

Esophagojejunal Anastomosis Leakage after Total Gastrectomy: Special Treatment with Thoracic Minimal Invasive Management. Case Report and Review

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ABSTRACT

Background: Esophagojejunal leakage is one of the most serious complication in gastric surgery for cancer.

Case report: We report the case of a 74-year-old woman with severe leakage after d2 total gastrectomy that was treated without re-surgery.

Conclusion: a multidisciplinary approach is the best choice for decision making leakage treatment demonstrating inferior morbidity and mortality then re-surgery.

Keywords: esophagojejunal anastomosis leakage management, laparoscopic gastrectomy, open gastrectomy, gastric cancer, complications after gastrectomy.

INTRODUCTION

Despite improvements in surgical techniques and perioperative management, esophagojejunal anastomotic leakage (EJAL) after D2 total gastrectomy for gastric cancer still constitutes one of the most serious and life-threatening complication, with an incidence between 2% and 9% (1). Treatment options in-

clude multiples strategies from conservative to endoscopic or surgery treatment representing a multi-management challenging event. The anastomotic level influences clinical symptoms, the grade of mediastinitis and patient conditions. Schuchert's classification seems to be the best classification to identify esophago-jejunal leakage (1): INTRAABDOMINAL (IA) anastomosis: the pleural integrity and the presence of close abdominal drains usually avoiding the onset of a

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severe mediastinitis. TRANSTHORACIC (TT) anastomosis with opening of pleura: the leak drains in the pleural cavity helping to avoid severe mediastinitis. TRANSHIATAL (TH) anastomosis without pleural opening: the leak has high risk to mediastinitis since pleural integrity does not allow adequate mediastinal drainage for different pressure within pleural cavity.

The size of the leakage also influences symptoms and treatment. If circumferential leak is <10% of circumference with mild clinical symptoms and low output fistulas with small radiologic evidence, conservative treatment is recommended: fasting, TPN or enteral nutrition, antibiotics and somatostatin analogues. In the absence of conduit necrosis and with leakage >50%, the endoscopic option is the gold standard. If clinical symptoms do not improve, endoscopic therapies such as clips or self-expanding stent (SES) placement is recommended, depending on size margin status of leak and patient clinical status. In the cases with 30%-50% of circumference leak, covered plastic or metal stent (SEPS-SEMS) seems to be more effective. Today, the new Over-The-Scope-Clip (OTSC) system showed less drawbacks and improved results for early leakages (<one week) (2, 3).

The objective of this review is to compare various kinds of treatment from non-operative management (NOM) to endoscopic or surgical options to demonstrate that a multimodality treatment is the best choice to obtain fewer perioperative morbidity/mortality (MM) in EJAL. This is a literature research using PubMed, Embase, and Cochrane databases, where retrospective-prospective-single/multicentre analysis were reviewed by the use of the following keywords: laparoscopic gastrectomy, open gastrectomy, gastric cancer, complications after gastrectomy, management in esophagojejunal anastomosis. All titles, abstracts or related citations were reviewed. □

CASE REPORT

A 74-year-old woman was admitted to our department because of microcytic anemia, weight loss, anorexia, vomiting. Upper gastroendoscopy with biopsy revealed an ulcer 4 cm x 3 cm at gastric antrum. Histopathological examination found a poorly differentiated ulcerative adenocarcinoma (ADC). We completed normal

pre-operative routine and a staging. Total Body TC Scan showed multiple pathologic peri-gastric lymph nodes but didn't show metastatic pathology and demonstrated absence of carcinomatosis. During multidisciplinary meeting (oncologists, surgeons, radiologists, endoscopists), we decided to perform a neoadjuvant chemotherapy with Epirubicin, Capecitabine, 5-FU (ECF). Then the patient underwent an open D2 total gastrectomy with an end to side esophago-jejunal anastomosis with 21 mm EEA stapler and using Roux-en-Y reconstruction. In the fourth post-operative day, the patient presented high fever, dyspnea and elevated white blood cells with more than 80% neutrophils. We performed a thoracic-abdominal computed tomography (CT) that showed enlarged right empyema without abdominal fluid collection. Patient conditions came critical after a cardiac arrest and she was intubated and treated with reanimation therapy and transferred to the intensive care unit (ICU) for not-stable conditions, where a first thoracic drain was placed to promote the expansion of the right lung. When the patient became stable, we performed a Gastrographin Enema CT scan that revealed an EJAL with right thoracic communication reason of the right pleural empyema (Figures 1 and 2). So, we decided to put another thoracic drain 24 F to drain pleural fluid collection in communication with the EJAL without any abdominal surgical procedure. The patient stayed in ICU for two weeks on antibiotic therapy. When her improved, we performed another thoracic Tc that demonstrated a not drained

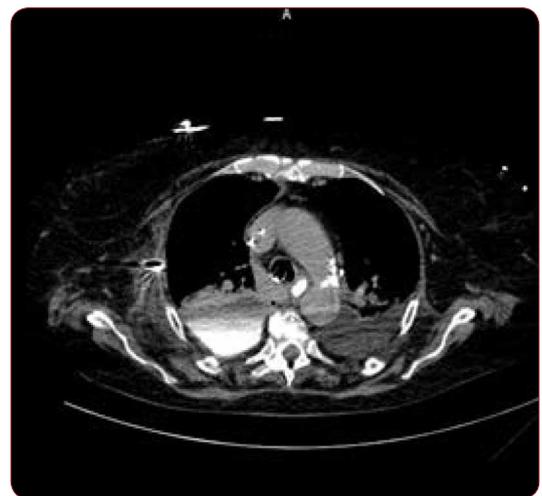


FIGURE 1. Right thoracic empyema and EJAL

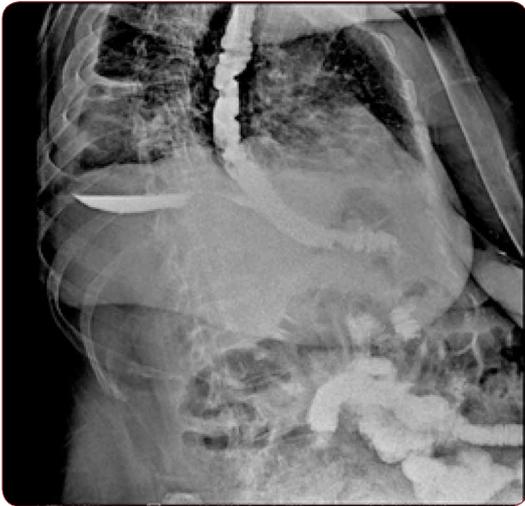


FIGURE 2. EJAL



FIGURE 3. Esophageal SES



FIGURE 4. Pleural effusion diminished after drains removed and SES placement

pleural abscess. Radiologic trans-thoracic pigtail drain resolved the problem. We completed the procedure with endoscopic therapy with SES placement (Figure 3). The thoracic Ray demonstrated the complete resolution of leakage (Figure 4). The patient was discharged after 30 days of hospitalization with high weight loss, asthenia and difficulties to walk. Histopathological finding showed T3N2M0 G2 adenocarcinoma. An oncologic follow-up was started. A thoraco-abdominal CT scan after six months follow-up demonstrated carcinomatosis, and the patient died one year after the operation. □

DISCUSSION

Multidisciplinary approach is the best choice to treat complications of gastric surgery: medical management, nutritional treatment, minimally invasive thoracic drainage, radiologic helpful and endoscopic management are the gold standard to treat EJAL without re-surgery. In a retrospective multicenter study, EJAL is the cause of death within 30 days of hospitalization for 30% of cases (2). Mediastinitis is the most dangerous complication. Several risk factors have been described in anastomotic leakage; general and local factors. That's include patient performance status, nutritional parameters, patient comorbidity states, operative hypotension, intraoperative blood loss and oxygen delivery, operation time and surgeon technique (type of anastomosis, mechanical or hand sewn, anastomotic vascularization or tension). Treatment of EJAL is challenging and depends on various findings such as type of anastomotic failure, timing of identification, patient's clinical condition, anastomotic level, size of leakage, margin status (3-5).

In our case, we used a three-step treatment without surgery: a) thoracic drain to drain pleural effusion and anastomotic fluid trans-thoracic without abdominal surgery; b) conservative management with Nihil per os and TPN (total parenteral nutrition); c) endoscopic therapy with SES placement. We evaluated the total absence of abdominal effusion and we used the different pressure between abdominal and thoracic pressure to drain anastomotic leakage without reoperation and without thorcotomy. The reason why the fluid was only in the pleura, and not in the abdomen is unknown – maybe the fibrosis

due to neoadjuvant therapy has made the pleura so unrecognizable that it was included in the esophagojejunal anastomosis, creating a direct communication with the right pleural cavity. Conservative management is recommended in stable patients with >30% degree of leakage

using endoscopic therapy. If the leakage is >50% or such approaches fail, surgical options are available (6-10). □

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REFERENCES

1. **Aurello P, et al.** Treatment of esophagojejunal anastomosis leakage: a systematic review from the last two decades. *Am Surg* 2015;5:450-453.
2. **Lee S, Ahn JY, Jung HY, et al.** Clinical outcomes of endoscopic and surgical management for postoperative upper gastrointestinal leakage. *Surg Endosc* 2013;27:4232-4240.
3. **Wang Q, Liu ZS, Qian Q, et al.** Treatment of upper gastrointestinal fistula and leakage with personal stage nutrition support. *World J Gastroenterol* 2008;14:5073-5077.
4. **Fabio Carboni, et al.** Esophagojejunal anastomosis leakage after total gastrectomy for esophagogastric junction adenocarcinoma: options of treatment. *J Gastrointest Oncol* 2016;4: 515-522.
5. **Yonggang Lv, et al.** Management of intrathoracic leakage after radical total gastrectomy. *J Thorac Dis* 2010;3:180-184.
6. **Kumar N, Thompson CC.** Endoscopic therapy for postoperative leaks and fistulae. *Gastrointest Endosc Clin N Am* 2013;23:123-136.
7. **Dişibeyaz S, Köksal AŞ, Parlak E, et al.** Endoscopic closure of gastrointestinal defects with an over-the-scope clip device. A case series and review of the literature. *Clin Res Hepatol Gastroenterol* 2012;36:614-621.
8. **Galizia G, Napolitano V, Castellano P, et al.** The OverThe-Scope-Clip (OTSC) system is effective in the treatment of chronic esophagojejunal anastomotic leakage. *J Gastrointest Surg* 2012;16:1585-589.
9. **Sauvanet A, Mariette C, Thomas P, et al.** Mortality and morbidity after resection for adenocarcinoma of the gastroesophageal junction: predictive factors. *J Am Coll Surg* 2005;201:253-262.
10. **Cochetti G, Del Zingaro M, Boni A, Cocca D, Panciarola M, Tiezzi A, Gaudio G, Balzarini F, Ursi P, Mearini E.** Colovesical fistula: review on conservative management, surgical techniques and minimally invasive approaches. *G Chir* 2018;4:195-207. Review.PMID: 30039786.