al.*¹.

Once the cervical access is completed, with the dissected esophagus and stomach (wholesome or tubularized) ready to be transposed, we continued performing: 1- gentle traction of the specimen until the stomach recedes 5 cm above the left clavicle (Figure 1). During this transmediastinal passage, the stomach should be monitored not to be rotated about its axis; 2- section of the esophagogastric junction with TLC75 cutting linear stapler. We carry out a manual, continuous, anchored reinforcement suture with 3-0 polyglecaprone; 3- release

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1. Associate Professor, Module Digestive, Discipline of Adult Health and Aging, School of Medicine, Federal University of Alagoas; 2. Resident, General Surgery, Department of General Surgery and Specialties, Professor. Alberto Antunes University Hospital; 3. Assisting Physician, Department of General Surgery and Specialties, Professor. Alberto Antunes University Hospital; 4. Technical Director, Prof. Úlpio Miranda Center for High Complexity in Oncology; 5. Chief, Department of General Surgery and Specialties, Professor. Alberto Antunes University Hospital.

of the remaining esophageal stump until its posterior wall lies on the anterior wall of the stomach, somewhat redundant, so that there is no tension in the anastomosis when traction is applied to the reconstituted structure; 4- repair of esophageal edges. Repair of the edges of the gastric fundus. Repair of the stomach in the body, so that it is extended (Figure 2). Gastrostomy is performed on the anterior wall of the stomach with electrocautery, 1cm in length, enough to fit the lower blade of the stapler, at least 3cm in length, to get a good anastomotic mouth. Introduction of the upper blade of the stapler in the esophagus. Adjustment of the two blades and firing of the stapler with slight tilt to the right. Suture in three points between the seromuscular layer of the stomach and esophageal muscle in both sides (Figure 3). Passage of 16F enteric or nasogastric tube to the duodenum for feeding 24 hours after the procedure; 5- manual, continuous, anchored suture of the anterior esophagogastric anastomosis with 3-0 polyglecaprone, starting with one suture on each side, the two meeting in the middle. Another layer of suture with separate stitches is applied to invaginate the suture (Figure 4), 6- A gentle traction is applied to the stomach towards the abdominal cavity, to adequate positioning of the anastomosis, with two fixing stitches between the hiatal transition and the prevertebral fascia. Drainage of the cervical region is performed with a Penrose No. 1 drain, followed by synthesis.

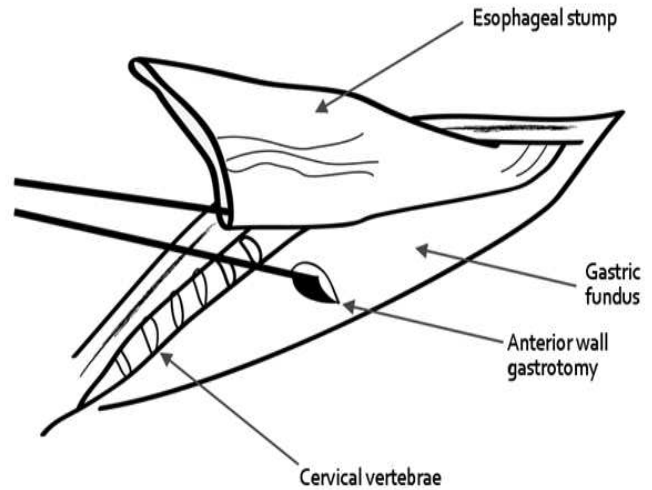


Figure 2 - A centimeter transverse gastrostomy in the anterior wall of the stomach.

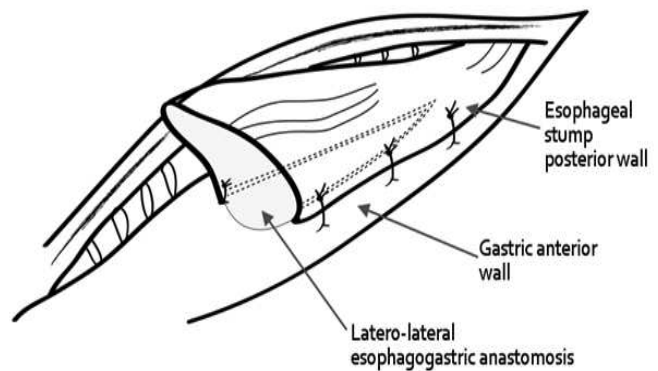


Figure 3 - Stapling with TLC 75 of the posterior wall of the esophagus with the anterior wall of the stomach.

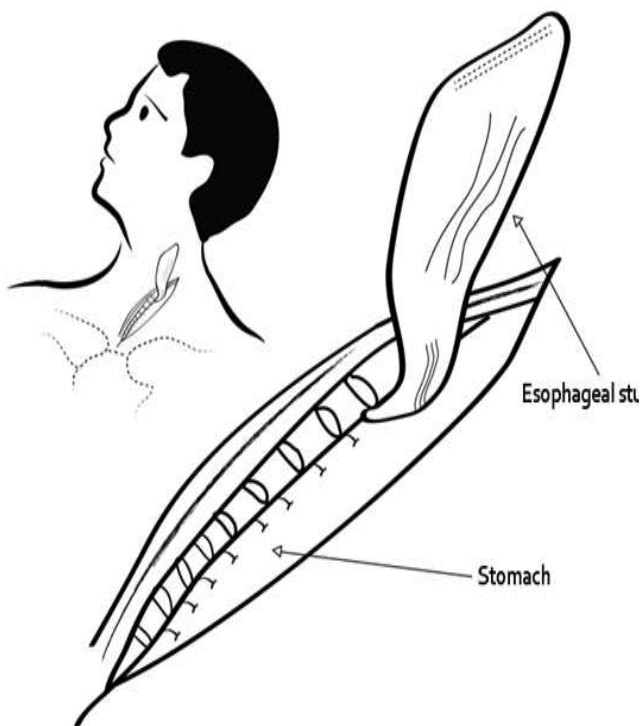


Figure 1 - Esophageal stump dissection. Wholesome of tubularized stomach transposition.

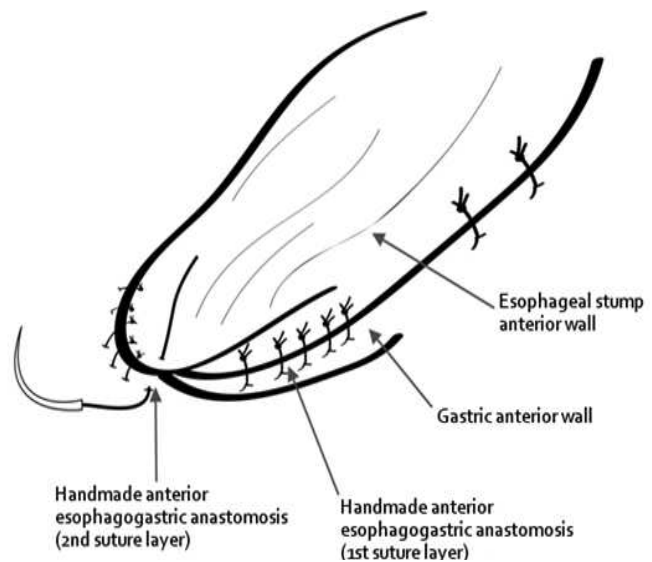


Figure 4 - Manual closing of the side-to-side esophagogastric anastomosis, in two layers, the first being a continuous suture of 3-0 polyglecaprone, and the second formed by invaginating stitches.

DISCUSSION

The experience of our Service with transhiatal esophagectomy was started in 1982 and revolves around a hundred cases, for benign and malignant diseases, through laparoscopic or open accesses. The incidence of fistulae was 32% at the start and dropped to 13.3% and 25% of the fistulae needed 1-3 dilatation sessions⁴.

Multiple attempt techniques are listed in domestic and foreign literature, with no solution of the matter, since when they reduce the rate of fistulas they do not handle stenosis or vice versa^{1,2,5-8}. The laparoscopic approach did not alter the rate of fistulas when compared with open access⁹.

In prospective randomized study published in 2012, Saluja *et al.*¹⁰ found a similar fistula rate comparing manual versus mechanical sutures. However, the stenosis rate was significantly reduced in the stapled group.

With the same concern as the one of surgeons practicing esophageal surgery, since 2008 we adopted the Orringer *et al.*¹ innovation, adapting it to the Brazilian reality, using the TL 75, replacing the original endoGIA and obtaining satisfactory results with the mechanical anastomosis when compared with the manual one. So far there has been no fistula. There was only one sub-stenosis observed at radiological imaging, without clinical expression. The follow-up of patients lasted up to 48 months and endoscopic findings revealed wide anastomotic mouths without reflux into the esophageal stump.

We conclude that the technique adopted in our department is promising, but its validation depends on prospective, longitudinal studies, with comparison between adequate samples.

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R E S U M O

Dentre os desafios das esofagectomias, a fistula da anastomose cervical persiste desafiadora por suas consequências, sendo a principal, a estenose da anastomose. Os autores apresentam uma técnica de anastomose esofagogastrica cervical látero-lateral mecânica à Orringer, que reduz o índice de fistulas e de estenose.

Descritores: *Esôfago. Esofagectomia. Fistula anastomótica. Anastomose cirúrgica. Técnica de fechamento de ferimentos abdominais.*

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Address correspondence to:

Joao Batista Neto
E-mail: jb@batista19.jb@gmail.com