A Not Uncommon Tumor: Elastofibroma Dorsi: Are Cross-Sectional Diagnosis Techniques Enough Without Performing Histopathological Diagnosis?

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SUMMARY

Elastofibroma dorsi is a stiff, slow growing, cresent shaped pseudotumor of elder age group. It has been showing fibraelastic proliferation and arising from subscapular or infrascapular region. A 72 year-old female with bilateral elastofibroma dorsi is reported. The aim of this study is to point out the importance of elastofibroma dorsi to the comparatively less experienced clinicians and radiologists and to discuss the best way to diagnose this tumor. In addition, we would like to emphasize that elastofibroma dorsi is not so uncommon tumor but it is just not recognized enough yet, contrary to many reported case reports and articles.

Keywords: elastofibroma dorsi, chest wall, computed tomography, magnetic resonance imaging

Nadir Olmayan Bir Tümör: Elastofibroma Dorsi. Histopatolojik Tetkikler Yapılmadan Sadece Radyolojik Tanı Yöntemleri Yeterli Midir?

ÖZET

Elastofibroma dorsi, yaşlılarda görülen sert, yavaş büyüyen, hilal şeklinde bir yalancı tümördür. Fibroelastik proliferasyon gösterir ve subskapular veya infraskapular bölgede oluşur. Bu çalışmada, 72 yaşında bir bayan hastada iki taraflı elastofibroma dorsi olgusu sunulmuştur. Bu çalışmanın amacı, nispeten az tecrübeli klinisyen ve radyologlar için elastofibroma dorsinin önemini belirtmek ve en iyi tanı tanı yöntemini tartışmaktır.Ek olarak elastofibroma dorsinin aslında çok nadir bir tumor olmadığını ancak yayımlanan pek çok olgu sunumu ve makalelere rağmen yeteri kadar tanınmadığını vurgulamak istedik.

Anahtar Kelimeler: elastofibroma dorsi, göğüs duvarı, bilgisyarlı tomografi, manyetik rezonans görüntüleme

INTRODUCTION

Elastofibroma dorsi is a stiff, slow growing, cresent shaped pseudotumor of elder age group, which is showing fibraelastic proliferation and arising from subscapular-infrascapular region. Chronic mechanical friction between scapula and thorasic wall, especially in armworking patients could be responsible (1). In addition to that, genetic predisposition and cloned chromosomal varieties have also been reported (2,3).This entity, first described by Järvi and Saxénin 1959, may frequently be undiagnosed not only by clinicians but also by radiologists, since it is not well known (4,5).

CASE REPORT

A 72 year-old female referred to our hospital for bilateral painless swelling in periscapular region. In her history, she has been working as handmade carpet weaver for 12 years and the masses occured in the last 2 years.

In physical examination, stiff, mobile masses were palpated bilaterally in the infrascapular region. Her shoulder range of motion was bilaterally limited and painful with forced motion. Routine laboratory tests were normal. Typical lesions were measured as 6x4x2 cm. and 5x4.4x2 cm. in size at right and left infrascapular regions respectively by ultrasonography, which included hypoechoic and hyperechoic multiple layers.

We performed axial T1 weighted, fat suppressed T1 weighted, sagittal STIR, and coronal T2 weighted MR images at lesion's area. In both infrascapular region, non capsulated, heterogeneous and irregular contoured masses which were mild hypointense when compared with adjacent muscle structures in T1 and T2 weighted sections were detected. Figure(1,2,3)

DISCUSSION

We state that, on the contrary to a dozen of case reports and articles in the literature elastofibroma dorsi is not a rare tumor. However it is not well known by both clinicians and radiologists and usually it can not be recognized in computed tomography (CT) and MRI images of thorax. Brandser et al performed a study to evaluate paranchimal lung disease in a group of patient over than 60 years old and reported that the incidence of elastofibroma dorsi by CT was 2% (8). Jarvi et al reported the incidences 24.4% in female and 11.2% in male, in 235 autopsies over than 55 years old (9).

Elastofibroma dorsi represents semilunar shaped multilayered fat and fibroelastic tissue by ultrasonography (10)

Anatomical localization of this tumor is in front of the scapula, at 6th to 8th rib level, close to the latissimus dorsi, serratus anterior and levator scapula muscles (4). 50% of cases are asymptomatic and 25% are bilateral. Lesions bigger than 5 cm. are usually symptomatic. Most common symptoms are joint stiffness (25%) and pain (10%). Although elastofibroma dorsi does not cause bone destruction or muscle invasion, clinically can be mixed up with a sarkoma or a metastasis. Surgical excision is curative for symptomatic cases, however inadequate surgery causes recurrent lesion (2,6,7).

CT appearance of elastofibroma dorsi is diagnostic. Irregular bordered images, isodence with muscle structures having scattered placed planes in fat density are identified. However according to a theory, small elastofibromas, when compared with biggers, look like more homogeneous in CT scans. The reason is thought as early growing stage (8,10,11,12).

In our case MRI findings are compared with other reported cases. Diagnosis can be made by typical localisation of the lesion with irregular border and scattered fat tissue inside. It usually shows strong, heterogeneous contrast after Gadolinium injection. We did not perform contrasted paramagnetic imaging, since we were sure about the diagnosis because of the lesions were bilateral and shown typical MRI findings and localization and patient's history of arm working. As MRI differential diagnosis, desmoid tumors, nörofibroma and liposarcom must be detected (13).

Elastofibroma dorsi is usually treated by invasive methods like surgical resection or biopsy because both the radiologists and clinicians have not enough experience about this lesion. Massengil et al. stated that diagnosis could be made by MRI instead of surgical resection or biopsy. Alouini et al. also supported CT and MRI use and they stated that neither surgical resection nor biopsy is not necessary. Nishida et al. pointed out that elastofibromas in the scapular region have typical MRI findings and they could be treated conservatively. However the lesions localized in anterior thigh could be surgically resected (14,15,16).

One of two important conclusions we want to point out in this case is contrary to a dozen of case reports and articles in the literature, elastofibroma dorsi is not an uncommon tumor. It is just not well recognized. The other conclusion is the apparent superiority of cross-sectional imaging techniques for the diagnosis of elastofibroma dorsi instead of surgery or biopsy that are used to perform even in asymptomatic cases because of inefficient experience of clinicians and radiologists.

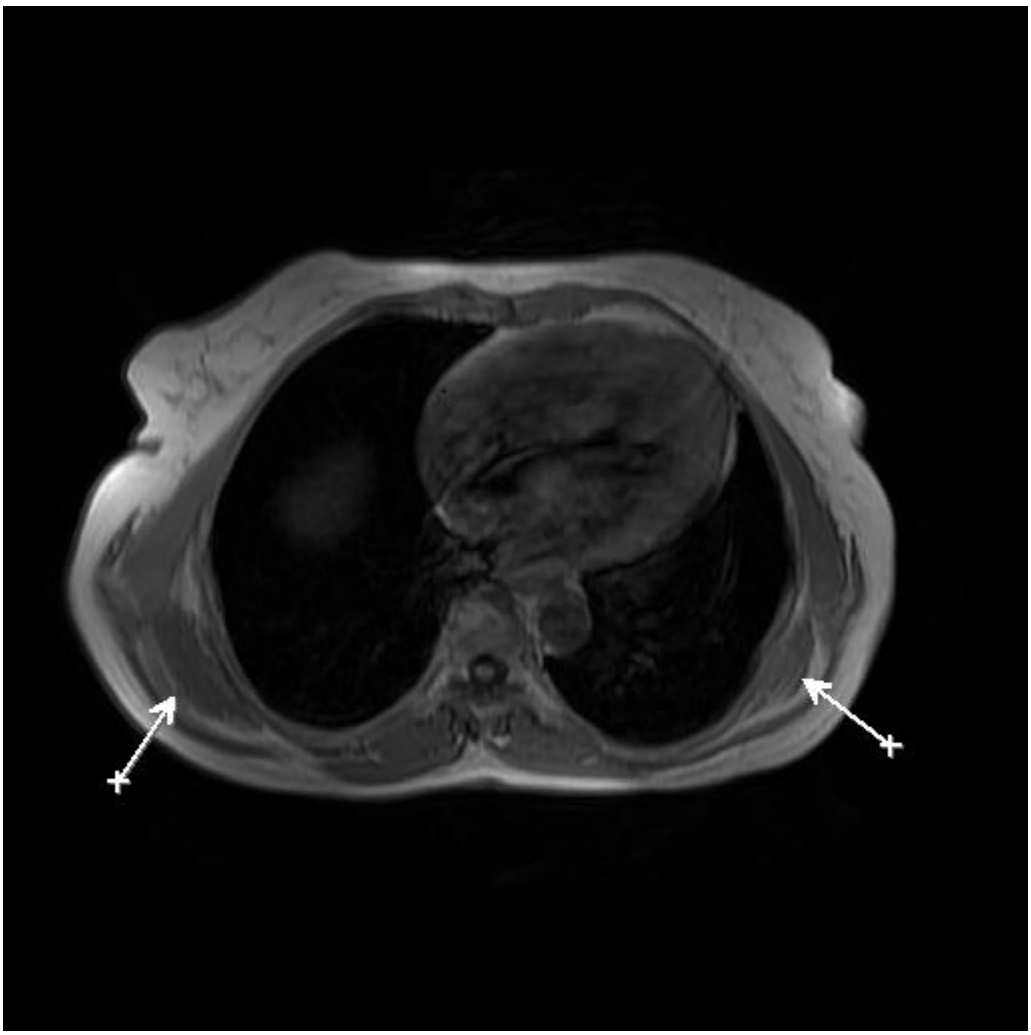

Figure 1

Figure 1. In Axial T1 Weighted (TR 215/TE 4.2) section, irregular bordered elastofibroma dorsi is detected in infrascapular region (arrows).

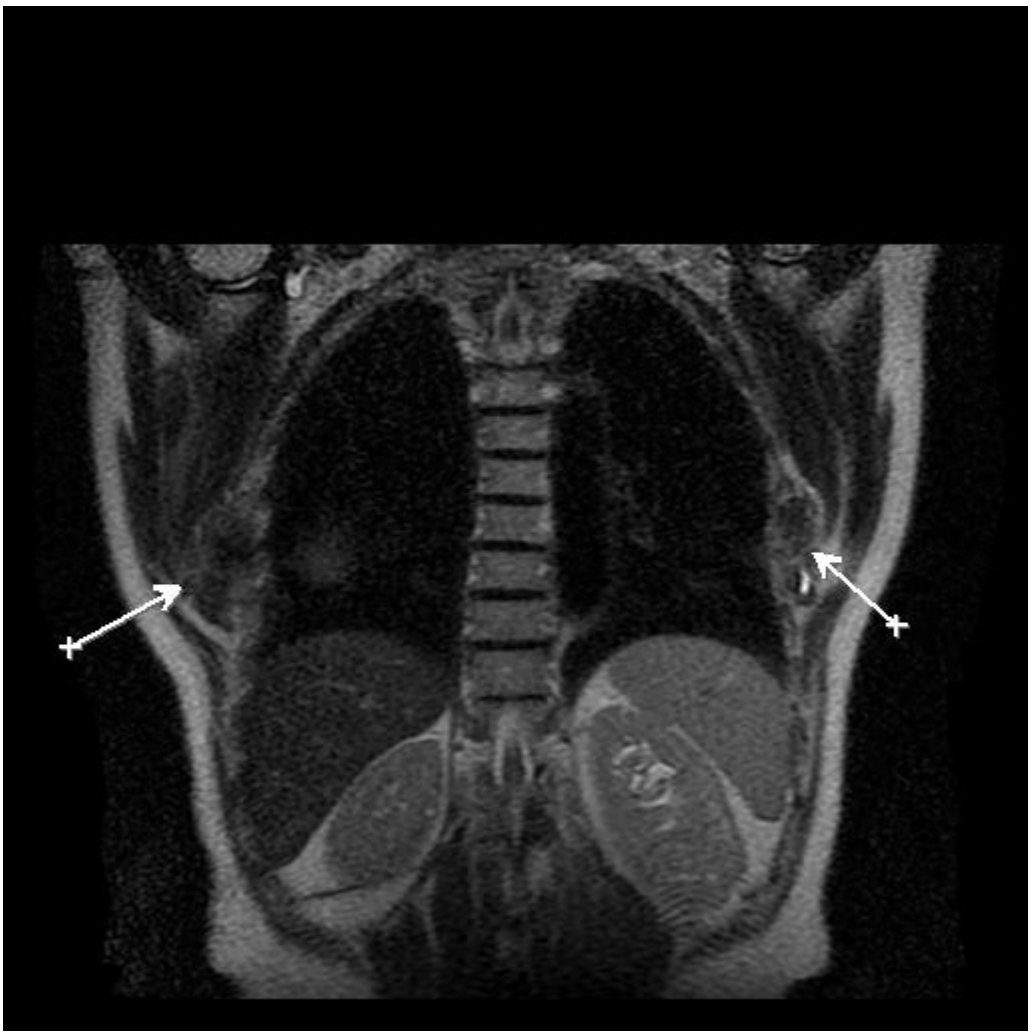

Figure 2

Figure 2. Heterogeneous solid tumor (isointense) with muscle structures is detected in Coronal T2 Weighted (TR 705/TE 78) section (arrows) at bilateral scapular region.

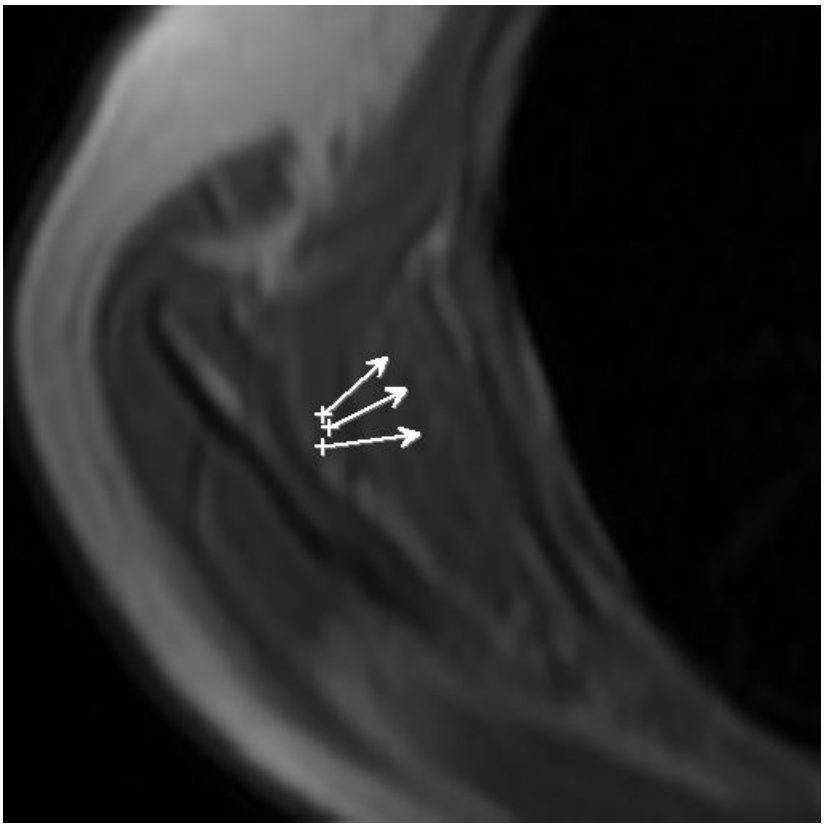

Figure 3

Figure 3. Fatty tissue foci is seen in the mass (magnified image) in Axial T1 Weighted (TR 215/TE 4.2) section.

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REFERENCES

1. Weiss SW, Goldblum JR. Enzinger and Weiss's soft tissue tumors. 4th ed. St Louis, Mo: Mosby, 247–346. 2001
2. Nagamine N, Nohara Y, Ito E. Elastofibroma in Okinawa: a clinicopathologic study of 170 cases. Cancer;50:1794–1805. 1982
3. Hisaoka M, Hashimoto H. Elastofibroma: clonal fibrous proliferation with predominant CD34-positive cells. Virchows Arch;448:195–199. 2006
4. Järvi OH, Saxén AE, Elastofibroma dorsi, Acta Pathol Microbiol Scand. 51 (Suppl. 144), 83–84. 1961
5. Pierce JC 3rd, Henderson R. Hypermetabolism of Elastofibroma Dorsi on PET–CT Am. J. Roentgenol., 183: 35 - 37. 2004
6. Kransdorf MJ, Moser RP Jr, Meis JM, Meyer CA. Fat-containing soft-tissue masses of the extremities. RadioGraphics;11:81–106.1991
7. Marin ML, Perzin KH, Markowitz AM. Elastofibroma dorsi**:** benign chest wall tumor. J Thorac Cardiovasc Surg;98:234–238. 1989

8. Brandser EA, Goree JC, El-Khoury GY. Elastofibroma dorsi: prevalence in an elderly patient population as revealed by CT. AJR Am J Roentgenol; 171:977–980. 1998
9. Jarvi OH, Lamsimies PH. Subclinical elastofibroma in the scapular region in an autopsy series. Acta Pathol Microbiol Scand [A];83:87–108. 1975
10. Kransdorf MJ, Meis JM, Montgomery E. Elastofibroma: MR and CT apperance with radiologic-pathologic correlation. AJR Am Roentgenol; 159:575-579. 1992
11. Naylor MF, Nascimento AG, Sherrick AD, and McLeod RA Elastofibroma dorsi: radiologic findings in 12 patients Am. J. Roentgenol. 167: 683 - 687. 1996
12. Giebel GD, Bierhoff E, Vogel J. Elastofibroma and pre-elastofibroma--a biopsy and autopsy study. Eur J Surg Oncol. 22(1):93-6. 1996
13. Soler R, Requejo I, Pombo F, Sáez A.Elastofibroma dorsi: MR and CT findings. Eur J Radiol.27(3):264-7. 1998
14. Massengill AD, Sundaram M, Kathol MH, el-Khoury GY, Buckwalter JH, Wade TP. Elastofibroma dorsi: a radiological diagnosis. Skeletal Radiol.22(2):121-3. 1993
15. Alouini R, Allani M, Harzallah L, Bahri M, Kraiem C, Tlili-Graies K.Elastofibroma: imaging features J Radiol.86(11):1712-5. 2005
16. Nishida A, Uetani M, Okimoto T, Hayashi K, Hirano T. Bilateral elastofibroma of the thighs with concomitant subscapular lesions Skeletal Radiol.32(2):116-8. 2003