Case Report

An unusual case of spontaneous esophagopleural fistula

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ABSTRACT

Esophagopleural fistula (EPF) is an uncommon condition, despite of an anatomical proximity of these structures. Causes of EPF include pneumonectomy for suppurative or tubercular disease of lung and carcinoma lung, malignancy of esophagus. Benign EPF is rare and may be due to trauma or infection. The most common infectious cause is tuberculosis. Spontaneous development of fistula between esophagus and pleura is rarely described in literature. We, hereby present a spontaneous case of such a rare entity in a middle-aged male.

KEY WORDS: Esophagopleural fistula, pneumonectomy, tuberculosis

INTRODUCTION

Esophageal fistula (EPF) is an uncommon condition despite the anatomical proximity of the trachea and esophagus. Causes of EPF include pneumonectomy for suppurative or tubercular disease of the lung and malignancy of the esophagus. Non-malignant EPF is due to trauma or infection. The most common infectious cause of EPF is tuberculosis, the others being syphilis, mycotic disease, and Crohn’s disease. Perforation of the esophagus and subsequent fistula formation can occur as a result of foreign bodies, Barrett’s ulcer, and more rarely Boerhaave’s syndrome. Spontaneous development of a fistula between the esophagus and pleura is rarely described in the literature.

CASE REPORT

A 34-year-old male was admitted with a 1-month history of cough, breathlessness, regurgitation during feeding, and chest discomfort. He was a known case of bipolar mood disorder and was on antipsychotics for the last 7 years. He had no smoking history. He had no history of any surgery in the past. There was no history of prior trauma or instrumentation. General survey was unremarkable. On chest examination, an enlarged right hemithorax with decreased movement of the right chest and stony dull note over the right hemithorax from the fourth, eighth, and ninth intercostal spaces downward along the midclavicular, midaxillary, and scapular lines, respectively were found. There was diminished breath sound on the right infraspinous and infrascapular areas. The result of laboratory studies was normal. Sputum for acid-fast bacilli (AFB) was negative. Chest x-ray revealed right pleural effusion. On thoracocentesis, there was a dry tap. On ultrasonography of the thorax, there was minimal right pleural collection with internal echoes (not amenable for aspiration). On high-resolution computed tomography (HRCT) of the thorax, an encysted collection (7.9 cm × 8.5 cm × 10 cm) was noted in the right pleural space showing air and food particles in it with a linear fistulous communication from the distal esophagus, and on oral contrast administration, the contrast medium was seen to enter into the collection [Figures 1 and 2].

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into the pleural cavity [Figure 3]. Finally, the upper gastrointestinal (GI) endoscopy confirmed a large fistulous tract measuring 9 mm at the distal esophagus without any mucosal abnormality. With the definite diagnosis of EPF, the patient was transferred to the department of cardiothoracic and vascular surgery (CTVS) where thoracotomy and closure of the fistula were performed. During the procedure, an incidental bronchopleural fistula was found and closed. The postoperative period was uneventful.

DISCUSSION

EPF is an uncommon complication of iatrogenic trauma (endoscopic instrumentation) or postpneumonectomy. A number of possible causes for the development of EPF following pneumonectomy for suppurative disease of the lung have been suggested. Anatomically, the esophagus lies much closer to the right hemithorax than to the left, the left being separated from the pleural cavity by the aorta. The site of perforation depends on the cause. The possibility of direct EPF and extent of mediastinitis are determined by the anatomic relationship of the esophagus and the pleura, the amount of mediastinal fat, and intervening connective tissue.

Fistula related to empyema was the most commonly reported case in the preantibiotic era. Nonetheless, there continues to be isolated reports of posttuberculous pyopneumothorax fistulas. Erosion of an empyema into the esophagus and rupture of caseating lymph nodes into the esophagus are the possible mechanisms.

In our case, the cause of EPF was unclear. Evidence of malignancy was undetectable from radiology and no specific infectious agent was isolated at the time of diagnosis and treatment.

The diagnosis of EPF is difficult because the clinical signs and symptoms are nonspecific. Esophageal injury should be considered when a patient presents with retrosternal chest pain, fever, dysphagia, and dyspnea, especially when the patient gives antecedent history of instrumentation or surgery. The diagnosis of EPF can be suspected clinically; however, for confirmation, imaging is required. The imaging modalities include chest radiograph, ultrasound, barium swallow, contrast-enhanced computed tomography (CT), and magnetic resonance imaging (MRI) with each modality having its advantages, and chest CT is a very useful modality.

EPF rarely heals spontaneously. Leaks of the esophagus are associated with high mortality and the need to be treated as soon as possible. Therapeutic options include surgical repair or resection or conservative management with antibiotic therapy and cessation of oral intake. Endoscopic treatment with fibrin glue, clip, suturing, and metallic stents has been described.
Our patient presented with nonspecific symptoms detected on HRCT of the chest. It was successfully treated with surgery.

CONCLUSION

To conclude, spontaneous development of EPF is an unusual condition entity with nonspecific clinical presentation. CT of chest is a very useful modality for early diagnosis and management of EPF. It should be performed in patients with pleural effusion presenting with nonspecific clinical symptoms before any intervention or drainage.

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