

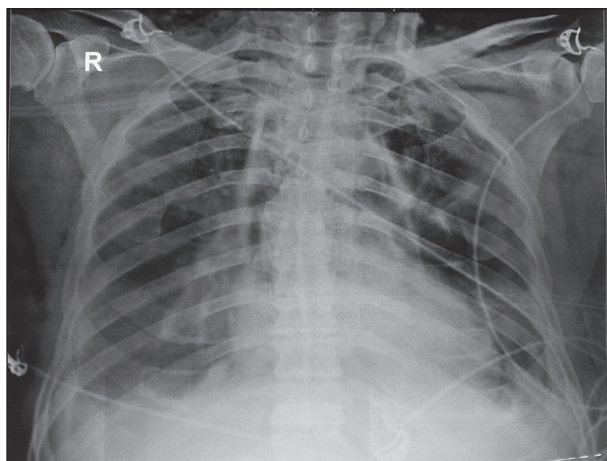
## Anesthetic management in spontaneous esophageal rupture (Boerhaave's syndrome)

Sir,

Spontaneous rupture of the esophagus is a rare and lethal condition involving complete transmural laceration of the esophagus. Literature reports a mortality of 100% if untreated and 70% after a timely surgical intervention.

A 66-year-old gentleman diagnosed with Boerhaave syndrome successfully underwent a bilateral thoracoscopic lavage and primary esophageal repair with alternate one-lung ventilation. He presented to us in shock with marked epigastric tenderness and abdominal distension, 18 h after onset of projectile vomiting and chest pain. On chest auscultation, bilateral crepitations were present. Chest X-ray [Figure 1] revealed bilateral opacities and blunting of costophrenic angles. Blood investigations showed a raised blood glucose (250 mg/dl) and serum creatinine (1.7 mg/dl). Computed tomography chest [Figure 2] confirmed esophageal rupture as there was extravasation of contrast from the distal esophagus into the mediastinum.

The patient was taken up for surgery within 2 h of admission. After rapid sequence induction with thiopentone (300 mg) and succinylcholine (100 mg), he was intubated with a left sided (37 French) double lumen endobronchial tube. Pressure controlled single lung ventilation was commenced at incision. During left lung ventilation, we encountered difficulty in maintaining oxygen saturation and ventilated both lungs twice. Thoracoscopic surgery revealed food particles in the mediastinum, which were evacuated through lavage. Occasional bradyarrhythmias



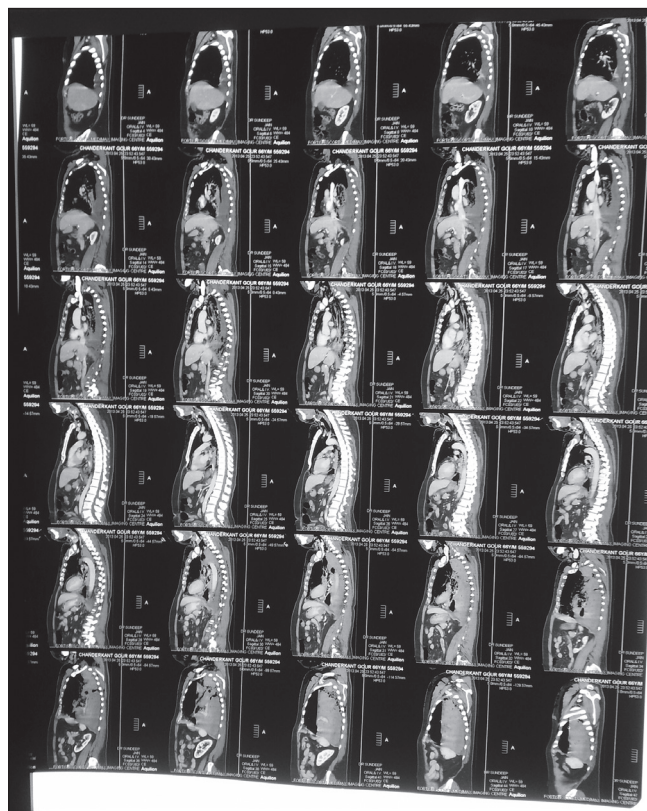
**Figure 1:** Preoperative chest X-ray showing bilateral lung opacities, blunting of costophrenic angles and a left intercostal drain *in situ*

were observed at the time of handling of the pericardium, which aborted spontaneously. Fluid management was guided by central venous pressure and urine output.

After surgery, an epidural catheter was inserted in the T10-T11 interspace and patient shifted to surgical intensive care. The patient was kept on Pressure controlled ventilation with low tidal volume and physiological positive end expiratory pressure (PEEP) for adequate gas exchange. Extubation and removal of chest tubes and epidural catheter were carried out on 1<sup>st</sup> and 5<sup>th</sup> postoperative day respectively. He was discharged on the 14<sup>th</sup> postoperative day.

Patients with Boerhaave syndrome require a definitive surgical treatment within 24 h of presentation for a better surgical outcome.<sup>[1]</sup> Teh *et al.* retrospectively reviewed 34 patients of Boerhaave syndrome. Their median Intensive Care Unit stay was 1.5 and 6.5 days in patients with early and delayed management respectively.<sup>[2]</sup>

Anesthetic management entails correction of preoperative fluid deficits; smooth induction avoiding increases in abdominal pressure, which may exacerbate leakage of gastro-esophageal contents and minimizing aspiration risk by a rapid sequence induction. Barbara *et al.*, have advocated the use of a



**Figure 2:** Computed tomography chest showing extravasation of contrast from distal end of the esophagus into the mediastinum

defasciculating dose of the nondepolarizing agent prior to succinylcholine administration.<sup>[3]</sup>

Pressure controlled ventilation with lower tidal volume and PEEP aid in reducing pro-inflammatory systemic response, improvement in lung function and early extubation.<sup>[4]</sup> The occurrence of arrhythmias is a possibility when the surgeon is in close proximity to the pericardium.

Timely institution of aggressive resuscitative measures, minimizing aspiration and worsening of existing esophageal injury, as well as the intra-operative use of protective ventilatory strategies by the anesthesiologist can prevent adverse events in this otherwise life-threatening situation.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

**Jyotsna Bhargava, Rajeev Lochan Tiwari,  
Sundeep Jain<sup>1</sup>**

Departments of Anesthesiology and <sup>1</sup>Surgical Gastroenterology,  
Fortis Escorts Hospital, Jaipur, Rajasthan, India

**Address for correspondence:** Dr. Jyotsna Bhargava,  
F-303, Pearl Green Acres, Shree Gopal Nagar, Near Gopalpura By-pass,  
Jaipur - 302 015, Rajasthan, India.  
E-mail:joysam123@yahoo.co.in

### References

1. Sutcliffe RP, Forshaw MJ, Datta G, Rohatgi A, Strauss DC, Mason RC, *et al.* Surgical management of Boerhaave's syndrome in a tertiary oesophagogastric centre. *Ann R Coll Surg Engl* 2009;91:374-80.
2. Teh E, Edwards J, Duffy J, Beggs D. Boerhaave's syndrome: A review of management and outcome. *Interact Cardiovasc Thorac Surg* 2007;6:640-3.
3. Barbara, David W, Benjamin C, Hartman, William R. Boerhaave's syndrome: Spontaneous rupture oesophagus. *Anesthesiology* 2012;117:11274.
4. Michelet P, D'Journo XB, Roch A, Doddoli C, Marin V, Papazian L, *et al.* Protective ventilation influences systemic inflammation after esophagectomy: A randomized controlled study. *Anesthesiology* 2006;105:911-9.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**How to cite this article:** Bhargava J, Tiwari RL, Jain S. Anesthetic management in spontaneous esophageal rupture (Boerhaave's syndrome). *J Anaesthesiol Clin Pharmacol* 2016;32:126-7.

Access this article online	
Quick Response Code:	Website: www.joacp.org
	DOI: 10.4103/0970-9185.175726