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Thymolipoma with massive pleural effusion: A case report

Masif plevral efüzyon ile seyreden timolipom: Olgu sunumu

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Abstract
Thymolipoma is a rare and benign lesion originating from the anterior mediastinum. Thymolipoma is mostly diagnosed incidentally. However, cough, dyspnea and chest pain can be seen. A 35-year-old male patient presented to our hospital with the complaint of shortness of breath lasting for one month. The physical examination revealed a massive pleural effusion on the right. In computed tomography (CT) imaging of the thorax, a soft tissue density of 7.5x5x5 cm in size, containing calcifications were observed in the anterior mediastinum. A right thoracotomy was performed for the treatment and to make a definite diagnosis. The histopathological examination resulted in the diagnosis of a thymolipoma. We presented our case with its differential diagnosis because of its rarity.
Keywords: Thymus, Thymolipoma, Mediastinum

Öz
Timolipomlar nadir görülen, ön mediastenden köken alan benign tümörlerdir. Genellikle insidental olarak bulunmakla birlikte öksürük, dispne ve göğüs ağrısı görülebilir. 35 yaşında erkek hastamız, bir aydır devam eden nefes darlığı şikayeti ile hastanemize başvurmuştur. Hastamızda sağ masif plevral effüzyon saptandı. Bilgisayarlı toraks tomografisinde (BT) anterior mediastende kalsifikasyonlar içeren 7,5x5x5 cm boyutlarında yumuşak doku dansitesi izlenmiştir. Tedavi ve kesin tanı için hastaya sağ torakotomi yapılmıştır. Histopatolojik inceleme, timolipom tanısını konuldu. Olgumuzu nadir olması nedeniyle ayırıcı tanıları ile birlikte sunduk.
Anahtar kelimeler: Timus, Timolipom, Mediasten

Introduction

Thymolipoma is a rare benign tumor, originating from the anterior mediastinum. It accounts for 2-9% of all thymus neoplasms. It is composed of fat tissue, epithelium, and the lymphoid tissue of the thymus. The etiology of the disease has not been completely clarified yet [1-3]. Thymolipoma was first described by Hall in 1948 [4]. Thymolipoma is mostly diagnosed incidentally. Thymolipoma is composed of mature adipose tissue and thymus tissue histopathologically. Fat tissue is composed of mature adipocytes, without showing atypia. Thymus tissue consists of atrophic thymic epithelium and areas of thymus parenchyma containing Hassall's corpuscles [1-2]. In most cases, calcification of Hassall's corpuscles and areas of cystic degeneration can be observed [1,2,5]. The histopathological differential diagnosis of thymolipoma should include thymic hyperplasia, lipoma, and well-differentiated liposarcoma [1-2]. The histopathological differential diagnosis of thymolipoma is summarized in Table 1 [1-2]. Thymolipoma may rarely contain thymoma or a carcinoid tumor. An immunohistochemical examination is usually not required for diagnosis [1].

Case presentation

A 35-year-old male patient presented to our hospital with the complaint of shortness of breath lasting for one month. The patient's medical history informed that he smoked 20 packs of cigarettes per year and had a diagnosis of ankylosing spondylitis. The family history was non-specific. We were informed that the patient was an engineer and had no exposure to asbestos. In the physical examination; blood pressure was 120/85 mmHg, pulse rate was 82/minute, and the respiratory rate was 18/minute. The respiratory system examination revealed dullness to percussion over the right hemithorax and decreased respiratory sounds. The results of hemogram, biochemistry tests, and urinalysis were within normal limits and the viral markers were negative. The chest radiography and ultrasound (US) examination of the thorax showed that, in line with the findings of the physical examination, the costodiaphragmatic recess was blunted and a massive amount of pleural fluid was present.

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Table 1: Histopathological differential diagnosis of thymolipoma [1-2].

Thymolipoma	• Consists of small amounts of mature adipose tissue and thymic tissue residues • Fat tissue consists of mature adipocytes that do not show atypia • Contains thymic tissue component • Calcification and cystic degeneration can be observed • There are no germinal centers
Thymus Hyperplasia	• Normal thymic structure • Adipose tissue is not seen too much • Germinal centers are available
Lipoma	• Thymic tissue is not detected • Nuclear atypia non-observed lipocytes
Well-differentiated liposarcoma	• Nuclear atypia and lipoblasts are observed. • Thymic epithelium is not detected • Positive reaction with immunohistochemical MDM-2 may support the diagnosis of well-differentiated liposarcoma

The pleural fluid was drained and its volume was determined to be 800 cc. Computed tomography (CT) of the thorax showed a large mass of 7.5x5x5 cm in the anterior mediastinum, containing fat tissue, calcifications, fine bands, and vascular structures (Figure 1). The levels of blood gases were not abnormal. A right thoracotomy was performed for the treatment and to make a definite diagnosis. The mass originating from the anterior mediastinum was excised completely and it was submitted for pathological examination. In the macroscopic examination, the mass was 10x7x5 cm in size, slightly lobulated, and in yellow-to-white color. The cross-sections of the mass were observed in yellow-grey color, containing calcifications and hard nodules. The microscopic examination revealed a mature fat tissue, containing Hassall's corpuscles, thymus tissue, and calcifications (Figure 2). A thymolipoma diagnosis was made based on the histopathological finding. The patient consent was taken before writing this case report.

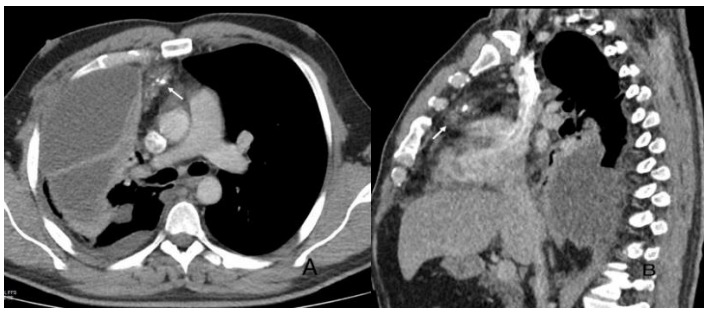

Figure 1: A: Axial contrast-enhanced computed tomography image shows a hyperdense lesion with calcifications within the anterior mediastinum, B: Sagittal contrast-enhanced computed tomography image shows a hyperdense lesion with calcifications within the anterior mediastinum

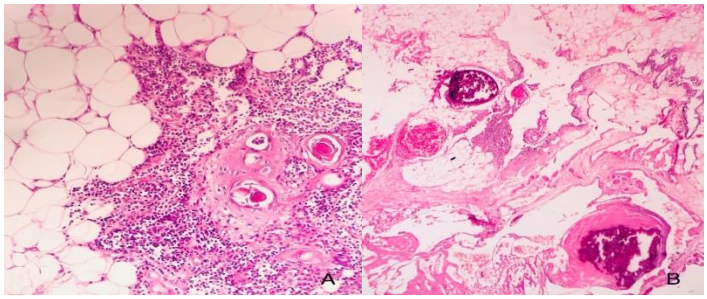

Figure 2: A: Thymus tissue and fat tissue at small magnification (H & E 20X), B: Thymus tissue and fat tissue containing calcification areas at small magnification (H & E 10X)

Discussion

Thymolipoma is a rare and benign lesion originating from the anterior mediastinum [1-2]. The etiology of thymolipoma has not been completely explained yet, however, there are several suggestions for its clarification. It was preliminarily suggested that these lesions were lipomas in the thymus tissue. After noticing that the amount of the thymus tissue itself was also increased significantly, this point of view was abandoned. Then, it was considered that these lesions represented a co-existence of lipoma and thymoma, however, this point of view was also abandoned as thymus tissue was normal histologically. Another argument was that the tumor initially began to develop as real thymic hyperplasia and then degenerated into fat tissue [1-3].

Thymolipoma is usually diagnosed incidentally. Local symptoms may also occur including a cough, dyspnea, chest pain, and cyanosis in symptomatic cases. Myasthenia gravis is also commonly seen. In rare cases; aplastic anemia, erythrocytic hypoplasia, and hypogammaglobulinemia may develop [6-12].

Thoracic CT and / or MRI in the radiological diagnosis of thymolipoma support the diagnosis by showing the fat content of the tumor. In the radiological differential diagnosis, the lesions involving the anterior mediastinum should be considered. Germ cell tumors, thymic hyperplasia, lipoma, liposarcoma, lymphoma, mediastinal fat pad, diaphragmatic herniation, lymphangioma, hemangioma are included in the differential diagnosis of thymolipoma. The wide range of radiological differential diagnosis necessitates histopathological evaluation [13-14]. In this article, we reported a patient with thymolipoma presenting with massive pleural effusion, as this clinical condition is rare.

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