

ESOPHAGEAL PERFORATION SECONDARY TO LEMON IMPACTION AND TWO OTHER CASES- A RARE CASE REPORT

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PRESENTATION OF CASES

Case-1

We came across a case of 50 years old female with complaints of dysphagia and loss of appetite since 15 days. Flexible and rigid endoscopy was done along with HRCT Thorax, wherein foreign body was identified in lower 2/3rd oesophagus obstructing the lumen. Later chest x-ray showed significant left pleural effusion. ICD was inserted and post allowing the patient on soft diet food particles were seen draining in ICD. Repeat endoscopy was done, which was suggestive of large perforation at 35 cm from incisor teeth. The diagnosis was delayed for 15 days with medical line of management in pulmonary medicine department.

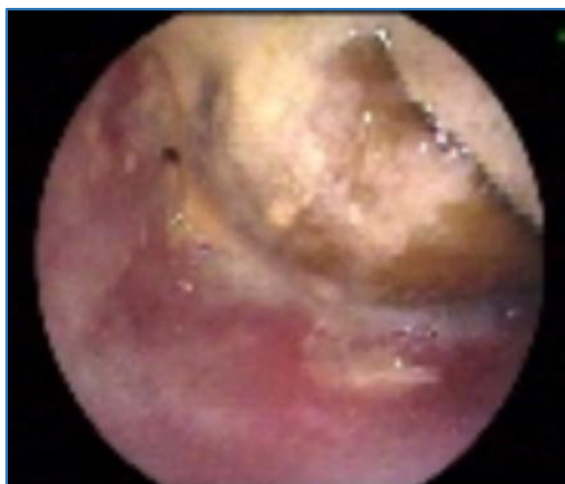


Figure 1. Lemon Impacted Inside Oesophagus



Figure 2. Endoscopy showing Site of Perforation

Mechanism of Perforation

Patient has ingested full lemon, which got obstructed at the lower oesophageal end which was demonstrated by oesophagoscopy. In this situation, oesophagus was acting as a closed chamber being closed at upper end by the constrictor muscle of pharynx and the lower oesophageal sphincter at the lower end. Chest in addition acts as a box with negative pressure, so lemon excoriated the oesophageal membrane for a long time leading to citric acid digestion which led to friability of mucous membrane and perforation thereby.

At the same time Gastrografin study, which includes barium or Gastrografin with flocculating agent so that contrast can be obtained was done. This produces high pressure in the closed oesophageal chamber and will easily perforate the oesophagus at the same site.

Case-2

Patient was referred to surgery department from pulmonary medicine department with complaints of retrosternal and midsternal chest pain, epigastric pain along with nausea and vomiting. X-ray chest showed features of right-sided pneumonitis. With history of chest pain, epigastric pain and right-sided pneumonitis diagnosis was suspected of oesophageal perforation.

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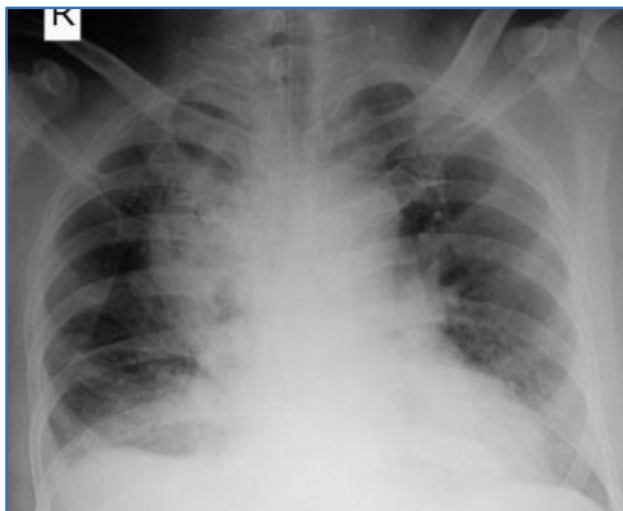


Figure 3. X-Ray Chest showing Mediastinitis

Case-3

Patient with similar presentation as that of case-2 had presented to surgery OPD, wherein HRCT thorax with oesophagogram had been done which showed a 5-mm perforation in mid oesophagus. Patients had complaints of cough, but x-ray chest did not show features of empyema. Patient was managed conservatively on similar lines as that of case-2. Overtime, the patient showed significant improvement.

PATHOLOGICAL DISCUSSION

In Case-1 - Patient was a case of delayed presentation leading to empyema thoracis with collapsed lung and a rigid chest wall. Closure of oesophago-pleuro-cutaneous fistula with decortication was attempted. Locating the oesophagus and the fistula was difficult due to pleural thickening and tissue friability, so Ryle's tube was inserted through oesophagus orally and guided into stomach. Patient was kept on intragastric feeding for 14 days and Gastrografin study was done to know the status of perforation, which showed spontaneous healing of oesophageal perforation. Patient was then started on oral fluids and the indwelling chest tube was removed and oral intake started gradually. Post-op x-ray chest after ingestion of Gastrografin suggested no obvious leak of contrast media from oesophagus.

In Case-2 - Flexible oesophagoscopy was advised, which showed 3 mm perforation at the lower end of oesophagus (Boerhaave syndrome). Chest radiograph showed widened mediastinum and the pneumo-mediastinum was of diffuse radiodensity. Patient was yet to develop empyema, hence conservative treatment was undertaken in the form of GIT decompression, intravenous antibiotics. Nasogastric tube was inserted to empty the stomach and prevent reflux with resultant mediastinal and pleural soiling. Patient was closely monitored and volume expanders were given as needed. Patient improved overtime.

DISCUSSION OF MANAGEMENT

Oesophageal perforations are surgical life-threatening emergencies associated with high morbidity and mortality. The treatment approach depends on the cause of the perforation, the duration and the comorbidity of the patient. Treatment options are diverse and results are often

unsatisfactory. Overall, mortality still ranges from 20% to 50% despite advances in surgical and endoscopic techniques as well as intensive care treatment. The cause of perforation is often iatrogenic, trauma or Boerhaave syndrome. The classical symptoms of oesophageal perforation are pain, fever, cardiac arrhythmia and the presence of subcutaneous or mediastinal air.¹ Various approach for early and delayed oesophageal perforation include primary repair with or without reinforcement, simple drainage of the thoracic cavity using ICD, diversion oesophagectomy, stenting of the perforation with a prosthesis and oesophageal resection with or without primary reconstruction. Endoscopy and radiographic examination are two important approach in view of management.²

Most common cause of oesophageal perforation is iatrogenic.¹ Pre-existing diseases such as large hiatal hernia, vigorous achalasia or diverticula increase the risk of perforation. Surgical treatment includes procedures from local repair and muscle flaps up to an oesophagectomy depending on the localisation, the local infection and the general condition of the patient. So it can be managed by two ways, surgery in cases where patients come early (within 12 hours) wherein inflammatory changes and friability has not set in and oesophagus can be nicely closed; the another way is non-surgical management where empyema has set in and marked by pleural effusion and hydropneumothorax wherein one has to drain pleura and control infection of mediastinitis.^{3,4,5} In case friability of the tissue do not set in then one can attempt closure. In case it is friable and pleura is thickened, conservative approach is to be adopted which may take a longer time. An early diagnosis and an aggressive treatment are the most important prognostic factors in the therapy of an oesophageal perforation. However, conservative treatment also helps the patient.⁶

FINAL DIAGNOSIS

Oesophageal Perforation.

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