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Case Report

Tears on Chest X-Ray in Children: Azygos Lobe

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Abstract

The Azygos lobe is not an actual lobe of the lungs but is usually a rare congenital variant of the right lung. It is more common in men and has a genetic predisposition. The Azygos lobe is asymptomatic, and it is often located on the right lung. Its incidence was found to be 1% in chest radiographs and 1.2% in computerized tomography. There is a convex line due to the azygos fissure, a trigonal area (trigone) due to the extra pleural tissue on the fissure, and a teardrop appearance connected to the azygos vein in the lower part seen on the chest X-ray. It is important for the differential diagnosis of lung lesions. It is crucial to recognize this variant since it may mimic specific pathological cases such as bullae, abscesses, or lung masses. It does not require a specific treatment. Although rarely, the azygos lobe may be accompanied by pathologies such as malignancies, hemothorax, pneumothorax, vascular anomalies, and situs inversus totalis. In this article, a 15-year-old male patient who applied to the pediatric health and diseases polyclinic for the necessary examinations to participate in a football academy camp, who had no active complaints and whose azygos lobe was detected on his chest x-ray, was presented.

Keywords: Lung; azygos lobe; child; congenital malformation

Introduction

The Azygos lobe is not an actual lobe of the lungs but is usually a rare congenital variant of the right lung. It is important to recognize this variant since it may mimic specific pathological cases such as bullae, abscesses, or lung masses. It is of crucial importance in the preparation of surgical operations [1]. This anatomic variant of the right top lobe was first identified by the German anatomist Heinrich Wrisberg (1739-1808) [2]. It is caused when the posterior cardinal vein, which is the precursor of the top thoracic segment of the Azygos vein, accidentally migrates during embryological development. Normally, the posterior cardinal vein migrates to its last position in the mediastinum through the apex of the right lung [3].

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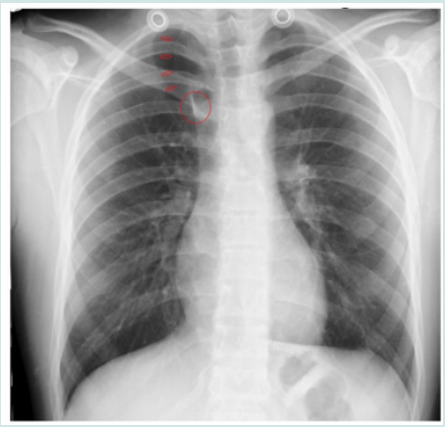

Figure 1: PA Chest Radiography.

A fifteen-year-old male patient applied to the child health and diseases polyclinic to have the necessary examinations to participate in a football academy camp. He had no known disease in his medical history. On physical examination, the patient's general condition was good; he was conscious, oriented, and cooperative. His temperature was 36.6°C, pulse 80/min, arterial blood pressure 100/65, respiratory rate 18/min, saturation on room air was 100%, body weight was 54 kg (25-50 p), and height was 172 cm (50-75 p). Other system examinations were normal. The patient's hemogram and biochemistry parameters were within normal limits. In the PA chest radiography, a tear-shaped increase in opacity (azigos vein) was observed in the right upper lobe (Figure 1). The patient, who had no information about his existing anatomical variation because he had not previously had a PA chest radiography, was discharged after being informed.

Discussion

The azygos lobe is a rare anatomical variation located in the upper mediastinum. It is more common in men and has a genetic predisposition [4]. It is often located on the right, the same as in our case [5]. Its incidence was found to be 1% in chest radiographs and 1.2% in computerized tomography [6]. The diagnosis is mostly made by chest X-ray. Similar to our case, there is a convex line due to the azygos fissure, a trigonal area (trigone) due to the extra pleural tissue on the fissure, and a teardrop appearance connected to the azygos vein in the lower part seen on the chest X-ray [7]. The appearance of the azygos lobe is classified into three types, depending on the relation of the azygos fissure with the apex of the lung. If the trigon is located lateral to the apex of the lung, it is called Type A; if it is located towards the middle and the fissure is more vertical, it is called Type B; if it is medially and the fissure extends from the mediastinum, it is called Type C [8]. Our case was Type B. Although rarely, the azygos lobe may be accompanied by pathologies such as malignancies, hemothorax, pneumothorax, vascular anomalies, and situs inversus totalis [9]. As in our case, it is important to recognize the azygos lobe radiologically, which is usually detected during imaging performed for another reason, in order to prevent possible technical problems, especially during lung surgery [10]. In conclusion, this case shows us the appearance of the azygos lobe on the chest radiography and that it should not be forgotten among the differential diagnoses in terms of existing pathologies, and that no treatment is needed if there is no accompanying pathology.

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