

Case Report

Azygos lobe: A rare cause of right paratracheal opacity in children

Azygos lob: Çocuklarda sağ paratrakeal opaklığın nadir bir nedeni

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ABSTRACT

The azygos lobe is a rare anatomical variation located in the upper mediastinum. It is more common in males and has a genetic predisposition. It is often located on the right lung. Azygos lobe is usually asymptomatic and does not require specific treatment. The azygos lobe should be kept in mind when examining the posteroanterior chest X-ray, one of the well-implemented medical inspections in pediatric clinics. In this case study, we report a 6-year-old male patient who was admitted to the emergency service because of a three-day-lasting cough, a fever that can reach 39,2°C, and difficulty in inspiration that started an hour ago and computed tomography revealed azygos lobe.

Keywords: *Azygos vein, congenital abnormalities, child*

ÖZET

Azygos lobu, üst mediastende yer alan nadir bir anatomik varyasyondur. Erkeklerde daha sık görülür ve genetik yatkınlığı vardır. Genellikle sağ akciğer yerleşimlidir. Azygos lobu genellikle asemptomatiktir ve özel bir tedavi gerektirmez. Pediatri kliniklerinde sık başvurduğumuz tetkiklerden biri olan postero-anterior akciğer X-ray görüntülemesini incelerken azygos lobu akıldan tutulmalıdır. Bu yazıda acil servise 39,2°C'ye varan ateş, üç gündür devam eden öksürük ve bir saat önce başlayan solunum sıkıntısıyla başvuran ve bilgisayarlı tomografide azygos lobu saptanan altı yaşında erkek hasta sunuldu.

Keywords: *Azygos veni, doğumsal anomaliler, çocuk*

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 crucial to recognize this variant since it may mimic specific pathological cases, such as bullae, abscesses, or lung masses. It is of considerable 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). Written informed consent was obtained from the patient and his mother, who participated in this case study.

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CASE REPORT

A six-year-old male patient was admitted to the emergency service because of a three-day-lasting cough, a fever that might reach 39.2°C, and difficulty in inspiration that started an hour ago. In the patient's anamnesis, it was learned that he had close contact with a COVID-19 positive case at home seven days ago. He had no known disease, no history of hospitalization, or previous pulmonary infection on his medical record. On physical examination, the general condition of the patient was good; he was conscious, cooperative, oriented to time, place, and person. His temperature was 38.9°C, pulse 120/min, blood pressure arterial 95/65 mmHg, respiratory rate 32/min, saturation in room air 96%, body weight 20 kg (25-50 p), and height 114 cm (25-50 p). There was bilateral rale and rhonchus in the sound of the lung, and there were subcostal retractions. His tonsils were hyperemic. Other system examinations were normal. The patient's hemogram parameters were normal except for white blood cell (WBC) 17.7 K/uL (78% neutrophil, 18% lymphocyte), biochemistry parameters except for c-reactive protein (CRP) 35 mg/L (reference range 0-5), blood gas and coagulation values were within normal limits, his COVID-19 PCR test result was positive. Bilateral multifocal ground-glass densities and an increase in the opacity shaped like a tear (azygos vein) in the right upper lobe were observed in the Posteroanterior chest X-ray (Figure 1). In the computerized tomography of the thorax taken, the azygos lobe, azygos fissure, and peribronchial located infiltration areas in ground glass density scattered around both lungs were interpreted as CO-RADS-4 (Figure 2). Due to the respiratory distress of the patient, he was admitted to the COVID-19 service, and his treatment was started.

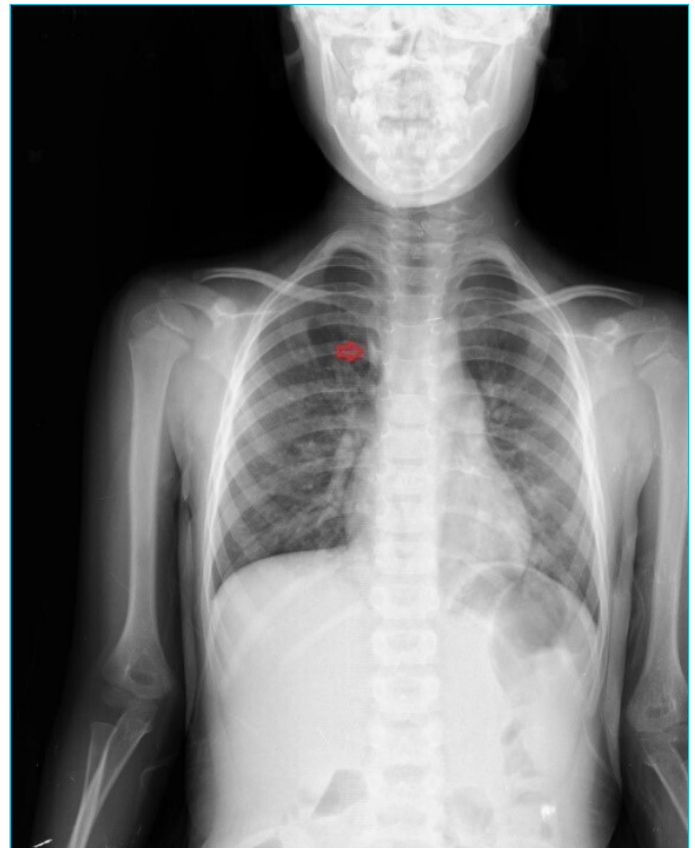


Figure 1. Vertical line (fissure) and tear-shaped increase in opacity (azygos vein) in the right upper lobe (red arrow: azygos vein)

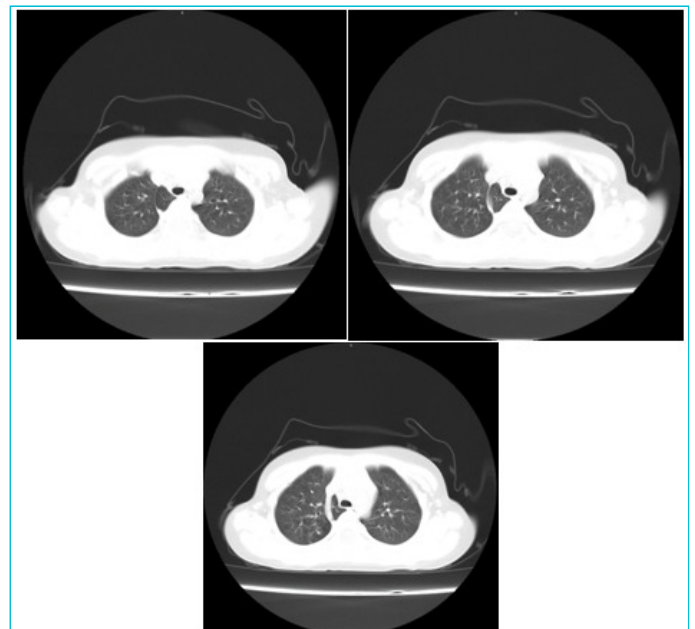


Figure 2. Azygos fissure and azygos lobe

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 1% in chest radiographs and 1.2% in computerized tomography (4,6). The diagnosis is mostly made by chest X-ray (5). Similar to our case, there is a convex line due to the azygos fissure, a trigonal area (trigone) due to the extrapleural 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 (9-10). The azygos lobe should be kept in mind when examining the posteroanterior chest X-ray, one of the well-implemented medical inspections in pediatric clinics.

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.

Patient Consent Form / Hasta Onam Formu

The parents' of this patient consent was obtained for this study.

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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