

## Elastofibroma dorsi: a review of 42 cases

### *Elastofibroma dorsi: 42 olgunun analizi*

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**Background:** This study aims to review our surgical results of elastofibroma dorsi.

**Methods:** Between January 2005 and December 2012, a total of 42 patients (33 females, 9 males; mean age 59.7 years; range 31 to 77 years) who were operated in our clinic were included. All patients were admitted with complaints of pain, swelling or limited range of motions of the shoulder range except two cases who underwent thoracotomy for other reasons. Twenty three patients (55%) had bilateral tumors. All patients were operated.

**Results:** Postoperative complications were seroma in six patients, pneumothorax in one and local recurrence in one at eight months.

**Conclusion:** If diagnosis is definitive without any clinical signs in elastofibroma dorsi cases, asymptomatic cases can be followed up. However, symptomatic cases or those with a suspected diagnosis should be operated.

**Key words:** Chest wall tumor; elastofibroma dorsi; soft tissue tumor.

**Amaç:** Bu çalışmada, elastofibroma dorsiye yönelik cerrahi sonuçlarımız gözden geçirildi.

**Çalışma planı:** Ocak 2005 - Aralık 2012 tarihleri arasında kliniğimizde ameliyat edilen toplam 42 hasta (33 kadın, 9 erkek; ort. yaş 59.7 yıl; dağılım 31-77 yıl) çalışmaya alındı. Başka neden ile yapılan torakotomide rastlanan iki olgu dışında tüm olgularda ağrı, şişlik ya da omuz hareketlerinde kısıtlılık yakınmaları vardı. Tümörler 23 hastada iki taraflı idi (%55). Hastaların tümü ameliyat edildi.

**Bulgular:** Ameliyat sonrası komplikasyon altı hastada seroma, bir hastada pnömotoraks, bir hastada da sekizinci ayda lokal nüks idi.

**Sonuç:** Elastofibroma dorsi olgularında tanı kesin ise ve klinik bulgu bulunmuyorsa, asemptomatik olgular takip edilebilir. Ancak semptomatik olgular veya tanıda şüphe olan olgular ameliyat edilmelidir.

**Anahtar sözcükler:** Göğüs duvarı tümörü; elastofibroma dorsi; yumuşak doku tümörü.

Elastofibroma dorsi (EFD) is a rare, benign soft tissue lesion that is typically located deep under the lower angle of the scapula. These lesions are nonencapsulated and are characterized by the proliferation of elastic fibers within a stroma of collagenous adipose tissue. Since it was first described by Jarvi and Saxen<sup>[1]</sup> in 1961, only 320 cases of EFD have been reported in the literature,<sup>[2-4]</sup> and almost all of these have been located

at the lower subscapular area, deep in the rhomboid in the latissimus dorsi muscles.<sup>[5]</sup> Elastofibroma dorsi is often asymptomatic and can be painful during shoulder movement. Magnetic resonance imaging (MRI) is usually satisfactory for diagnosis and can be utilized to identify the location or shape of the mass. Herein, we describe our experience in treating 42 patients with EFD.



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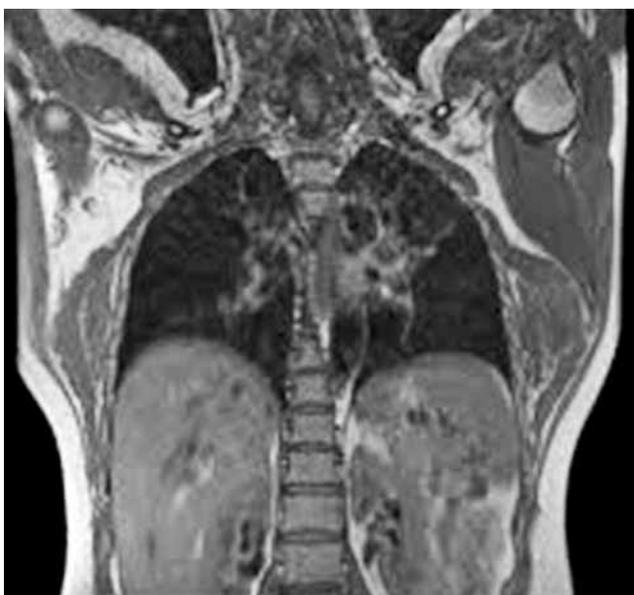
## PATIENTS AND METHODS

We examined 42 EFD patients (33 females, 9 males; mean age 59.8 years; range 31 to 77 years) who were identified via our retrospective database containing the details of all of the referrals to our thoracic surgery clinics from the last 10 years. We also determined that the EFD was bilateral in 23 of the patients (59.7%).

The presenting symptoms were swelling in 40 patients (95%) and limited shoulder movement in 12 (28.5%). In addition, EFD was incidentally discovered in two patients during a thoracotomy and later confirmed by MRI (Figure 1, 2). This revealed a mass behind the inferior angle of the scapula that was located deep in the chest wall and was raising the serratus anterior muscle to form a cleavage. The mass was oblong, nonencapsulated, and moderately well-circumscribed (but had been ill-defined in a perioperative examination). No biopsy was necessary, and the diagnosis of EFD was made based on the MRI and clinical findings.

## RESULTS

All of the patients were operated on in a prone position, except for the two who were diagnosed incidentally. A parascapular parabolic incision was usually preferred, and since the tumor was not ill-defined, special attention was taken to resect the mass completely. In most cases, more than 5 cm of the mass was firmly adherent to the inner surface of



**Figure 1.** Coronal magnetic resonance shows bilateral elastofibroma dorsi.

the scapula, and a rugine had to be used to dissect the mass from the periost of the scapula since some part of the mass were located beneath the scapula. Normally, capitonnage of the cavity is usually difficult to perform. Therefore, aspiration drains were used in all cases for one to four days, but seromas, which usually develop in EFD cases with masses larger than 6 cm, still developed in six of our cases, necessitating the need for needle aspiration.

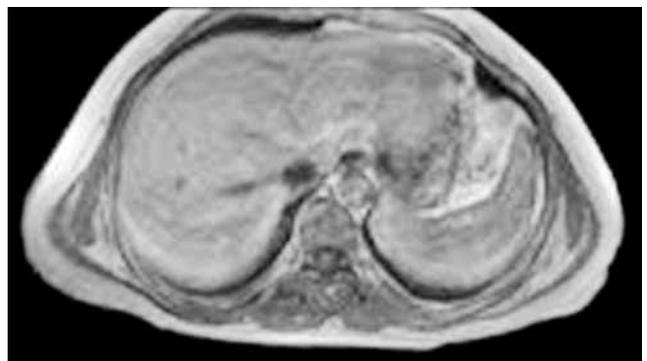
Furthermore, a mild pneumothorax developed in one patient, but conservative treatment was satisfactory to alleviate this condition.

At eight months postoperatively, one patient developed a local recurrence that was attributed to an incomplete resection, but since there were no symptoms, no immediate action was taken. However, we continued to follow-up the patient closely.

## DISCUSSION

Elastofibroma dorsi is an uncommon, benign, slow-growing soft tissue tumor with an uncertain etiology, but several theories have been proposed. Repeated microinjuries between the chest wall and the scapula, the source of excess elastin production and collagen degeneration, could play a physiopathological role in this rare lesion.<sup>[3,4,6]</sup> The notion of forced manual exercise is another possibility, but it has not consistently mentioned since only rarely do authors report patients' occupations and the predisposing factors.<sup>[7]</sup> Nagamine et al.<sup>[2]</sup> theorized that familial predisposition might be the cause. In addition, they found that the dominant hand was also responsible due to repetitive trauma, but bilaterality might make that argument a moot point.

Subscapular EFD is found more frequently on the right side (60%), but in 66% of cases, it is bilateral in nature.<sup>[1,2,8]</sup> In a study by Kourda et al.,<sup>[9]</sup> both tumors



**Figure 2.** Axial magnetic resonance shows bilateral elastofibroma dorsi.

developed asynchronously, and the second tumor was most often discovered via a clinical or radiological examination. In our cases, all of the patients with bilateral EFD were already aware of this diagnosis.

In addition, the feeling of pain or limited shoulder movement is possibly be more important than any swelling, which in our cases was either not painful or was not identified during palpation. We also found that the mass could be viewed better via forward flexion of the shoulder. On a physical examination, these masses are usually well circumscribed and nonadherent to the overlying skin but are slightly adherent to the chest wall. Furthermore, the scapula usually overlies the lesion in EFD cases with large lesions.

Elastofibroma dorsi is a benign pseudotumor that commonly occurs in middle-aged patients, especially women. It has a subscapular location, is quite often bilateral, and is composed of stratified fibrous and fatty tissue. If the lesion has a typical appearance on imaging studies and is asymptomatic, as is most often the case, then no complementary studies are necessary, and the patient can simply be regularly followed up.<sup>[7]</sup> However, surgical treatment may be necessary if the lesion is symptomatic or if doubt persists as to the lesion's benign nature. In these cases, a complete resection with healthy surgical margins should be performed to allow for a precise histological diagnosis.<sup>[10]</sup>

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