



REVISTA DE GASTROENTEROLOGÍA DE MÉXICO

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EDITORIAL

Treatment of esophageal perforation: A review of our experience at a tertiary referral hospital spanning the past 19 years[☆]



Tratamiento de la perforación de esófago, revisión de nuestra experiencia en un hospital de tercer nivel en los últimos 19 años

Esophageal perforation is a surgical emergency, and its rapid identification and treatment is indispensable for reducing morbidity and mortality rates. The authors of the article cited herein review the management experience of esophageal perforation at a tertiary referral hospital in Mexico. In their case series, Boerhaave syndrome was the main cause of esophageal perforation, followed by causes associated with endoscopic procedures.

Depending on the literature examined, more than half of esophageal perforations are iatrogenic, primarily associated with endoscopic procedures^{1–3}. Other important causes are 1) Boerhaave syndrome, 2) the ingestion of foreign bodies, 3) trauma, 4) intraoperative perforation, and 5) cancer. Diagnosis tends to be delayed when the perforation is not associated with a procedure, given that clinical suspicion is low, and it can be confused with other diagnoses, such as acute myocardial infection or pneumonia.

The principles of esophageal perforation management include making an early diagnosis, stabilizing the patient, and deciding upon whether treatment should be surgical or nonsurgical. Early diagnosis and treatment are the main factors for reducing morbidity and mortality. As the authors concluded in their article, the principal predictor of survival in cases of esophageal perforation is the interval of time between lesion presentation and diagnosis, and its consequent early treatment. Leakage of the gastroesophageal content into the mediastinum produces a severe inflammatory process that can result in sepsis, multiorgan failure, and death. Mortality has been reported to practically dou-

ble when there is a delay in treatment of 24 hours or more³. In their conclusion, the authors stated that survival in the patients that had early diagnosis and treatment was 100%, whereas mortality was 100% in the patients that had late diagnosis and treatment. Those findings strengthen the evidence that early diagnosis and treatment are essential.

Once the diagnosis is suspected, treatment should be started immediately, including fasting, fluid resuscitation, and broad-spectrum antibiotics that are effective against aerobic and anaerobic bacteria, such as ampicillin/sulbactam, piperacillin/tazobactam, or carbapenems. Antifungal coverage should be added in selected cases (patients that are immunosuppressed, that are being treated with steroids, that have achalasia, etc.) or cases that do not improve with treatment. The patient should be monitored in the intensive care unit and prepared for surgery.

The majority of patients will require surgical treatment, even though non-surgical treatment can be an option in selected cases. Stents can also be used in selected patients with multiple comorbidities, advanced sepsis, or very large esophageal perforations, in whom there is a very high surgical risk⁴. Importantly, to have a good result, in addition to stent placement, the extraesophageal content adjunctive to the perforation should be drained. A lesion in the cervical esophagus, a lesion extending across the esophagogastric junction, a lesion > 6 cm, and another associated distal leak have been identified as factors associated with stent failure. Endoscopic clips can also be utilized in selected cases and may be indicated in small defects with healthy surrounding mucosa. Just as in stent placement, it is important to drain the extraluminal content. Conservative management can be carried out in patients with early diagnosis, a contained perforation, and minimal leakage of esophageal content. Fasting, fluids, and antibiotics are employed, as long as the

[☆] Please cite this article as: Torres-Villalobos G. Tratamiento de la perforación de esófago, revisión de nuestra experiencia en un hospital de tercer nivel en los últimos 19 años. *Rev Gastroenterol Méx.* 2022;87:403–404.

patient is stable, but if any deterioration occurs, surgery should be performed.

Surgical treatment is required in the majority of cases and the following principles should be strictly adhered to: 1) debride the necrotic tissue, 2) clearly identify the borders of the mucosa for suturing, 3) suture the mucosa with absorbable interrupted stitches and the muscular layer with nonabsorbable interrupted stitches. Perforation site is another important factor to consider. Compared with thoracic or intra-abdominal perforations, cervical perforations are generally easier to treat, with fewer complications.

In cases of cervical esophageal perforation, in which the site of the lesion cannot be visualized, a drain may be placed, as long as there is no distal obstruction. A diverting esophagostomy is indicated when the patient is unstable, the defect cannot be repaired due to its size or tissue friability, or if there is a previous esophageal disease. Esophagectomy can be considered in the patient that presents with obstructions that are distal to the perforation, such as associated achalasia, stricture, or cancer. Esophagectomy should only be performed if the patient is stable and there is minimal tissue contamination.

In summary, the main factors associated with the morbidity and mortality of esophageal perforation are delay in the diagnosis, location of the perforation, type of repair, and etiology of the perforation. Early diagnosis is critical, and a delay of more than 24 hours significantly increases mortality. Perforation location is an important determining factor regarding morbidity and mortality, which are lower for cervical perforation, followed by abdominal perforation. Thoracic perforation has the highest morbidity and mortality rates. Primary closure is the standard treatment for thoracic, abdominal, and cervical perforations that are visible.

Financial disclosure

No financial support was received in relation to this article.

Conflict of interest

The author declares that there is no conflict of interest.

References

1. Merchea A, Cullinane DC, Sawyer MD, et al. Esophagogastroduodenoscopy-associated gastrointestinal perforations: a single-center experience. *Surgery*. 2010;148:876–80, <http://dx.doi.org/10.1016/j.surg.2010.07.010>.
2. Kavic SM, Basson MD. Complications of endoscopy. *Am J Surg*. 2001;181:319–32, [http://dx.doi.org/10.1016/s0002-9610\(01\)00589-x](http://dx.doi.org/10.1016/s0002-9610(01)00589-x).
3. Brinster CJ, Singhal S, Lee L, et al. Evolving options in the management of esophageal perforation. *Ann Thorac Surg*. 2004;77:1475–83, <http://dx.doi.org/10.1016/j.athoracsurg.2003.08.037>.
4. Sharma P, Kozarek R, Practice Parameters Committee of American College of Gastroenterology. Role of esophageal stents in benign and malignant diseases. *Am J Gastroenterol*. 2010;105:258–73, <http://dx.doi.org/10.1038/ajg.2009.684>.

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