

TUBERCULOSIS OF THE AZYGIOUS LOBE OF LUNG: CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

The Azygous lobe is usually an incidental finding in chest x ray PA view. Although pulmonary tuberculosis is common in India, involvement of the azygous lobe by this disease has never been reported in literature to the best of our knowledge. We describe the case of a patient with tuberculosis of the azygous lobe of the lung. The patient presented with a normal chest x-ray PA view. Further investigations revealed pulmonary tuberculosis of the azygous lobe and the patient improved with anti-tuberculosis therapy.

Key words: Azygous lobe, Lung, pulmonary tuberculosis

Introduction

The azygous lobe is a normal anatomical variant and is an interesting and rare entity. It is also known as "lobe of Wrisberg" after its discoverer. Being a radiological curiosity, it may also be a site of disease. Knowledge of the prevalence, morphology and location of the azygous lobe is essential for clinicians. We describe the case of a patient who presented with haemoptysis and had a normal chest x-ray PA view except for the presence of an azygous lobe, which is a rare but normal anatomic variant of right upper lobe seen in only 0.4% of population radiologically. Higher investigations like High Resolution Computed Tomography (HRCT) Thorax and Fibreoptic Bronchoscopy (FOB) revealed tuberculosis of the azygous lobe of the lung. Though the incidental finding of an azygous lobe is usually clinically unimportant and does not require additional evaluation, some pulmonary diseases may develop within this lobe and require detailed evaluation with CT imaging studies. Our case report also highlights the utility of investigations like HRCT thorax and Fibreoptic bronchoscopy for the clinician.

Case Report

A 71 year old man presented to the Department of Pulmonary Medicine, Era's Lucknow Medical College with history of fever for 3 months, cough for 3 months, loss of appetite and weight for 2 months and haemoptysis since 3 days. The patient had

moderate to severe fever, with spikes of 100-101 degree Fahrenheit in the evening. He also had cough since 3 months, not associated with expectoration and there was no postural or diurnal variation. He had loss of appetite since 2 months and reported a loss of weight of 10-12 kg over 2 months. He was taking medication from a local practitioner for these symptoms. He had 4-5 episodes of haemoptysis of 2-3 spoonful of blood for 3 days, so he attended the OPD of our college. He was an ex-smoker with a pack year of 15 and rest of history was insignificant. He had no past history of Anti Tuberculosis Therapy intake or any significant treatment history. Clinical examination revealed a normal general physical examination. Respiratory system examination revealed crepts in the right infraclavicular and infrascapular region, rest of examination was normal. Routine blood investigations were normal. The patient was non diabetic and ELISA for HIV was non-reactive. Chest X Ray PA view showed an azygous lobe in the right upper zone and was otherwise normal (figure 1). Since the patient was not expectorating any sputum and chest x-ray PA was normal, a HRCT Thorax was done. HRCT thorax revealed an azygous lobe with nodular opacities and ground glass appearance with thickening of the fissure (figure 2). Fibreoptic bronchoscopy was done and bronchoalveolar lavage was taken from the apical segment of Right Upper Lobe, which revealed Acid Fast Bacilli on Ziehl Nelson smear. The patient was started on 4

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drugs ATT and haemostatics were continued. The patient's haemoptysis and fever resolved over few days and appetite improved and he was subsequently discharged.

Figure 1: A chest x-ray PA view of the patient showing azygous lobe, otherwise normal.

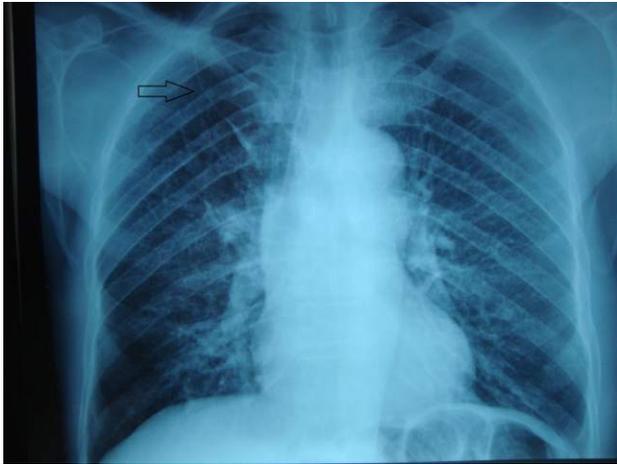


Figure 2: HRCT thorax, showing azygous lobe with a thickened azygous fissure, ground glass opacification of the lobe along with nodules.



Discussion

The azygous lobe is found in 1% of anatomic specimens, 0.4% of chest x-ray PA view and 1.2% of HRCT thorax.¹ The azygous lobe is an anatomical anomaly but not a true accessory lobe. In patients with azygous lobe, an azygous fissure is visible as a fine convex line on chest x-ray PA view. The azygous lobe is created when the Azygous vein creates a deep pleural fissure into the apical segment of the right upper lobe during embryological development. The right posterior cardinal vein, one of the precursors of the azygous

vein, fails to migrate over the apex of the lung and penetrates it instead, carrying along two pleural layers that invaginate into the upper portion of the right upper lobe, creating the azygous fissure and azygous lobe.² The azygous vein, also referred to as the mesoazygous, lies between folds of parietal pleura, where it assumes a characteristic teardrop shape.³ Other accessory fissures are inferior accessory, superior accessory, and left minor fissures.⁴ Since there is no corresponding alteration in segmental architecture of the lung, the term "lobe" is a misnomer.

The azygous lobe was first described by Wrisberg in 1778 and Bendick and Wessler, in 1928, proved its existence in autopsies of two patients.⁵

It has been postulated that the presence of an azygous lobe protects against development of spontaneous pneumothorax.⁶ Azygous lobe may occasionally be confused with a pathological process such as a bulla, lung abscess or neoplasm.⁷

The presence of an azygous lobe may also be associated with other anomalies such as oesophageal atresia, intrapulmonary right brachiocephalic vein and extrapulmonary sequestration in the upper posterior mediastinum.⁸ However; the clinical implications of the azygous lobe in relation to oesophageal atresia have not been mentioned in standard textbooks of clinical anatomy and paediatric surgery or in previous case reports, to the best of our knowledge.⁹

Presence of anatomic anomalies like azygous lobe may confound and complicate surgeries like thoracotomy. Thus, knowledge and familiarity with the azygous lobe is important for surgeons during thoracic procedures. The congenital azygous lobe with its suspensory azygous web can completely obscure the view of the superior sulcus during sympathectomy procedure done for refractory palmar hyperhidrosis.¹⁰ The presence of azygous lobe in the lung predisposes to spontaneous pulmonary torsion.¹¹ In surgery for oesophageal atresia, presence of azygous lobe leads to an unexpected finding and inability to reflect the pleura, until the azygous vein has been identified, ligated and divided.⁹

In our case, the patient presented with an azygous

lobe on chest x-ray PA view, which was otherwise normal. HRCT thorax and FOB revealed tuberculosis restricted to the azygous lobe; pleural folds of the mesoazygous acted as a barrier to the dissemination of infection to the other lobes. 12

For a surgeon, we believe preoperative chest x-ray PA view should be done in all patients undergoing thoracic surgical procedures, to rule out the presence of azygous lobe. Among clinicians and radiologists, awareness of the entity and recognition of the radiographic features will enable an accurate diagnosis.

Conclusion:

An azygous lobe is usually an incidental finding and does not require additional evaluation. In fact, it may be confused with a pathological air space lesions such as a bulla or abscess. The abnormally located azygous vein may be mistaken for a pulmonary nodule, while a consolidated azygous lobe may be confused with a mass. In our case, patient had tuberculosis of the azygous lobe which presented with anormal chest radiograph with azygous lobe and further workup by HRCT thorax and FOB led to the diagnosis of tuberculosis of azygous lobe. This article highlights the increased sensitivity and excellence of higher imaging modalities over conventional imaging techniques.

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