SHORT COMMUNICATION

Boerhaave’s syndrome: A review of our experience over the last 16 years


Servicio de Cirugía General y del Aparato Digestivo, Hospital General Universitario de Castellón, Castellón de la Plana, Castellón, Spain

Received 9 July 2013; accepted 6 November 2013
Available online 2 June 2014

KEYWORDS
Boerhaave; Esophagus; Perforation spontaneous; Mediastinitis

Abstract
Objective: Report our experience in the diagnosis and treatment of Boerhaave syndrome by retrospective study from 1997 to 2013.
Patients and methods: A retrospective study was conducted covering the time frame of 1997 to 2013.
Results: There were a total of 5 men (71%) and 2 women (29%) and the mean age was 54 years (range: 33-80 years). Diagnosis was made through computed tomography scan in 5 cases (71%) and esophagogram in 2 cases (19%). Six patients (86%) had emergency surgery, whereas one case (14%) was managed conservatively. The surgical technique employed was primary suture and repair in 4 patients (67%) and esophageal resection and subsequent cervical esophagostomy in 2 patients (33%).
Conclusions: Boerhaave’s syndrome is a clinically rare entity with an elevated mortality rate.
Therefore, a high degree of suspicion is necessary for making the diagnosis and providing early treatment that can result in improved outcome.

Síndrome de Boerhaave: revisión de nuestra experiencia en los últimos 16 años

Resumen
Objetivo: Comunicar nuestra experiencia en el diagnóstico y tratamiento en el síndrome de Boerhaave mediante estudio retrospectivo desde 1997 hasta 2013.

Palabras clave: Boerhaave; Esófago; Perforación espontánea; Mediastinitis

* Corresponding author: C/Almendro 19, 1.º D, 12006 Castellón de la Plana, España. Tel.: +68 5635207.
E-mail address: laura.9487@yahoo.es (L. Granel-Villach).

© 2013 Asociación Mexicana de Gastroenterología. Published by Masson Doyma México S.A. All rights reserved.
Results: In total, 5 varones (71%) y 2 mujeres (29%). Media de edad de 54 años (rango 33-80). Se llegó al diagnóstico mediante tomografía computarizada en 5 casos (71%) y esofagogram en 2 casos (19%). Seis pacientes (86%) se intervenieron de forma urgente, mientras que en un caso (14%) se optó por actitud conservadora. La técnica quirúrgica empleada fue la sutura primaria y plastia en 4 pacientes (67%) y la resección esofágica y posterior esofagomastectomía cervical en 2 pacientes (33%).

Conclusions: El síndrome de Boerhaave es una entidad clínica poco frecuente con una elevada mortalidad. Por ello, debe tenerse un alto nivel de sospecha clínico, con el objetivo de un diagnóstico y tratamiento precoz, mejorando de este modo el pronóstico.

© 2013 Asociación Mexicana de Gastroenterología. Publicado por Masson Doyma México S.A. Todos los derechos reservados.

Introduction

Boerhaave's syndrome was first described in 1724 by Hermann Boerhaave, upon witnessing a man's death as a consequence of spontaneous esophageal perforation after the effort of vomiting. This perforation is generally located at the level of the inferior third of the esophagus, on the left side, some 3-5 cm from the gastroesophageal junction. Its etiology involves a sudden increase in the intraesophageal pressure. The classic clinical symptoms are vomiting, chest pain, and subcutaneous emphysema, known as Mackler's triad. However, this combination of symptoms is not always identifiable, representing a diagnostic challenge. Despite the advances in surgery, anesthesia, and postoperative care over the last 20 years, the morbidity and mortality figures are still high. Therefore, there must be a high level of clinical suspicion for making the diagnosis and providing early treatment and thus improving the outcome.

The aim of the present study was to communicate our experience in the management of Boerhaave's syndrome, evaluating the different strategies employed.

Methods

A retrospective study was conducted of patients diagnosed with Boerhaave's syndrome in our center within the time frame of October 1997 and February 2013. The inclusion criteria were: patients with spontaneous esophageal perforation, above the age of 14 years, with or without surgical intervention. The exclusion criteria were: esophageal perforations due to other causes and patients under 14 years of age.

The variables analyzed were: age, sex, triggering factors, risk factors, clinical manifestations, length of time from symptom onset to diagnosis, complementary tests, perforation location and size, therapeutic decision, type of approach, surgical technique, surgical complications, intensive care unit (ICU) stay, postoperative hospital stay, and survival.

For the descriptive analysis of the different variables, frequency percentages were used for the qualitative variables and measures of central tendency for the quantitative variables.

Discussion

Boerhaave's syndrome is a surgical emergency with a high mortality rate. The medical literature reports a 20-30% mortality rate for this pathology, in contrast with the 43% of our case series.

Even though there were only 7 patients in our case series, that number is high, given the low frequency of the disease; 83 is the highest number of patients reported on in a published case series.
Coordining with the results of our study, spontaneous esophageal perforation is more frequent in men. It has traditionally been associated with important vomiting or the Valsalva maneuver, and its clinical presentation is intense pain and emphysema, even though it can present without these symptoms. In our study, the clinical presentation appeared subsequent to vomiting in 3 cases, it was related to the effort of coughing in 2 cases, and in one case it was associated with the effort of a prior bowel movement. The triggering cause could not be identified in only one case.

With respect to imaging studies, chest x-ray is indispensable.7,8 Left pleural effusion is practically a constant factor in this event, as our study reflected. Contrast-enhanced esophagography is the best diagnostic option, although today, due to its greater availability and precision, CT has gained importance and is often the definitive diagnostic study. In fact, in our case series, 2 of the older cases were diagnosed through esophagography, whereas CT was employed in the most recent cases.

There is no defined or established therapeutic decision for Boerhaave’s syndrome. The choice between surgery or conservative treatment depends on many factors. Conservative treatment is indicated in hemodynamically stable patients with contained perforations that do not show any signs of sepsis or have the placement of a stent, thoracic tube, or feeding gastrostomy or jejunostomy.9,10 In our study, conservative management was only decided upon in one of the 7 cases and it was due to the fact that the patient’s age and comorbidities were high surgical risk factors.

The surgical options are primary closure, reinforced primary closure (intercostal muscle, pleura, diaphragm, stomach, omentum, and lung) and esophageal exclusion or resection. Reinforced primary closure is the treatment of choice when progression is less than 24 hours. More aggressive procedures, such as esophageal exclusion or resection, are indicated in cases of long perforations, extensive contamination, associated esophageal disease, primary closure failure, or persistent sepsis.10 In our study, primary suture was the option of choice and was performed in all of the cases, except for 2, one of which presented with sepsis of abdominal origin, and another that presented with extensive mediastinic contamination that had progressed > 24 hours. Reoperation in the form of partial esophagectomy was required in another patient due to failed primary suture.

As study conclusions, we emphasize the importance of early diagnosis, which is related to outcome. Complementary studies are essential given the inconsistency of the clinical presentation, and abdominopelvic CT scan was stressed in our study. With respect to management, surgical treatment currently appears to be the option that provides the best results.

Financial disclosure

No financial support was received in relation to this article.

Conflict of interest

The authors declare that there is no conflict of interest.

References