Case Report

Pyopneumothorax of rare cause

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ABSTRACT

Rupture of pyriform sinus due to forced effort with closed glottis has been reported but is extremely rare. We report a case of rupture of pyriform sinus following multiple episodes of vomiting with subsequent development of pyopneumothorax.

KEY WORDS: Pyopneumothorax, pyriform sinus, spontaneous

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INTRODUCTION

Commonest cause of pharyngeal perforation is iatrogenic, which is usually secondary to instrumentation.[1] Other causes include penetrating or blunt trauma, swallowed foreign body and blast injury.[1] Rupture of pyriform sinus due to forced effort with closed glottis has also been reported but is extremely rare.[2] We report a rare case of rupture of pyriform sinus following multiple episodes of vomiting with subsequent development of pyopneumothorax. This is the first case of such an occurrence being reported from India.

CASE REPORT

A 42-years-old male presented with complaints of multiple episodes of vomiting followed by development of painful swelling of neck, pain and difficulty while swallowing and hoarseness of voice. He was initially evaluated at a peripheral centerwhere his investigations revealed a polymorphonuclear leucocytosis with shift to left, normal chest radiograph and computed tomography neck revealed free air in left parapharyngeal and retropharyngeal space with leak from left pyriform sinus. He was referred to tertiary care centerfor further management. Evaluation revealed a febrile patient (101°F) with tachycardia (110/min), tachypnea (30/min), crepitus over neck and anterior chest wall on left side and stony dull percussion note with absent breath sound over left side of chest. Chest radiograph revealed a left-sided hydropneumothorax [Figure 1]. Intercostals drainaige was established and 1.5 literof purulent fluid was drained. Post-procedure radiograph revealed expansion of left lung with evidence of consolidation in left mid and lower zones and a left-sided empyema. CT scan of neck [Figure 2] revealed a leak along lateral wall of left pyriform sinus with visualization of contrast along lateral wall of pharynx, cervical esophagus and retropharyngeal space. CT scan of thorax [Figure 3] revealed dense consolidation in posterior segment of left upper lobe and all segments of left lower lobe was noted with a minimal left-sided hydropneumothorax with intercostaldrainage tube *in situ*. ENT evaluation was done which revealed hyperemic left vocal cord with pooling of secretions in both pyriform fossa. He was started on broad spectrum injectable antibiotics in form of Piperacillin/Tazobactum and Metronidazole. Ryle's tube was inserted for feeding. Patient improved with conservative management and became afebrile. After 2 weeks intercostal drain was removed and oral antibiotics were started. Chest radiograph done at 4 weeks revealed left-sided pleural thickening [Figure 4]. Ryle's tube was removed and gradual

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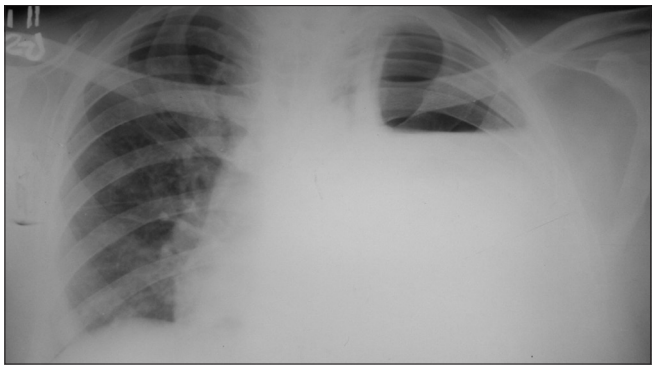

Figure 1: Chest radiograph showing left-sided hydropneumothorax

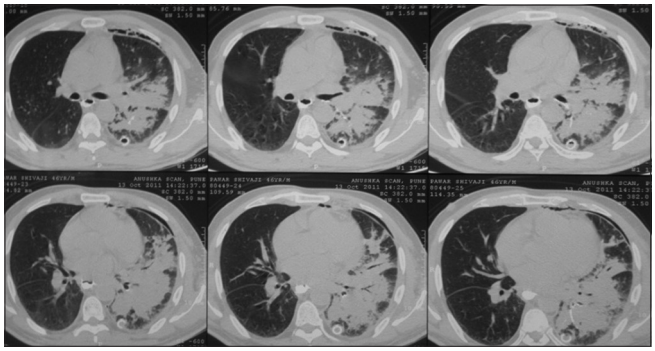

Figure 3: CECT thorax showing consolidation in posterior segment of left upper lobe and all segments of left lower lobe. Intercostal drainage tube can be seen *in situ*

oral feed were started which were tolerated by patient with no recurrence of symptoms. He has been asymptomatic on follow-up for 6months.

DISCUSSION

Spontaneous esophageal perforation is known as Boerhaave syndrome after Herman Boerhaave who first described it in 1724. Most common causes of rupture of esophagus and pharynx are iatrogenic.[3] Spontaneous rupture of pharynx has been reported but is rare.[2] Spontaneous perforations are commonly associated with retching or vomiting due to increased intraluminal pressures.[4] Pyriform sinus is at increased risk of rupture during retching or vomiting due to absence of reinforcing longitudinal muscle layer. In our case the patient developed a pyriform sinus leak most likely due to sudden rise in intraluminal pressure against closed vocal folds following vomiting.[4]

Patients may present with subcutaneous emphysema, odynophagia, dysphagia, hoarseness or hemoptysis.[1] Subcutaneous emphysema, odynophagia, dysphagia and hoarseness were seen in our patient.

Intrathoracic complications are more common in patients with thoracic esophageal perforation, seen in approximately 50% of these patients.[5] In pharyngeal or

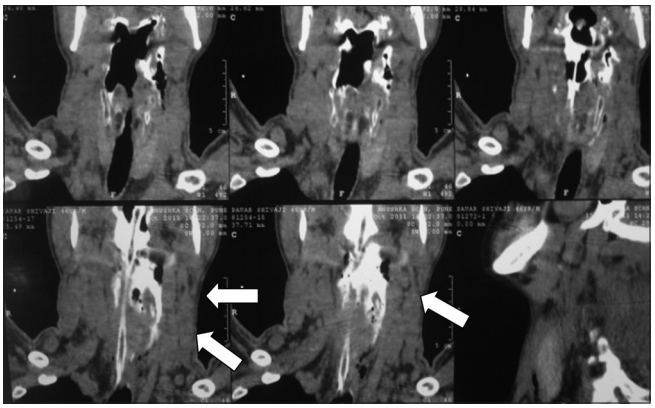

Figure 2: CT Scan of neck showing leak along lateral wall of left pyriform sinus with visualization of contrast along lateral wall of pharynx, cervical esophagus and retropharyngeal space (marked by arrows)

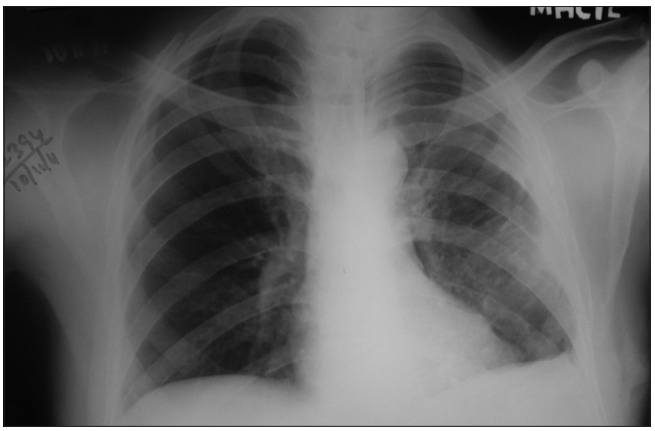

Figure 4: Chest radiograph showing near complete resolution of parenchymal opacities with left-sided pleural thickening

cervical esophageal rupture respiratory complications are seen in approximately 10% patients.[5] Our case also had a rare complication of pharyngeal rupture in form of pyopneumothorax.

Contrast studies may be helpful in demonstrating the site and extent of rupture. Diagnostic sensitivity of contrast studies is more (90%) in esophageal perforation than in pharyngeal perforation (60-75%) with specificity of 100%.[6,7] In our patient the leak in left pyriform fossa was confirmed by contrast studies.

Due to rarity of the condition, optimal management strategy remains controversial.[1] Conventionally surgical approach has been preferred for larger lesions while conservative management may be helpful in patients with small well-contained leak without any complications.[8] In our patient although there were respiratory complications the patient had a progressive improvement with conservative management in form of broad-spectrum antibiotics, intercostaldrainage and ryle's tube feeds and had near complete recovery without any surgical intervention.

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Conflicts of interest
There are no conflicts of interest.

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