

**Case Report****Esophageal Foreign Body Induced Perforation, Presenting as Cardiac Chest Pain Mimicker– Case Report**

Authors

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We report a case of 56 years old male diagnosed case of Type II Diabetes Mellitus and Coronary artery disease in form of old Inferior wall Myocardial Infarction presented initially in cardiology clinic with complaints of acute onset chest pain and difficulty swallowing that started after attending a marriage ceremony one week earlier. During evaluation patient found to have intrathoracic esophageal meat bone impaction with pressure necrosis and ulceration at the edges of impaction leading to intrathoracic esophageal perforations for which the patient managed conservatively and improved.

CASE PRESENTATION

A 56 years old male diagnosed case of Type II Diabetes Mellitus and Coronary artery disease in form of old Inferior wall Myocardial Infarction 2 years back on medical therapy presented initially in cardiology clinic with complaints of chest pain for one week, moderate to severe, non-radiating, continuous, retrosternal, no relation to exertion. There is history of difficulty swallowing noticed on the morning one week back with associated chest pain, and was both for solid and liquid, no history of ingestion of foreign body, nasal regurgitation, and nasal twang in voice, coughing during swallowing, difficulty breathing, weakness of any part of body or altered consciousness. Patient underwent urgent electrocardiogram, Troponin I testing and chest X- ray for these complaints which were normal. Patient referred to gastroenterology clinic for above complaints, and

was taken for esophagogastroduodenoscopy, which revealed meat bone impaction at 34 cm from incisors, with pressure necrosis and ulceration at both edges of impaction [Fig 1a]. Bone removed with foreign body forceps, and after removal showed small circumscribed perforations at site of impaction [Fig 1b].

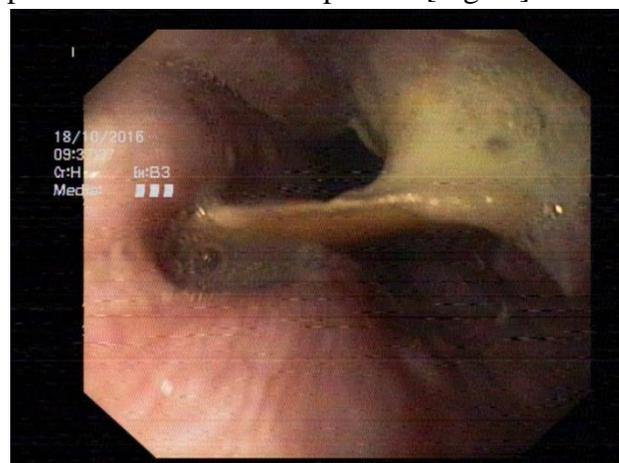
**Fig 1a** – image showing meat bone impaction



Fig 1b – image showing esophageal perforation after bone removal

Patient and attendants given option for fully covered endoscopic self expandable metallic stent (FC-SEMS) placement, but patient and attendants refused due to financial constraints. Ryles tube (18 Fr) was placed over guidewire under endoscopic guidance. On reviewing history, patient and attendants, gave history of meat and alcohol ingestion, one week prior in a marriage ceremony. Possibility of large meat bolus ingestion under influence of alcohol, and alcohol induced amnesia leading to forgetfulness about the event. Contrast Enhanced CT – chest done which revealed esophageal perforation on right lateral wall above gastroesophageal junction with right peri-esophageal collection with air foci with bilateral pleural and mild pericardial effusion [Fig 2].

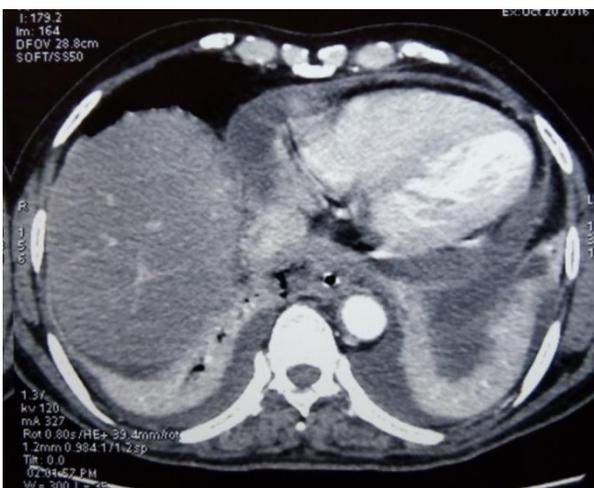


Fig 2 – image showing esophageal perforation with right peri-esophageal collection with air foci with bilateral pleural and pericardial effusion

Patient managed with empiric parenteral antibiotics (Piperacillin –tazobactam), proton pump inhibitors, insulin and Ryles tube feeding and observed for any signs of sepsis. Thoracentesis and pleural fluid analysis revealed neutrophil predominant (total leucocyte count of 850 cells neutrophils – 65%, lymphocytes 35%), exudative effusion. During hospital stay, patient did not develop any fever, tachycardia or tachypnea or any other sign of sepsis except for neutrophilic leucocytosis in initial 3-4 days, which gradually resolved. Other biochemistry including renal and liver function tests remained normal. In view of co-morbidities and non-development of signs of sepsis, conservative management continued. After 2 weeks, patient discharged on oral antibiotic (dispersible tablets of cefepime to be given through ryles tube) and continued ryle tube feeding for another 2 weeks. After four weeks, ryles tube removed and water soluble contrast (gastrograffin) esophagogram obtained, which revealed irregularity of mucosal outline and increased caliber of esophagus lumen 6 cm above the GE – junction, but no extravasation of contrast seen [Fig 3].



Fig 3 – image showing mucosal irregularity and increased caliber of esophageal lumen 6 cm above GE junction but extravasation of contrast

Repeat esophagoduodenoscopy showed slight depression but intact mucosal outline at 34 cm from incisor and no other underlying pathology

predisposing to food bolus impaction. Patient was started on normal diet and remained well on follow up.

DISCUSSION

Esophageal perforation carries with it a high morbidity and mortality rate if not treated appropriately ^[1] Mortality rates for esophageal perforation range from 10% to 30% in most studies ^[2]. In a retrospective review, intrathoracic perforations had a mortality rate of 18%, followed by cervical perforations with 8% mortality rate, and perforations at the gastroesophageal junction with 3% mortality rate^[1]. Esophageal perforations can have different etiologies. Spontaneous perforations occur as a result of a sudden increase in intra-abdominal pressure during forceful vomiting, such as in Boerhaave's syndrome. Iatrogenic perforations may result from diagnostic and therapeutic endoscopic procedures, as complications of thoracic surgeries, and ingestion of caustic substances. Perforations can also occur in diseased esophagus with malignancy and infection.

Esophageal perforation due to foreign body (FB) ingestion is an unusual occurrence ^[3]. Esophageal perforation due to a foreign body usually occurs from swallowing sharp objects such as fish or chicken bones. Adult patients with altered mental status, including the very old, demented, or intoxicated, are at risk for accidental foreign body ingestions. In our case, patient had ingested meat bolus, under influence of alcohol and was not aware of the event.

In a retrospective study by Mahafza T et al ^[4], of the 527 patients admitted with esophageal FB, bones were the principal FB to be found in adult and the complication rate was 2% which included: esophageal perforation and mediastinitis, esophageal stenosis and esophageal erosions. In a review by Peng A et al ^[5], of 1,428 patients, with esophageal foreign body, 121 patients presented with esophageal foreign body-induced perforation and complicated cervical abscess, mediastinitis, and mediastinal abscess.

Among these 121 patients, esophageal foreign bodies in 81 patients were successfully extracted via esophagoscope. In our case, we successfully retrieved impacted meat bone with rat tooth foreign body forceps under endoscopic guidance but after removal noticed the small underlying perforation which was later confirmed on contrast enhanced CT (CECT) – Thorax, which also revealed local collection and bilateral mild pleural and pericardial effusion.

In a retrospective study by Athanassiadi K et al ^[6], in 400 patients with esophageal foreign bodies, the main symptoms patients complained of were difficulty in swallowing and pain. Our patient also presented with chief complaints of retrosternal chest pain and difficulty swallowing, but in view of preexisting cardiac condition, cardiac cause of chest pain was ruled out first by appropriate testing.

Diagnosis of FB esophageal perforation is difficult and is delayed in up to a quarter of patients. The perforation can be due to the FB itself or may be incurred during endoscopic extraction. Both CT and endoscopy are necessary for diagnosis and treatment ^[3]. Endoscopy almost 100% accurate for diagnosing including nonradiopaque objects and allows the most accurate diagnosis of the underlying pathology, such as esophageal stricture. Endoscopy allows visualization of mucosal defects, abrasions, or ulcerations resulting from the foreign body and it also allow removal of the object.

A sharp object in the esophagus must be removed within 24 hours to minimize the risk of perforation, mediastinitis or abscess ^[7]. Although the gold standard for treating esophageal perforation does not exist, etiology, location, time from perforation and existence of sepsis have been considered the main prognostic factors after surgical treatment ^[8]

Approximately one-quarter of patients with esophageal perforation can be managed non-operatively ^[9]. Features associated with a high rate of success for non-operative management – include - well-circumscribed recent cervical or

thoracic perforations, intramural perforation, perforation with contained cavity that drains back into esophagus, perforation with no or localized contrast extravasation, perforation with no evidence of malignancy, obstruction, or stricture, perforation with no evidence of sepsis.^[9]

In our case, though the patient was given option for endoscopic therapy but due to financial constraints, it could not be implemented and patient started on conservative therapy.

For conservative management of esophageal perforation, total parenteral nutrition, broad-spectrum antibiotics, and proton pump inhibitors should be given for a period of 14–21 days ^[9].

Patients should be given nothing by mouth for a minimum of 7 days and then have a Gastrografin swallow to determine if the leak has sealed. If the leak remains but patients show no signs of clinical deterioration, this approach can be continued with repeat contrast studies weekly until there is resolution of the leak. If the clinical condition deteriorates, operative intervention is necessary.^[9]

Our patient had many features associated with high rate of success of non-operative management including small perforation, intrathoracic location, no underlying esophageal pathology, and no signs of sepsis. Our patient showed no signs and symptoms of clinical deterioration on conservative treatment, so it was continued for four weeks after which healing of esophageal perforation was documented with endoscopy and gastrografin esophagogram study.

Successful esophageal healing with conservative treatment has been reported to be as high as 96%, with an overall mortality of 4.2% ^[10].

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