

Boerhaave's syndrome: long free interval before successful primary repair

Case report



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AIM: Report case of a 66-year-old man come to our observation for a bilateral pleural effusion, ten days after clinical manifestations of chest pain, initially misdiagnosed with a myocardial infarction.

MATERIAL OF STUDY: On the same day, the patient underwent an emergency chest CT scan with orally administered contrast medium that confirmed our suspicion of breakage of the esophageal wall. The patient underwent to a left thoracotomy: the visceral pleura and all the structures covered by the parietal pleura were affected by a widespread necrotic process. The subsequent cleansing of the pleural cavity revealed that the distal portion of the thoracic esophagus was lacerated for about 5 cm; the tear was repaired with continuous reabsorbable sutures; to protect the suture fundoplication of the gastric fundus was performed.

RESULTS: Post-operative course was complicated on 15th day by a chylous spreading from the chest drains; to complete the postoperative checks, a chest CT scan was therefore performed, orally administering the contrast medium without any signs of extraluminal spreading; the chylous effusion resolved spontaneously with diet. After being discharged, the patient was followed on an outpatient basis for 36 months.

CONCLUSION: Boerhaave's syndrome is a rare and serious clinical condition; when a patient is diagnosed after 24-48 hs, many surgeons follow conservative treatment; however primary repair can be safely accomplished regardless of the time interval between perforation and operation, like our singular experience demonstrated.

KEY WORDS: Boerhaave's syndrome, Mediastinitis, Primary repair.

Introduction

Spontaneous esophageal perforation-Boerhaave's syndrome is a life-threatening injury associated with an overall mortality rate ranging from 20% to 75% depending on the onset of treatment¹⁻³.

As delay in diagnosis of more than 24 h was frequently reported to have a profound effect on the mortality, management was historically accorded to un the free interval between perforation and treatment. We report of a successful primary repair of a left lower oesophageal tract rupture that occurred in a patient who came to our observation ten days after clinical symptoms, initially misdiagnosed as myocardial infarction.

Case report

A 66-year-old male went to the A&E Department of a suburban hospital complaining of nausea, vomiting and unclearly specified chest pain. Tests showed alterations of the electrocardiographic tracing compatible with anterior myocardial ischemia; this finding, together with elevated myocardial damage markers, led to the patient being transferred to the Cardiology Unit of another hospital for intensive monitoring.

Early from the onset the presuntive myocardial ischemic disease appeared to be a concomitant problem and consequent to the prominence of a pulmonary condition characterized by massive bilateral pleural effusion with hemothorax impairment. On the third day of hospitalization, a CT-Scan of the chest with contrast medium was therefore performed, revealing considerable left apico-basal pleural effusion with atelectasis of the upper and lower lobes, requiring the positioning of a left pleural drainage tube

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and the onset of Total Parenteral Nutrition infusion. Considering the lack of a clinical response and the persisting suspicion of a septic disease of the pleural cavity, on the tenth hospitalization's day the patient was transferred to the Chest Surgery Department of our University Hospital with the diagnosis of septic shock and probable left pleural empyema.

On the same day, the patient underwent an emergency chest CT-Scan with contrast medium administered orally. This confirmed the suspicion of breakage of the third distal level of the esophageal wall on the left side shown by the consequent spread of the contrast medium in the cavity on that side (Fig. 1).

The patient underwent emergency surgery on the same day. Exploration of the pleural cavity showed it to be entirely occupied by necrotic material; the visceral pleura and all the structures covered by the parietal pleura were affected by a widespread necrotic process. The subsequent cleansing of the pleural cavity revealed that the distal portion of the thoracic esophagus was longitudinally lacerated through its entire thickness for about 5 cm (Fig. 2).

After careful mobilization of the distal esophagus and the cardia, the tear was repaired with continuous reabsorbable sutures (PDS); to protect the suture fundoplication of the gastric fundus was performed after phrenotomy.

Pleural decortication allowed good re-expansion of the pulmonary parenchyma; the operation was concluded by fashioning a jejunostomy for enteral nutrition with a tube, to be activated if necessary.

On the 15th day there was slight chylous spreading from the chest drains; to complete the postoperative checks a chest CT scan was therefore performed, administering

the contrast medium orally. This did not show any signs of extraluminal spreading of the hydrosoluble contrast medium; the chylous effusion resolved spontaneously with diet.

After being discharged, the patient was followed on an outpatient basis for 36 months; this consisted of Upper Digestive Tract X-ray and chest CT scan every 12 months.

Discussion

Boerhaave's syndrome is a rare and serious clinical condition; it accounts from 30% to 40% of all cases of esophageal perforation and is associated with high morbidity and mortality because predisposes patients to the development of fatal mediastinitis and multisystem organ failure⁴.

Prompt recognition and initiation of treatment of esophageal perforations has long been recognized as being essential for a favorable outcome. For determining a patient's prognosis, the interval between perforation and diagnosis and therapy seems to be crucial. The "golden time period" for successful therapy is within the first 24 hours.

However, delay in diagnosis did not affect mortality rates in most recent published series^{2,5}.

According to this we believe, like many other authors⁴⁻⁷, that primary repair of the esophagus, in absence of coexisting disease, should be the gold standard treatment for Boerhaave's syndrome, even if the free interval between clinical symptoms and surgical repair is longer than 24 hours.

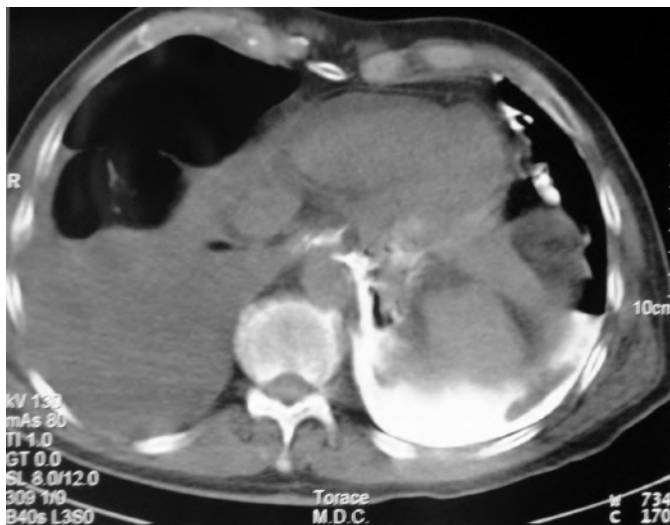


Fig. 1: CT-Scan with contrast medium administered orally showing the breakage of the third distal section of the esophageal wall on the left side with consequent spread of the contrast medium in the cavity on that side.

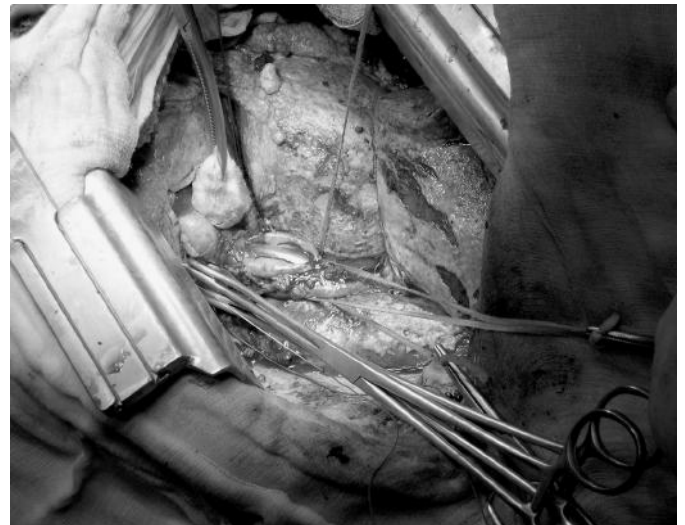


Fig. 2: The distal portion of the thoracic esophagus appears to be lacerated through its entire thickness longitudinally for about 5 cm; here it is clearly visible the Naso Gastric Tube.

Conclusions

Boerhaave's syndrome is best treated with definitive repair and drainage procedures. In general when a patient is diagnosed after 24-48 hs, many surgeons follow conservative treatment; however primary repair of intrathoracic esophageal perforation can be safely accomplished in most patients regardless of the time interval between perforation and operation, like our singular experience demonstrated.

Riassunto

Riportiamo il caso singolare di un paziente, giunto alla nostra osservazione da un ospedale regionale per un versamento pleurico bilaterale, dieci giorni dopo la comparsa di dolore toracico, inizialmente imputato ad una sindrome coronarica acuta. Ivi è stato sottoposto a posizionamento di tubo di drenaggio pleurico sinistro dopo Tc del Torace con mdc iodato.

Giunto nel nostro reparto il paziente è stato sottoposto a Tc del Torace con somministrazione di gastrografin per os, nel sospetto di una perforazione esofagea spontanea (Sindrome di Boerhaave).

La Tc ha confermato il nostro sospetto, pertanto il paziente è stato immediatamente sottoposto a toracotomia esplorativa sinistra. L'esplorazione del cavo pleurico ha rivelato come questo fosse interamente occupato da materiale necrotico; la pleura viscerale e parietale risultavano ricoperte da materiale necrotico; dopo accurata toilette del cavo è stato possibile apprezzare come la porzione distale dell'esofago toracico fosse lacerata longitudinalmente per una lunghezza di circa 5 cm. Dopo mobilizzazione è stata eseguita una riparazione con una sutura continua in PDS; a protezione della sutura esofagea è stata eseguita una funduplicatio con il fondo gastrico, dopo frenotomia.

Il decorso post-operatorio è stato complicato in XV giornata dalla comparsa di fuoriuscita di liquido chiloso dai tubi di drenaggio toracici, motivo per cui il paziente ha ripetuto una Tc del Torace con gastrografin che è risultata negativa per spandimenti; il chilotorace si è risolto con l'impostazione di una dieta priva di lipidi.

Dopo la dimissione il paziente è stato seguito per 36 mesi, ripetendo un Transito delle Prime Vie Digestive ed una Tc del Torace ogni 12 mesi.

La Sindrome di Boerhaave rappresenta un'urgenza medica e chirurgica con una mortalità elevata per lo sviluppo repentino di mediastinite necrotizzante e shock settico. La diagnosi tempestiva è fondamentale per impostare il trattamento; se viene riconosciuta entro le prime 24-48 ore dall'esordio il gold standard terapeutico è rappresentato dalla riparazione primaria della breccia esofagea per via toracotomica; tuttavia sono riportate varie serie in letteratura²⁻⁵ in cui perforazioni trattate con chirurgia tardiva non presentano un incremento statisticamente significativo della mortalità.

Il nostro caso è, a nostro avviso, eccezionale, in quanto un perforazione esofagea spontanea è stata trattata con successo mediante riparazione primaria dopo 10 giorni dall'esordio sintomatologico a conferma del fatto che, in pazienti che non presentano importanti comorbidità, il trattamento chirurgico può essere considerato opzione di scelta anche se l'intervallo tra la presentazione clinica e la diagnosi è superiore alle 24-48 ore.

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