

## FOREIGN BODY THROAT COMPLICATING AS CRICOPHARYNGEAL LEAK

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### ABSTRACT

Esophageal rupture or otherwise known as Boerhaave's syndrome is a rare entity, yet the most fatal one. It usually occurs following episodes of heavy retching or vomiting. The diagnosis is commonly missed or delayed in such cases. Here, we present a unique case of foreign body ingestion in throat in a 50-year-old man, which he spontaneously expelled by retching, causing a tear in the upper cervical esophagus leading to a cricopharyngeal leak and pneumomediastinum. This was managed conservatively as the diagnosis was made early before it could get complicated. To the best of our knowledge, no case has been reported with a tear in the cricopharynx, which is an extremely rare occurrence. The patient has recovered fully and is on regular follow-up now.

**Keywords:** Foreign body throat, Cricopharyngeal leak, Pneumomediastinum.

### INTRODUCTION

Effort rupture of the esophagus or Boerhaave's syndrome is a spontaneous perforation of the esophagus that most commonly results from a sudden increase in intraesophageal pressure combined with negative intrathoracic pressure caused by straining or vomiting [1,2]. It was first described by Dr. Herman Boerhaave, a physician from Leiden, the Netherlands [2]. A 1980 review by Kish cited 300 cases in the literature worldwide [3]. A 1986 summary by Bladergroen *et al.* described 127 cases [4]. Of these, 114 were diagnosed antemortem; the others were diagnosed at autopsy. It is usually caused by trauma to the esophageal lumen as in vomiting, retching, instrumentation, but non-traumatic causes cannot be ruled out in its etiology as in neoplasms or ingestion of caustic materials. The diagnosis is usually missed leading to a high mortality. This can be effectively reduced if diagnosed and intervened at the right time. Imaging studies are the best modality to identify any leaks in the esophageal lumen. The spectrum of esophageal emergencies includes esophagitis, foreign body impaction, and traumatic esophageal injury. Because there is considerable variability in the clinical manifestations of emergent esophageal conditions, computed tomography (CT) may play both primary and complementary roles in their diagnosis and evaluation: The management of the rupture depends on the accessibility to the site of perforation. Here we are discussing a rare case of spontaneous upper cervical esophagus tear causing a leak in the cricopharynx due to retching to expel a foreign body (chicken bone) impacted in the throat.

### CASE REPORT

A 50-year-old male presented to our ENT outpatient department (OPD) with complaints of throat pain and difficulty in swallowing for 3 days. He also gave a history of foreign body (chicken bone) impaction in the throat, which he expelled out by retching a day before presenting to our OPD. Patient had an associated change in voice ("hot potato voice") and was febrile. On examination of throat, there was a diffuse bulge of the posterior pharyngeal wall covered with slough. Indirect laryngoscopy showed overcrowding of the hypopharynx due to bulge in the posterior pharyngeal wall with no evidence of foreign body in the throat. On admission the patient developed subcutaneous emphysema of the neck and minimal difficulty in breathing. He was started on an antibiotic regimen of (injection cefperazone, injection gentamycin and injection metronidazole) along with symptomatic measures for his breathlessness. An X-ray neck lateral view was taken, which revealed an air column in the retropharyngeal area extending from C2 to C7 pushing the posterior pharyngeal wall anteriorly (Fig. 1).

Chest X-ray was taken, which revealed mediastinal widening. Subsequently a CT scan of neck and chest was taken, which revealed multiple air pockets in the left mediastinal cavity showing pneumomediastinum (Fig. 2).

An magnetic resonance imaging (MRI) was taken which revealed collection of air in the retropharyngeal and retrocardiac area until T10



Fig. 1: X-ray neck lateral view showing air column in pre-vertebral space pushing the posterior pharyngeal wall anteriorly

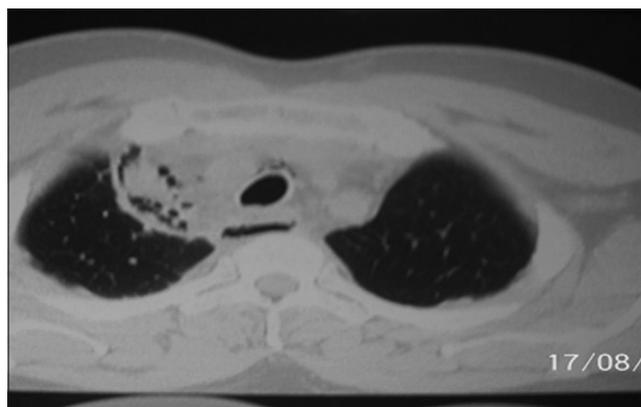


Fig. 2: Computed tomography chest showing multiple air pockets in left mediastinum indicating pneumomediastinum

level. No perforation was seen. The patient was shifted to higher antibiotics (injection teicoplanin and injection piperacillin + sulbactam) anticipating mediastinitis and its sequelae and was put on strict nil per oral status and the patient was instructed to avoid swallowing movements. Feeds were given through a Ryles tube. This was continued for 10 days until the patient's condition improved and subcutaneous emphysema came down. A repeat CT scan and MRI showed regression of the air pockets in the retropharyngeal area and mediastinal cavity. X-ray neck lateral view showed complete absorption of the air column in the retropharyngeal area and subsequently, the patient was shifted to oral antibiotics (levofloxacin and cefixime) and started on oral feeds. A diagnosis of foreign body impaction in alimentary tract causing a cricopharyngeal leak was made.

## DISCUSSION

Boerhaave's syndrome is the most sinister cause of esophageal perforation responsible with mortality rate ranging from 20 to 30%. Combination of mediastinal contamination with microorganisms, gastric acid and digestive enzymes, long free interval between injury and initiation of treatment causes severe mediastinitis, which is fatal in most untreated cases [1]. Anatomically esophageal wall lacks a serosal layer; this may result in lethal complication of esophageal perforation therefore patients should be investigated and treated urgently [5]. Late diagnosis or misdiagnosis occurs in more than 50% of patients due to the rarity of this affection and its non-specific presentation, which often simulates other disorders such as myocardial infarction, peptic ulcer perforation or acute pancreatitis. This is especially true of spontaneous perforation, in contrast to iatrogenic perforation, where the clinical suspicion is low, which often leads to the evaluation of more common medical conditions such as myocardial infarction, pneumonia, and peptic ulcer disease. Management is controversial since treatment can be surgical or non-surgical, and indications vary according to the functional state of the esophagus, the presence of associated lesions and the habits of the different teams. As delay in diagnosis of more than 24 hrs was frequently reported to have a profound effect on the mortality, management was historically accorded to the free interval between perforation and treatment. It has been suggested that primary repair is only appropriate in patients treated in a delay of <24 hrs after perforation, and that esophageal exclusion or non-operative treatment is indicated after [6]. The exceptions to performing a primary repair include a cervical perforation that cannot be accessed, but can be drained, diffuse mediastinal necrosis, a perforation too large for the esophagus to be re-approximated, an esophageal malignancy, pre-existing end-stage benign esophageal disease (e.g. achalasia), or the patient is clinically unstable [7-9]. Adequate intravenous fluids should be given with appropriate antibiotic coverage and symptomatic measures in case of any associated complaints. In our case the patient had a history of foreign body impaction which he reached out and spontaneously expelled. Violent retching or severe bouts of vomiting is an important predisposing factor for spontaneous rupture of esophagus. Furthermore, a breach in the alimentary tract was evident as pneumomediastinum had ensued. However, since it could not be detected on MRI or CT it has been speculated that the leak would be

most probably in a collapsible area like the cricopharynx where it leaks only while swallowing. We treated the patient conservatively because the patient presented 1 day after retching foreign body out but he still was stable without much respiratory difficulty. X-ray and CT showed pneumomediastinum and there was no signs of mediastinitis, which led us to think that the leak should be arising from an area which is collapsible, like cricopharynx where air can leak while swallowing movements are performed and closed at rest. Due to this suspicion the patient was put on strict nil per oral and was instructed not to swallow his saliva, but to spit it out. Survival depends on rapid diagnosis and surgery, i.e. within 24 hrs of rupture: 70-75% survival, within 25- 48 hrs: 35-50% survival and beyond 48 hrs: 10% survival.

## CONCLUSION

Foreign body impaction causing a cricopharyngeal leak in upper cervical esophagus leading to pneumomediastinum is a rare occurrence. The near doubling of overall mortality from 14 to 27% with a delay in diagnosis >24 hrs after perforation emphasizes the importance of a prompt diagnosis and treatment [10]. Therefore, an appropriate clinical evaluation via a thorough history, clinical examination and correlation is necessary to manage the syndrome accordingly so that mismanagements do not occur for a wrong diagnosis as esophageal ruptures can be easily and are usually overlooked.

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