

A Rare Cause of Intrathoracic Upper Airway Obstruction

Intratorasik Üst Hava Yolu Obstrüksiyonunun Nadir Bir Nedeni

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ABSTRACT

Right sided arcus aorta anomaly is usually asymptomatic. Rarely, this anomaly is symptomatic due to external compression of the trachea and esophagus. A 17 year-old man presented with exertional dyspnea. Pulmonary function tests indicated intrathoracic upper airway obstruction. Thoracic MR imaging revealed external compression of the trachea from right sided arcus aorta. (*Tur Toraks Der 2009;10:37-8*)

Key words: Right sided arcus aorta, airway obstruction, tracheal compression

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ÖZET

Sağ yerleşimli arkus aorta anomalileri genellikle semptom vermezler. Ancak trakea ve ösefagusa dışardan bası yapmaları halinde nadiren de olsa semptomatik olabilirler. Onyediy yaşında erkek hastanın egzersiz dispnesi nedeniyle yapılan solunum fonksiyon testlerinde intratorasik üst hava yolu obstrüksiyonu izlendi. Toraks MR görüntülemesinde sağ yerleşimli arkus aortanın trakeaya dıştan bası yaptığı görüldü. (*Tur Toraks Der 2009;10:37-8*)

Anahtar sözcükler: Sağ yerleşimli arkus aorta, hava yolu obstrüksiyonu, trakea basısı

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INTRODUCTION

Right sided arcus aorta anomaly incidence is about 0.1% and 0.2% in adults [1]. This anomaly is usually asymptomatic. Rarely, right sided arcus aorta is symptomatic due to external compression of the trachea and esophagus. We presented that a case with exertional dyspnea due to external compression on the trachea due to a right sided arcus aorta anomaly.

CASE

A 17 year old man was admitted to hospital with exertional dyspnea. Physical examination was normal, while chest radiography showed an expansion of the right upper mediastinal structures (Figure 1). In the pulmonary function tests: FVC 93%, FEV1 90%, FEV1/FVC 95.2 and intrathoracic upper airway obstruction was suspected due to flattening of the expiratory limb of flow-volume loops (Figure 2). A thoracic MR was obtained. Thoracic MR imaging revealed external compression of the trachea from a right sided arcus aorta (Figure 3). The coronal section of the thoracic MR imaging showed clear narrowing of the air column of trachea (Figure 4).

DISCUSSION

Although right sided arcus aorta anomaly is the most common anomaly of arcus aorta, incidence of this anomaly is estimated 0.1% and 0.2% in adults [1,2]. In Turkey, this ratio is reported to be 0.06% [5]. This occurs in both sexes. Our patient was a man diagnosed at age 17 years.

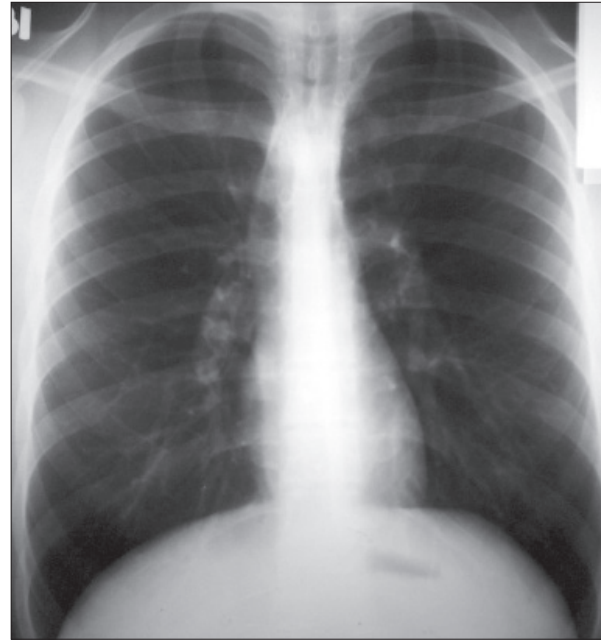


Figure 1. Chest radiography showing that extended right upper mediastinal structures

Right sided arcus aorta anomaly is usually asymptomatic [1]. Rarely, it may be symptomatic due to external compression of the trachea and esophagus [4]. The most common complaints of these patients are dysphagia and stridor, but persistent cough and asthma-like symptoms

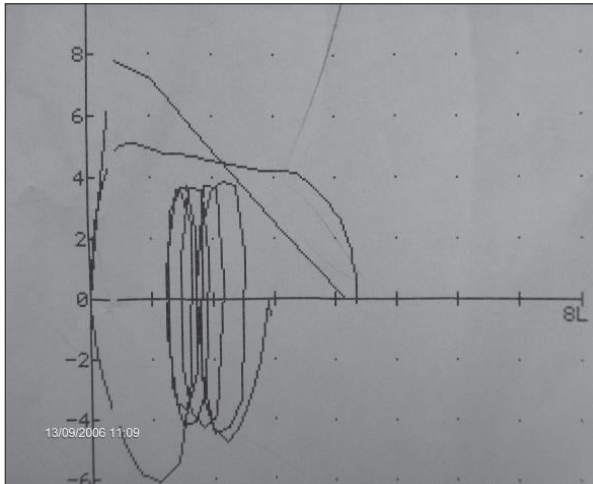


Figure 2. Pulmonary function tests showing that the flattened on expiratory limb of flow-volume loops

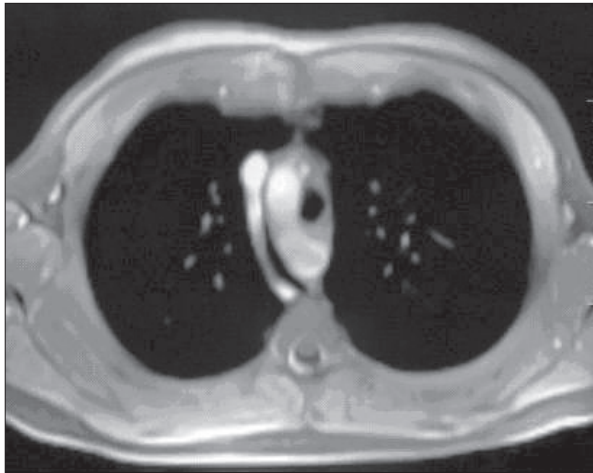


Figure 3. Thoracic MR imaging showing that external compression to trachea from right sided arcus aorta

can occur due to compression of the trachea [1,3]. In the past, an article which included eight patients with right sided arcus aorta was reported [4]. For of these patients were symptomatic. Two of them suffered from exertional dyspnea, the other two suffered from cough and dyspnea. Our patient presented with exertional dyspnea.

Pulmonary function tests are useful for considering tracheal compression in a patient with right sided arcus aorta anomaly who especially suffered from cough and dyspnea [5]. Our patient's pulmonary function tests

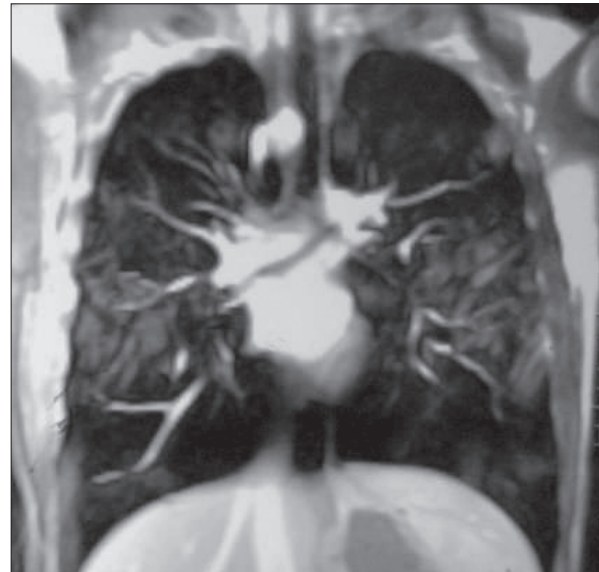


Figure 4. Coronal section of thoracic MR imaging showing that clear narrowing at air column of trachea

demonstrated that the expiratory limb of flow-volume loops is flattened, while the inspiratory portion is unchanged. So we suspected an intrathoracic upper airway obstruction.

Right sided arcus aorta anomaly is usually diagnosed by chest radiography. Thoracic CT and thoracic MR imaging confirm the diagnosis.

In conclusion, right sided arcus aorta anomaly must be kept in mind in patients who suffer from dyspnea, chronic cough and dysphagia.

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