Left Atrial Mass Diagnosed by Convex Probe Endobronchial Ultrasound: Case Report

Konveks Problu Endobronşiyal Ultrason Yöntemi ile Saptanmış Sol Atriyal Kitle

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ABSTRACT Primary tumours of the heart are extremely rare. Myxoma is the most common cardiac tumour. A 61-year-old woman presented with dyspnea was referred to our clinic. Her chest roentgenogram revealed right hilar enlargement. Chest computed tomography showed a mass in the right hilar region. As bronchoscopy was normal, an endobronchial, ultrasound guided, transbronchial needle aspiration was performed to obtain a diagnosis. During the procedure, a hypoechogenic image was seen in the left atrium. It was well-defined, mobile, 20x12 mm in diameter and attached to the interatrial septum with a peduncle. Transthoracic echocardiography confirmed the diagnosis of left atrial mass. The mass was surgically removed and pathologic analysis confirmed a cardiac myxoma.

Key Words: Heart neoplasms; echocardiography

ÖZET Primer kardiyak tümörler oldukça nadirdir. Miksoma en sık görülen kalp tümörüdür. Altmışbir yaşında kadın hasta kuru öksürük yakınması ile kliniğimize refere edildi. Akciğer grafisinde sağ hiler dolgunluk saptandı. Akciğer bilgisayarlı tomografisinde sağ hiler kitle ile uyumlu görünüm izlendi. Fiberoptik bronkoskopi normal olması üzerine tanısal amaçlı endobronşiyal ultrason rehberliğinde transbronşiyal iğne aspirasyonu planlandı. İşlem esnasında sol atriyumda hipoekojen imaj izlendi. Bu hipoekojen imajın sınırları belirgin, mobil, 20x12 mm çapında olup, interatriyal septuma pedinkül ile tutunmuş idi. Sol atriyumdaki kitlenin tanısı transtorasik ekokardiyografi ile konfirme edildi. Hastanın operasyon sonrası çıkarılan kitlesinin histopatolojik tanısı kardiyak miksoma ile uyumlu bulundu.

Anahtar Kelimeler: Kalp tümörleri; ekokardiyografi

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Primary tumours of the heart are extremely rare. Myxoma is the most common cardiac tumour. Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) is a minimally invasive biopsy procedure, visualizing the lesion surrounding the trachea and bronchi by convex probe.[1,2] The linear ultrasound images are easy to interpret and provide useful information on the area around the tracheal and bronchial tree. In this report we describe a case of atrial mass diagnosed by Convex Probe Endobronchial Ultrasound (CP-EBUS).

CASE REPORT

A 61-year-old woman presented with dyspnea was referred to our clinic. Physical examination on admission showed no abnormality. Her chest roentgenogram revealed right hilar enlargement (Figure 1). Chest computed tomography (CT) showed a mass in the right hilar region and another mass in the right upper paratracheal area (Figure 2). In her F18-fluorodeoxyglucose positron emission tomography (FDG-PET) lesions were metabolicaly active (Figure 3) and standardized uptake value (SUV) was 10.39 and 7.42 in turn. As bronchoscopy was normal, an EBUS-TBNA was performed to obtain a diagnosis. EBUS-TBNA was performed with a flexible ultrasonic puncture bronchoscope (BF-UC 260F-OL8; Olympus; Tokyo, Japan) under conscious sedation. The images were processed in a dedicated ultrasound scanner (EU-C2000/EU-C60; Olympus; Tokyo, Japan). During the procedure, a hyperechogenic image was seen in the left atrium. It was well-defined, mobile, 20x12 mm in diameter and attached to the interatrial septum with a peduncle (Figure 4). Transthoracic echocardiography confirmed the diagnosis of left atrial mass (Figure 5). The mass was surgically removed and pathologic analysis confirmed a myxoma (Figure 6). When we look back on the cross-section chest CT in the audience could not see the left atrial mass (Figure 7). The final diagnosis of the lesion in the right hilar region was granulomatous disease and antitubercular therapy was initiated. The patient provided written informed consent.

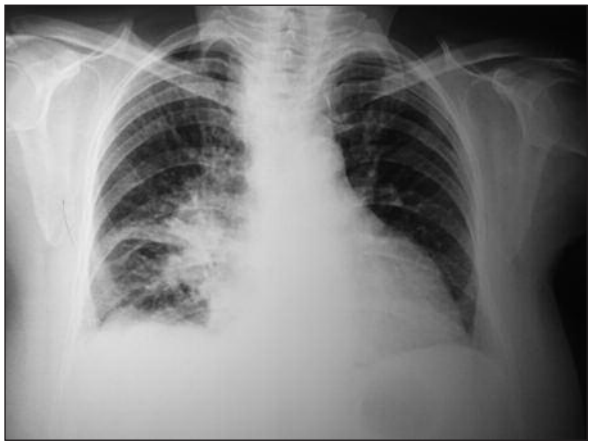

FIGURE 1: Right hilar enlargement observed on chest roentgenogram.

FIGURE 2: Computed tomography: mass in the right upper paratracheal area.

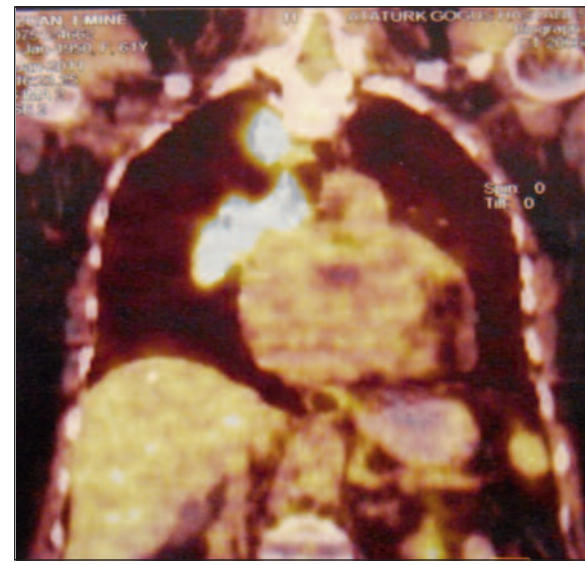

FIGURE 3: FDG positron emission tomography: right hilar mass and mass in the right upper paratracheal area metabolicaly active.
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DISCUSSION

Endobronchial ultrasound (EBUS) is a bronchoscopic technique that uses ultrasound to visualize structures within and adjacent to the airway wall. It is a minimally invasive and safe procedure. There are currently two types of devices: radial probe EBUS and linear-convex probe EBUS. Compared to the radial probe EBUS, the linear ultrasound images are easier to understand and enables real-time guidance during TBNA. EBUS-TBNA is generally performed on an outpatient under conscious seda-

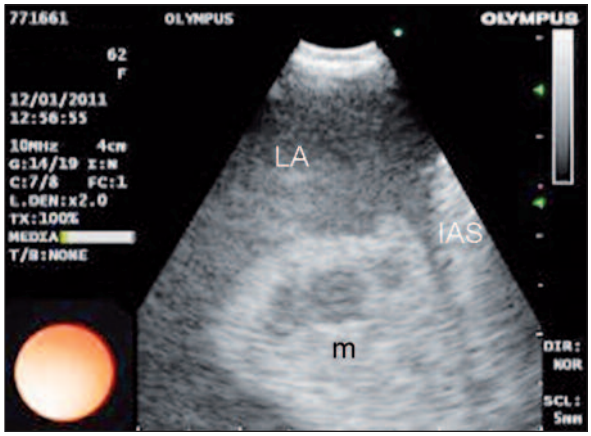

FIGURE 4: Image obtained by EBUS.
LA: Left atrium. m: Mass. IAS: Interatrial Septum.
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FIGURE 5: Transthoracic echocardiography image of the left atrial mass.

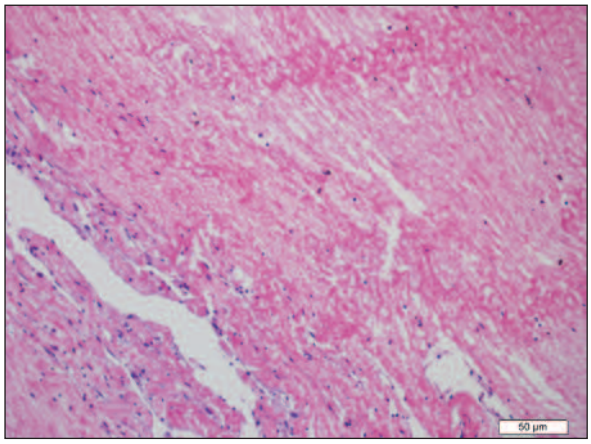

FIGURE 6: Histopathology of myxoma: Hematoxylin and Eosin, × 200 shows wide myxo'd degenerat'on. Due to degeneration of the tumor cells, few fusiform cells in the view of benign character were noticed. They were mixed with inflammatory cells.
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tion. The Doppler mode is used to confirm and identify surrounding vessels as well as the blood flow within lymph nodes. Indications for EBUS-TBNA are the assessment of mediastinal and hilar lymph nodes, diagnosis of lung tumors and mediastinal tumors, mediastinal restaging of lung cancer, diagnosis of lung tumors adjacent to large airways, diagnosis of sarcoidosis.[3] The pulmonary arteries around the central airways can be evaluated by CP-EBUS. Aumiller et al. used EBUS to detect pulmonary embolism. Among 32 patients angio-CT documented 101 PE, of which 97 (96%) were also detected with EBUS. And they concluded that EBUS was a feasible and safe approach to detecting central pulmonary emboli.[4] Also left atrium can be visualized through CP-EBUS. [4] Çetinkaya and et al published a case of left atrial myxoma detected by CP-EBUS.[5]

Malignant and benign primary cardiac tumours are extremely rare, with an incidence in autopsy series reported to be 1 to 30 in 100 000.[6] Myxoma is the most common cardiac tumour, and constitutes 50% of all benign cardiac tumours in adults. About 75% of primary cardiac tumours are benign. Most myxomas are found in the left atrium

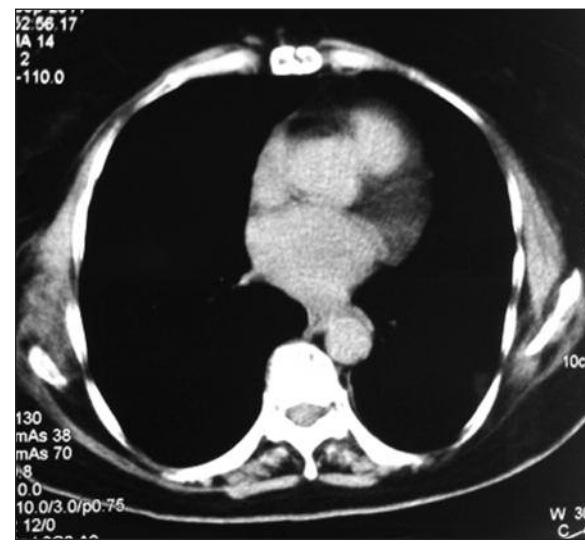

FIGURE 7: Cross-section computed tomography of left atrium. Left atrial mass cannot be observed.

(75%) and in decreasing frequencies in the right atrium, right ventricle and left ventricle. The incidence of myxomas peaks at 40 to 60 years of age. They are more common in women, with a female to male ratio of 3:1.[7] Since the majority originate in the left atrium, transesophageal echocardiography permits the location, origin, size, shape, attachment, mobility, valve compromise and haemodymanic consequences to be determined. Nevertheless, diagnosis is usually by transthoracic echocardiography.[6]

Although EBUS is not the classic tool for the diagnosis of myxoma, we suggest that all neighbouring structures of large airways should be evaluated.[5]

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