



ELASTOFIBROMA DORSI: a rare soft tissue tumor, with a pathognomonic anatomical location, clinical and imaging: About 4 cases

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ABSTRACT

Elastofibroma dorsi is an uncommon benign soft tissue pseudotumour, usually located at the lower pole of the scapula. It is deep to serratus anterior, and often attached to the periosteum of the ribs. The mass contains both fibrous tissue and fatty tissue. Imaging studies can provide an accurate diagnosis in many cases. Computed tomography and magnetic resonance imaging are particularly effective, as they visualize the layered pattern characteristic of fatty tissue and fibrous tissue. To a lesser extent, plain radiographies and ultrasonography identify a number of suggestive features. When the lesion exhibits typical imaging features and does not produce symptoms, further investigations are unnecessary. We report 4 cases of dorsal elastofibroma illustrating the imaging of this disease.

Keywords: Elastofibroma dorsi, soft tissue pseudotumour, imaging

INTRODUCTION

The dorsal elastofibroma is a tumor or pseudotumor, located typically in the very tip of the scapula. But it is not exceptional to find it in old people. The diagnosis can be made formally by imaging methods, especially computed tomography (CT) and especially magnetic resonance imaging (MRI). When the lesion is quite typical imaging and asymptomatic, that is the most common; and no additional focus points seem necessary.

MATERIALS AND METHODS

CASES REPORTS:

We report 4 cases of dorsal elastofibroma illustrating the imaging of this disease.

Observation 1: (Figure 1) a 54-year-old woman, without significant past medical history, referred for radiological assessment of swelling subcutaneous indurated, painless, experiencing left shoulder. Clinical examination revealed a painless mass disappearing beneath the scapula when the arm is against the thorax. Palpation revealed a slightly painful rubber-like mass measuring about 12 cm in diameter, not adhering to the skin. The lesion became manifest on abducting and flexing the left arm. The clinically suspected diagnosis was lipoma.

Observation 2: (Figure 2) a 72-year-old woman without significant past medical history had a right dorsal tumor for the previous 7-8 years. In recent months the lesion had increased in size and caused pain in response to exercise. Based on the experience acquired in case 1, the tentative clinical diagnosis was elastofibroma dorsi.

Observation 3: (Figure 3) a 57-year-old woman with bilateral elastofibroma dorsi. Physical examination showed two bilateral scapular masses, better visualized in abduction or antepulsion. They were firm, painless, and mobile, covered by normal skin, and measured 40 x 41 mm on the right and 42 x 44 mm on the left.

Observation 4: (Figure 4) a 46-year-old woman was admitted to our hospital with mild pain and swelling on the left periscapular region. There was no history of trauma. Physical examination revealed a firm mass measuring 80x30x30 mm at the inferior part of the left scapula. Routine laboratory findings were normal.

Chest radiography showed in case no 3 (Figure 5), tissue masses and typical topography in the tips of scapula. There are no anomalies for other observations. Ultrasonography (Figure 6 and 7) showed in the all for cases: the mass, not well defined training, isoechoic to muscle, was located against the posterior surface of the chest. This mass contains hypo hyperechoic striations, parallel to the general axis of the chest wall. CT (Figure 8 and 9): (used in 03 patients) before and after injection of gadolinium (PC), highlighted a mass of the posterior chest wall next to the inferior angle of the scapula. This mass contains some hypodense linear images; it does not only change after injection of contrast.

Among 03 of our patients, the MRI (Figure 10 a, b and c): Showed a process of homogeneous signal, which is iso signal with muscle structures. This mass goes deeply enough into the layers muscle and to the sub-scapular region (under the tip of the scapula), responsible for delivery of the overlying structures. The outlines are clear and regular.

Figure n°1



Figure n°2



Figure n°3



Figure n°4



Figure n°5

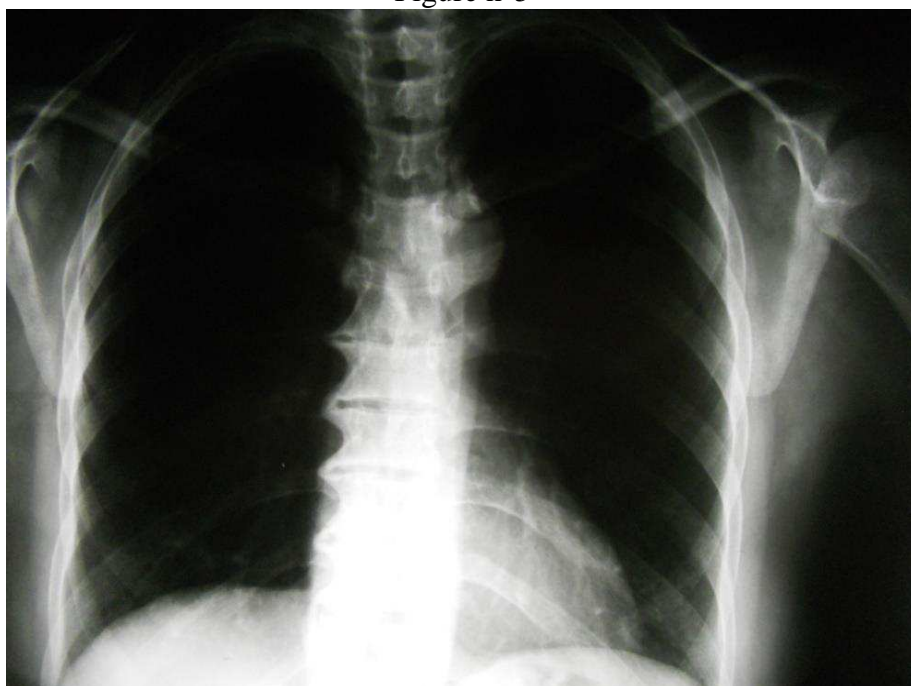


Figure n°6

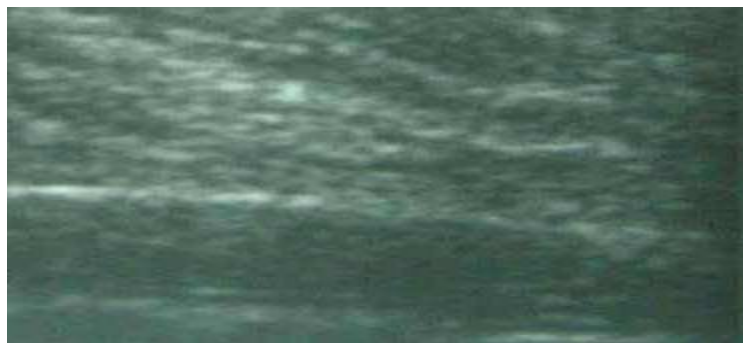


Figure n°7

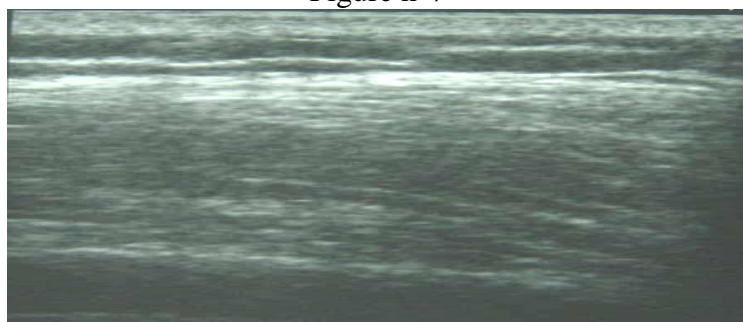


Figure n°8 Tomodensitométrie (Observation n° 1)



Figure n°9 : Tomodensitométrie (Observation n° 3)

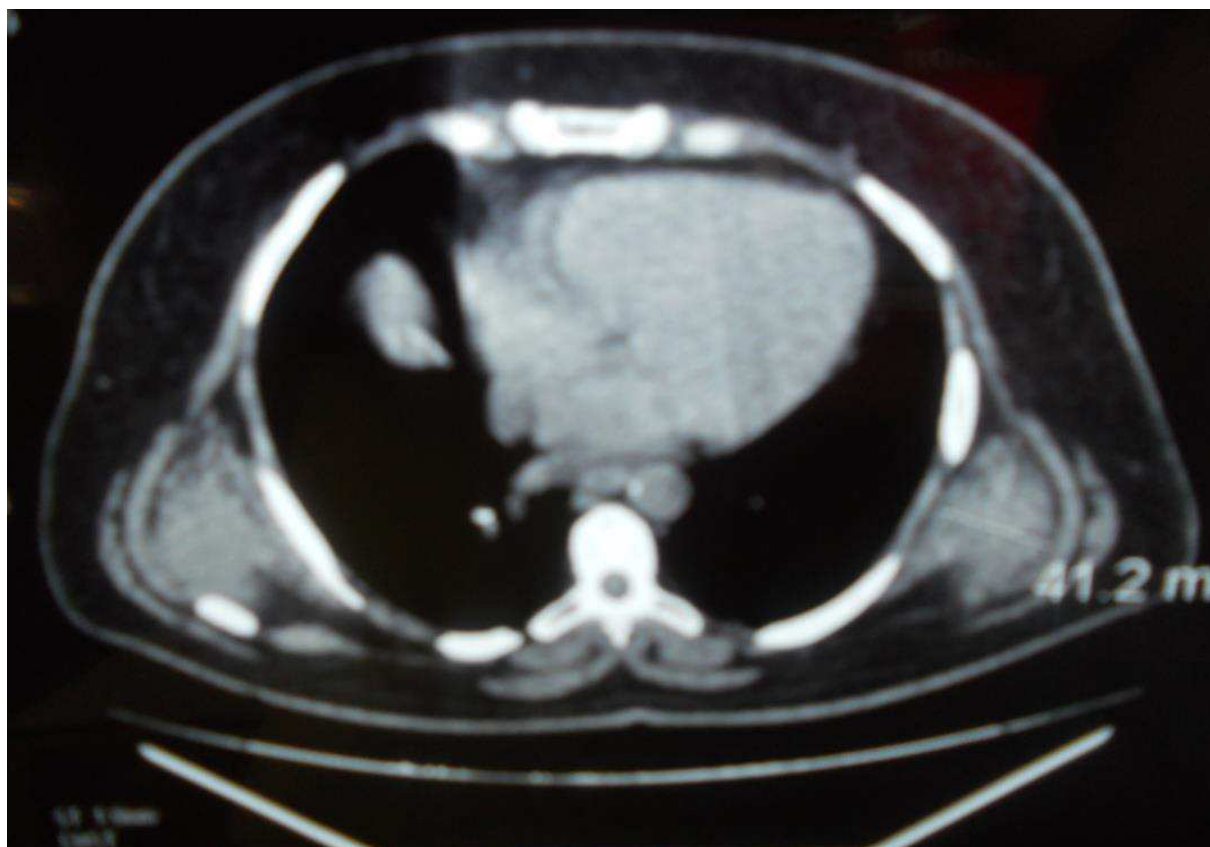
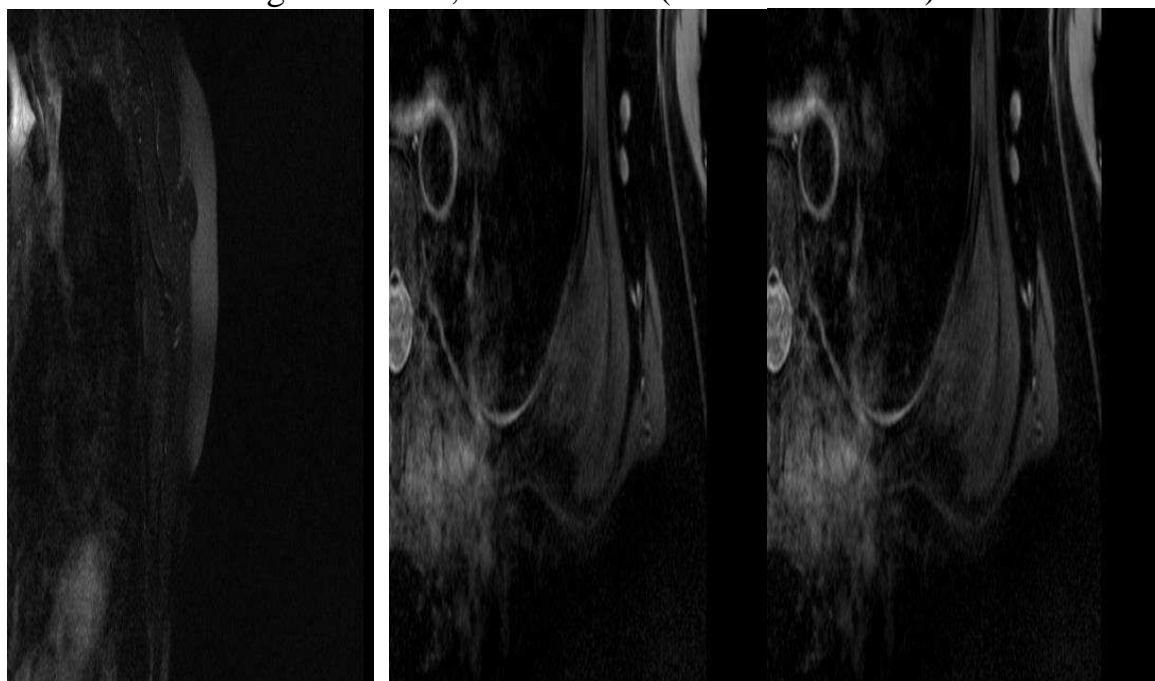


Figure n°10 :a, b et c : IRM (Observation n° 1)



RESULT AND DISSCUSION

Elastofibroma the parietal tumor is benign, fibroproliferative, slowly progressive, rare, with a prevalence of 2%. It is located in 99% at the sub-scapular region. However, through literature, other locations are described: deltoid muscle, ischial tuberosity, greater trochanter, olecranon, intraspinal, intra-orbitaire [1]. The mass can be bilateral, with an asynchronous development of two masses [1, 2]. This is a fibro-elastic hyperplasia due to mechanical stimuli at the scapulothoracic joint. Family history has been observed in 25% of cases. Its tissue composition made of a fibrous web, consisting of collagen and elastic dystrophic fibers which contain mature adipose tissue [2]. Clinically, elastofibroma is asymptomatic in 50% of cases. Sometimes, there is an embarrassment to the movement, stiffness, creaking, or functional impairment. The pain was observed in 10% of cases [3]. Chest radiographies may be normal or can show opacity between the scapula and the chest wall, which can push the scapula. Ultrasound soft tissue is a review of the first intension, which shows a fibrillar and fascicular aspect with the presence of hyperechoic streaks that are parallels to the long axis of the body, especially in its superficielle part [3]. CT shows an unencapsulated lenticular mass, with a well-defined large cranio-caudal axis. This mass composed of fibrous tissue, has the same density as muscle. It has also other layers tissue of fat density. Within the most typical cases, we find a breakdown in parallel layers. After injection of PC, density remains unchanged. It does not come with bone anomaly [5]. The MRI shows a very typical location. Its appearance in double tissue quota is fibrous and fatty. In one hand, fibrous tissue, low on T1 and T2, are similar to muscles. In the other hand, fatty tissue, are intense signal on T1 and intermediate T2. In STIR sequences, the mass is constituted of entangled in with low and intense signal. There is no signal enhancement after gadolinium injection. In gradient echo: one mass without specificity appears inhomogeneous, with a signal higher than the one of fat [6]. The differential diagnosis is made with incapsular lesions of low or intermediate signal on T1 AND T2. Those lesions have a low cellularity and abundant collagen such as desmoid tumors, neurofibroma, liposarcoma, aggressive fibromatosis and malignant fibrous histiocytoma. However, the enhancement of these tumors after injection is higher or heterogeneous compared to elastofibroma [7, 8]. The treatment is surgical excision

CONCLUSION

The dorsal elastofibroma is a tumor or pseudotumor, located typically in the very tip of the scapula. Its tissue composition is made of layers of fibrous and fatty tissue. In fact, it is a mass whose diagnosis can be made formally by imaging methods, especially CT and MRI. When the lesion is quite typical imaging, which is the most common case, no further investigation is necessary, especially no biopsy.

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REFERENCES

- [1] Akif Turna, MD, Muhammet Ali Yılmaz, MD, NurUrer, MD, Mehmet Ali Bedirhan, MD, and Atilla Gurses, MD. Bilateral Elastofibroma Dorsi. *Ann Thorac Surg* **2002**; 73:630–2
- [2] R Alouini (1), M Allani (1), L Harzallah (2), M Bahri (3), C Kraiem (2) et K Tlili-Graies (4). Imagerie de l'élastofibrome dorsal. *J Radiol* **2005**; 86:1712-5

- [3] Baudrez V, Malghem J, Vande Berg B, Lebon C, Lecouvet F, Maldague B. Aspect échographique de l'élastofibrome dorsal. *J Radiol* **1998**; 79 : 549–51.
- [4] Berthoty DP, Shulman HS, Miller HAB. Elastofibroma: chest wall pseudotumor. *Radiology* **1986**; 160:341–2.
- [5] Bianchi S, Martinoli C, Abdelwahab IF, Gandolfo N, Derchi LE, Damiani S. Elastofibroma dorsi: sonographic findings. *AJR* **1997**; 169: 1113–5.
- [6] Charissoux. L, Mabit. Ch, Fiorenza. F, Gougam. Th, Leboutet. M.J, Elastofibrome de l'espace scapulo-thoracique *Revue de chirurgie orthopédique* **2000** ; 86 98-103
- [7] De Schepper AM et De Beuckeleer LH. Imagerie des tumeurs des parties molles. *Encycl Méd Chir (Elsevier, Paris), Radiodiagnostic – Neuroradiologie-Appareil locomoteur*, 31-750-A-10, **1999**, 15 p.
- [8] Fuchs A, Henrot P, Walter F, Lochum S, Vignaud J, Stines J, et al. Tumeurs graisseuses des parties molles des membres et des ceintures de l'adulte. *J Radiol* **2002**;83:1035–57.