A Case of Tracheal Bronchus

Bir Trakeal Bronş Olgusu

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ABSTRACT A 58 years old man admitted with cough and sputum. Computed tomography (CT) of the thorax CT revealed a solitary nodule with regular margin in apical segment of upper lobe. We decided to apply thoracotomy, because of the central location of the lesion. An accessory bronchus was detected at the level of supracarina between the right upper lobe apical segment and the trachea intraoperatively. Accessory bronchus was dissected by a TA 30 mm bronchial stapler from the lateral wall of the trachea. Apical segmentectomy was applied. Tracheal bronchus is a rare congenital bronchial anomaly. The anomaly is generally asymptomatic in adults and detected incidentally by computed tomography or bronchoscopy during tracheal entubation. We presented a case of accessory tracheal bronchus which cuold not diagnosed by thorax CT and during tracheal entubation and admitted with solitary pulmonary nodule.

Key Words: Congenital abnormalities; airway obstruction

ÖZET Elli sekiz yaşında erkek hasta öksürük ve balgam çıkarma şikayeti ile müracaat etti. Çekilen toraks bilgisayarlı tomografi (BT)'de üst lob apikal segmentte düzgün sınırlı bir pulmoner nodül saptandı. Lezyonun santral lokalizasyonundan dolayı torakotomi kararı alındı. Ameliyat sırasında üst lob apikal segment ve trakea arasında, suprakarinal seviyede aksesuar bir bronkus görüldü. Aksesuar bronkus, TA 30 mm bronşiyal stapler ile trakea duvarından diseke edildi ve üst lob apikal segmentektomi uygulandı. Trakeal bronş, nadir görülen doğumsal bir bronşiyal anomalidir. Erişkinlerde genellikle asemptomatik olup toraks BT ile tesadüfen veya trakeal entübasyon sırasında bronkoskopi ile saptanırlar. Hem toraks BT ile hem de trakeal entübasyon esnasında saptanamayan ve soliter pulmoner nodül ön tanısı ile opere edilen bir aksesuar trakeal bronş olgusu sunduk.

Anahtar Kelimeler: Doğumsal anomaliler; hava yolu tıkanıklığı

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Tracheal bronchus (TB) describes an anomalous bronchus which originated from lateral wall of trachea directly above carina and supply ventilation of the upper lobe. It is an anatomical variant which is usually asymptomatic.[1] It is mostly detected by bronchoscopy or tomography as accidentally.[1,2] It was first described by Sandifort.[3] We aim to present a rare congenital anomaly, companied with literature, which we reached from unusual courses to diagnose and applied surgical treatment to it.

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CASE REPORT

A 58 years old man admitted with cough and sputum. The patient have not any pathological evidence of physical examination and laboratory tests. Spirometric tests were normal. On the C-R was detected an opacity of 2 cm in diamater with regular margin in right upper lobe. Computerized tomography (CT) of the thorax revealed a solitary nodule which 19x12 mm in diamater with regular margin in apical segment of upper lobe neighbouring the vertebrae (Figure 1). We decided to apply thoracotomy, because of the central location of the lesion. We entered in hemithorax through right lateral thoracotomy under general anesthesia. On upper lobe apical region, dense cohesions was dissected by blunt and sharp dissections. The nodule in the upper lobe apical segment was palpated. An accessory bronchus was detected at the level of supracarina between the right upper lobe apical segment and the trachea. We assessed that anomolous bronchus descents from right lateral wall of the trachea and entering to the upper lobe apical segment. It has a length of 2-3 cm and 1 cm in diameter. Accessory bronchus was dissected by a TA 30 mm bronchial stapler (Ethicon Endo Surgery, LLC Guaynabo, Puerto Rico 00969 USA) from the lateral wall of the trachea. Apical segmentectomy was applied. The patient discharged without a problem. Coronal sections of the patient's thorax CT was constructed by consulting with radiologist. An accessory bronchus which originated from the distal portion of the trachea, 2cm above carina, entering to the apical segment of the right upper lobe was seen on the coronal CT sections (Figure 2). In macroscopic examination of the segmentary resection material of the lung, have had surfaces with congestion which was 7x5x3 cm in dimentions and a separate segmentary tracheal bronchus which enters into this segment. Cytopathological examination of the resection material revealed a pulmonary tissue which have some changes associated with cystic, emphysematous, bronchiectatic and anthracotic characteristics.

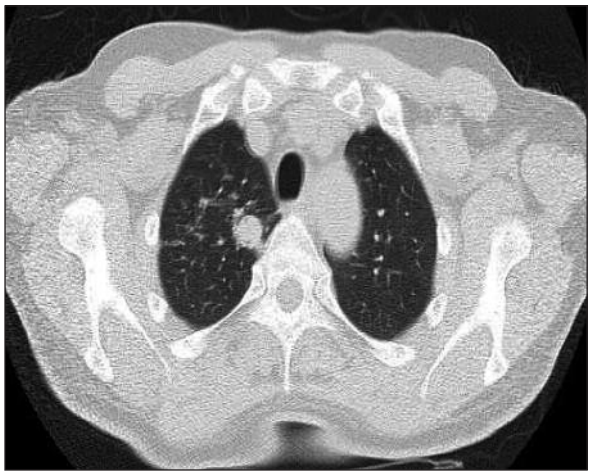

FIGURE 1: Axial section of thorax CT showing a pulmonary nodule.

FIGURE 2: Coronal section of thorax CT showing an accessory bronchus which get away from trachea above carina.

DISCUSSION

The TB was divided into two subgroup; if TB is associated with normal right upper lobe trifurcation it is a called extra TB, if a branch of upper lobe bronchus is absent while there is TB, it is called displaced TB.[2] Ghaye et al. identified the bronchial anatomy by a study using high resolution thin section spiral CT scanning and reconstruction technique in a 17500 patient series. In this study 2 major anomalies were detected: 1. TB 2. Accessory cardiac bronchus (ACB). The prevalance of these two bronchial anomalies were detected 0,46% for TB and 0,08% for ACB. 35 cases detected with TB, all of these patients were adults and asymptomatic. Eight of these patients have the extra TB, 27 have the displaced

TB. Therefore, it should be said that extra TB is rare than displaced TB.[2] The incidence of TB varied from 0,1 % to 2 % in different studies.[2,4] The TB is mostly accompanied with other congenital malformations such as vertebrae and rib anomalies.[5] Also the patients with Down syndrome have a higher incidence of TB.[6]

TB usually is asymptomatic. But it can cause recurrent enfections, stridor, respiratory distress and thoracal mass in childhood.[7] On the other hand in adults, it is mostly diagnosed during tracheal entubation. In these patients, as endotracheal tube obstructs the lumen of TB, atelectasis, post-obstructive pneumonia and even respiratory failure can occur.[8] Ghaye et al. had stated that all adult patients were asymptomatic. Adult patients are incidentally detected by tomography due to they are usually asymptomatic. Therefore the largest study in current literature associated with incidence of TB was published by radiologists.[2] Şen et al. reported a case of TB with a squamous cell carcinoma, which was treated successfully.[9] Arslan et al. reported a case with TB, pulmonary sequestration, and azygos lobe.[10] Our case at adult age was symptomatic on the contrary expressed as in the literature, was not diagnosed by thorax CT, was not identified during general anesthesia, and yet could be diagnosed intraoperatively. Also this anomaly have a clinical importance in terms of anesthesiologists. It is posible that ventilation problems may occur in patient due to TB obstructed by endotracheal tube during operation for another endication. Therefore case reports have a majority, which published by anesthesiologists, in current literature associated with TB.

Treatment in these cases vary according to severity grade of symptoms. For severely symptomatic cases, even right upper lobectomy may be necessary, while observation is enough for cases with mild symptoms.[6]

In conclusion, congenital anomaly of TB which rarely seen is a bronchial variation, should be known by anesthesiologists, radiologists and thoracic surgeons, should be kept in mind during daily practice.

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