

# Magnetic resonance imaging findings of elastofibroma dorsi: A case report

## Elastofibroma dorsi manyetik rezonans görüntüleme bulguları: Olgu sunumu

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### Abstract

Elastofibroma dorsi (EFD) is a rare soft tissue tumor. In people who work with arm power, excessive rubbing of the scapula to the chest wall or genetic factors is held responsible for its formation. Thoracic computed tomography (CT) and magnetic resonance imaging (MRI) are the most commonly used imaging modalities for diagnose of EFD. MRI and CT imaging can distinguish EFD with the support of clinical findings. It is necessary to avoid unnecessary interventional procedures in asymptomatic elderly patients who are thought to be EFD and only follow-up is sufficient in these cases. This article aimed to present MRI findings of a 61-year-old male patient suffering from EFD with literature review.

**Keywords:** Magnetic resonance imaging, Chest, Surgery, Elastofibroma dorsi

### Öz

Elastofibroma dorsi (EFD), nadir görülen bir yumuşak doku tümörüdür. Kol gücü ile çalışan insanlarda, skapulanın göğüs duvarına aşırı sürtünmesi veya genetik faktörler oluşumundan sorumlu tutulur. Torasik bilgisayarlı tomografi (BT) ve manyetik rezonans görüntüleme (MRG) EFD tanısında en sık kullanılan görüntüleme yöntemleridir. BT ve MRG EFD 'yi klinik bulguların desteği ile ayırt edebilir. EFD olduğu düşünülen asemptomatik yaşlı hastalarda gereksiz girişimsel işlemlerden kaçınmak gerekir ve bu vakalarda sadece takip yeterlidir. Bu yazıda EFD'den muzdarip 61 yaşında bir erkek hastanın MRG bulgularını literatür taraması ile birlikte sunmayı amaçladık.

**Anahtar kelimeler:** Manyetik rezonans görüntüleme, Toraks, Cerrahi, Elastofibroma dorsi

### Introduction

Elastofibroma dorsi (EFD) is a rare, benign, solid, slow-growing, encapsulated soft tissue tumor that is frequently seen in the subscapular region of the chest wall. It cannot be distinguished easily [1,2]. The lesion was named as EFD due to its characteristic subscapular-infrascapular location [1,3]. However, although it is rarely, elastofibroma (EF) can also be seen outside this site. In this situation, only the lesion is called EF and the lesions located in the subcapsular region are called EFD. Other areas reported for EF are lateral chest wall, deltoid muscle, axilla, thoracenter major, around olecranon, foot, tricuspid valve, tuberositas ischi, inguinal region, omentum majus, stomach, rectum, spinal canal, sclera, orbita and mediastinum [1,4-7]. In this report, 61-year-old male patient suffering back pain because of EFD is presented.

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Informed Consent: The authors stated that the written consent was obtained from the patient presented in the study.

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## Case presentation

A 61-year-old male patient was admitted to the clinic with complaints of swelling on his back for a long time. On his physical examination, there was a palpable mass on the chest wall. Chest X-ray was normal. Chest magnetic resonance imaging (MRI) was performed to patient. There was a heterogeneous mass lesion on the left side of the chest wall, 90x76x31 mm in size, which was located longitudinally between the ribs and serratus anterior muscle and isointense with muscles. Mass-localization and imaging findings were compatible with EFD (Figure 1). Informed consent was obtained. The mass was totally excised. Histopathologic diagnosis was confirmed as elastofibroma dorsi. The patient had no complaints postoperatively.

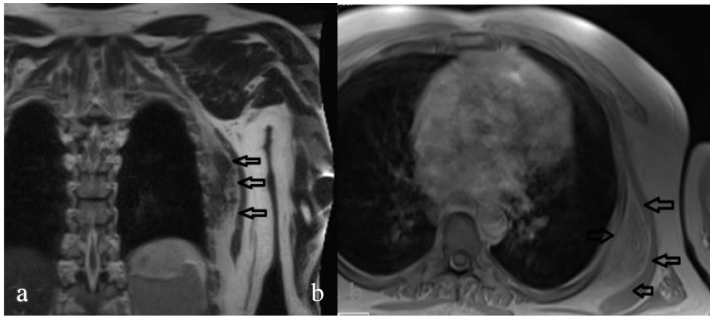


Figure 1: In the chest magnetic resonance imaging, there is a heterogeneous mass lesion which was located longitudinally between the ribs and serratus anterior muscle at the left side and isointense with muscles. a: Coronal plain, b: Axial plain

## Discussion

A rare, benign tumor of the connective tissue, EFD is located below the scapula. It emerges as a soft tissue mass that pushes the scapula out [7]. Although it is seen as an asymptomatic swelling, in some cases it causes increasing pain, discomfort or tension in periscapular region in addition to limitation in shoulder movements [2,8]. Rarely, an annoying click during the shoulder movement can be felt. Although it is known to enlarge slowly, Turna et al. [9] reported a case with radiological doubling time as short as 25 days.

Many opinions have been proposed to explain the pathogenesis of the EFD. The first of these is the recurrent minor trauma suggested by Jarvi, that occurs in the subcapular region by rubbing the lower edge of the scapula to the chest wall [8,10].

When the EFD, which is unilateral in 90% of the cases, is bilateral, the two lesions may be synchronous or asynchronous [11,12]. Although it is reported that there are 8-12 times more than females in males, the reason for this frequency is not mentioned [10,13]. It was reported that the lesion is seen after 5th decade and our case was also 61 years old [14].

Chest radiographs, ultrasonography, computed tomography (CT) and MRI are useful for diagnosis. On chest X-ray, a soft tissue tumor can be seen in the chest wall. On ultrasonography, there is a mass-like appearance in the form of linear and curvilinear hypoechoic lines sprinkled in the echogenic fibroelastic background, and the multilayer appearance is characteristic. On CT, EFD is observed as a heterogeneous soft tissue mass and contains linear low density areas depending on adipose tissue. Distinction from environmental muscle plans is poor. In MRI, EFD is in the form

of a soft tissue mass with heterogeneous intensity and fat-related linear hypointense opacities. In T1 and T2-weighted images, the form of soft tissue mass with high or medium intensity, straight and curved linear regions is characteristic. According to some authors, biopsy is not necessary for diagnosis [15-17,20,21].

In the differential diagnosis, lipoma, hemangioma, metastatic or primary sarcoma, desmoid tumor, subcapsular bursa prominence, neurofibroma, scapular fibroma, fibrous histiocytoma, fibromatosis and fibrolipoma should be considered. Needle aspiration or incisional biopsy can be performed to confirm diagnosis; however, excisional biopsy should be preferred [1,3,15,18,20,21].

Surgical total excision of the EFD is the recommended treatment modality. However, It is also recommended to avoid surgery especially if the lesions are asymptomatic and smaller than 5 cm [1,19-21]. There were no reports of local recurrence after surgery except one case [1,3,20,21].

EFD is an under diagnosed lesion which should be considered in the differential diagnosis of soft tissue tumors of the scapular region. Its diagnosis is easy when the clinical presentation and the radiological characteristics are typical. Recently, authors recommend biopsies only for atypical cases.

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