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Case Report

Paratracheal air cysts; a rare cause of recurrent hemoptysis

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ABSTRACT

Paratracheal air cysts (PTACs) refer to small collections of air, present at the level of the thoracic inlet, adjacent to the trachea. PTACs encompass a variety of pathological entities and are usually encountered incidentally on computed tomography (CT) of the chest. Clinically, most patients remain asymptomatic; while a minority, may be associated with cough, dyspnea and hemoptysis probably as a result of pooled secretions and secondary infections. We report one such case of recurrent hemoptysis in a 30-year-old male, as a result of a right paratracheal air cyst.

Keywords: Paratracheal air cyst, Hemoptysis, Tracheal diverticula

INTRODUCTION

Paratracheal air cysts (PTACs) refer to small collections of air, present at the level of the thoracic inlet, adjacent to the trachea.[1] PTACs encompass various pathological entities, including tracheocele, tracheal diverticula, lymphoepithelial cysts, and bronchogenic cysts and are usually diagnosed incidentally following a thorax CT scan.[2] The reported prevalence of PTACs ranges from 0.75-8.1%.[2-4] Pathological mechanisms underlying their formation is unclear. They maybe congenital or acquired and differential diagnoses include laryngocele, pharyngocele, Zenker's diverticulum, apical hernia of the lung, and apical paraseptal blebs or bullae.[2]

They're commonly located on the right side, with the thoracic inlet, the space between the cartilage and muscle layers in the right posterolateral wall of the trachea being the most common location.[5] These lesions communicate with the trachea in less than 10% of cases.[6] While largely asymptomatic, a small minority, may present with cough, dyspnea and hemoptysis probably because of pooled secretions and secondary infections.[6] We report one such case of recurrent hemoptysis in a 30 year old male, as a result of a right paratracheal air cyst.

CASE REPORT

A 30-year-old man with no known comorbidities presented with a 2-year history of multiple episodes of productive cough associated with occasional streaky hemoptysis. Cough was associated with scanty mucoid expectoration, which was non foul smelling. He gave a history of 2-3 episodes of hemoptysis per month, approximately 2-3 ml per episode. He denied history of shortness of breath on exertion; history of loss of weight, appetite, chest pain, fever or night sweats. There was no history of prior treatment or contact with Tuberculosis. He worked as a manual laborer and smoked 20 cigarettes per day with a smoking index of 100. On examination, he was afebrile and hemodynamically stable. Systemic examination was unremarkable. Chest Xray taken was found to be normal and showed no radiographic evidence of parenchymal abnormalities (Figure 1). Blood investigations revealed an elevated ESR of 43mm/hr. Sputum specimens sent for culture and sensitivity, were negative. A high-resolution CT (HRCT) thorax showed a paratracheal air cyst in the right lower cervical region, posteriorly, measuring 23×11 mm with no other significant finding (Figure 2). A fiberoptic bronchoscopy performed showed a normal tracheobronchial tree with no obvious communicating tract between the paratracheal air cyst and trachea (Figure 3). A Pulmonary function test done was

found to be normal with no evidence of obstruction. Patient was managed symptomatically and was counseled regarding the potential need for surgical intervention for definitive treatment in case of persistence of symptoms. Patient is currently stable and is on regular follow-up.

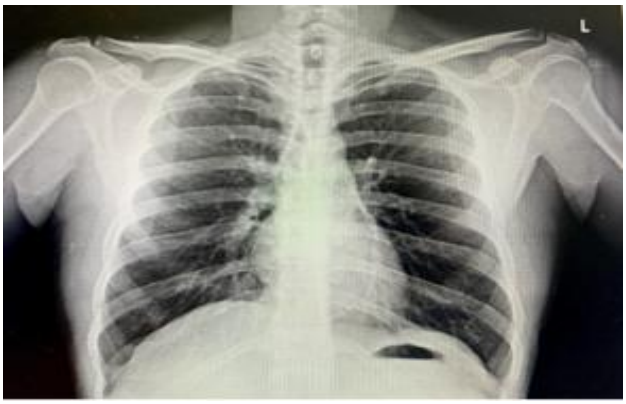

Figure 1: Normal chest X-ray.

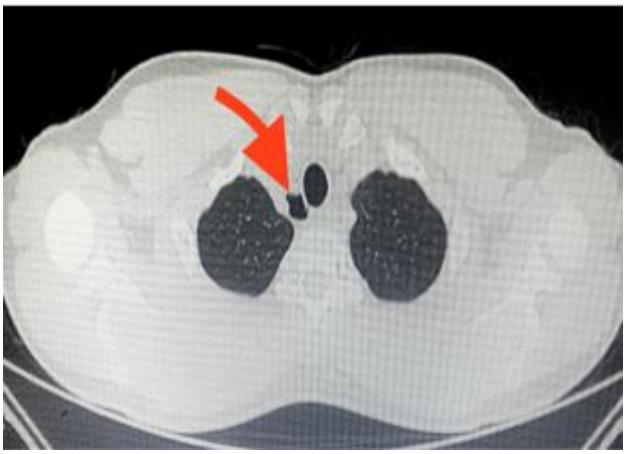

Figure 2: Right paratracheal air cyst visualized on HRCT thorax.

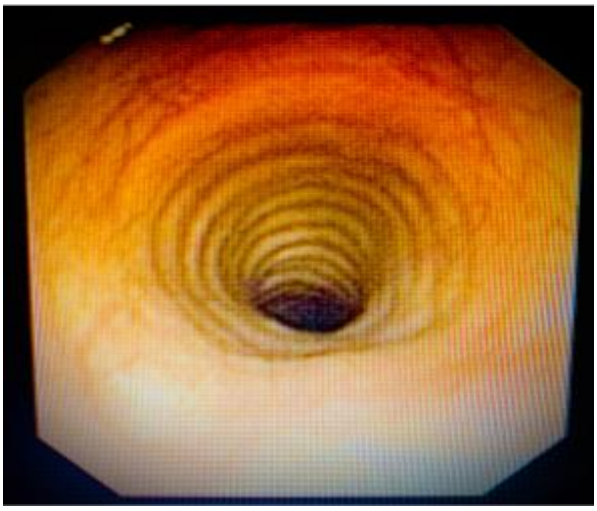

Figure 3: Endobronchial visualization showing no obvious communication between cyst and trachea.

DISCUSSION

PTACs are usually discovered incidentally on thorax CTs and may be congenital or acquired.[2] Acquired tracheal diverticulum can arise at any level, and they are typically wide-mouthed and larger than congenital diverticulum.[7] Prevalence of these lesions is reported to be 0.75-8.1% with a tracheal communication being demonstrated in less than 10% cases.[2-4,6]

The right paratracheal region, in the posterolateral aspect remains the most common site.[5] This may be partially attributed to the fact that esophagus generally lies towards the left of the trachea, leaving the right unsupported.[7]

Differentials include laryngocele, pharyngocele, Zenker's diverticulum, apical hernia of the lung, and apical paraseptal blebs or bullae.[2]

Laryngoceles can be diagnosed on CT as diverticulum of the saccule of the laryngeal ventricle. Apical hernia has continuity with the body of the lung, with lung markings within the herniated region on CT scans. Pharyngocele and Zenker's diverticulum may be identified with a barium examination. Apical paraseptal blebs or bullae, may be visualized on CT scans.[2,7]

PTACs are usually asymptomatic and seldom life threatening, while a small minority, may present with cough, dyspnea and hemoptysis as a result of pooled secretions and secondary infections. Rarely, symptoms may arise as a result of direct compression of the adjacent tissue or organs.[7,8]

For most patients, management is usually conservative and symptomatic with bronchodilators, antibiotics and mucolytics as required. Surgical interventions may be recommended in young oung patients with significant symptoms of dyspnea, dysphagia, chronic cough, hoarseness, and recurrent infections.[6-8]

CONCLUSION

Thus, a high index of suspicion for PTACs should be maintained in patients with recurrent or persistent respiratory symptoms, in the presence of normal plain film radiography and preliminary baseline investigations.

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