Diagnosis of elastofibroma

Cuneyt Tetikkurt MD¹, Seza Tetikkurt MD², Nihal Bayar MD¹

C Tetikkurt, S Tetikkurt, N Bayar. Diagnosis of elastofibroma. *Can Respir J* 2008;15(4):217-218.

Elastofibroma is a relatively rare soft tissue mass. The lesion is probably reactive and occurs most commonly in the periscapular region. It is a degenerative benign neoplasm with the clinical appearance of a malignant tumour. The present report describes the case of a 70-year-old man with bilateral elastofibroma. The diagnosis was established with needle aspiration biopsy and positron emission tomography/computed tomography. The present case suggests that needle aspiration biopsy and positron emission tomography/computed tomography are highly useful in the diagnosis of this rare, benign tumour.

Key Words: *Elastofibroma; Mesenchymal tumours; Needle aspiration biopsy; PET/CT*

Elastofibroma is a rare, slow growing, ill-defined soft tissue tumour of the chest wall. It is commonly located beneath the rhomboid major and latissimus dorsi muscles. The tumour is usually unilateral (1). Recognition of the lesion is important because the differential diagnosis includes malignant tumours. We report a case of bilateral elastofibroma, in which needle aspiration biopsy and positron emission tomography/computed tomography (PET/CT) permitted the diagnosis of this rare, benign tumour, eliminating the need for preoperative histological examination.

CASE PRESENTATION

A 70-year-old male dentist presented with two painful masses located bilaterally in the right and left inferior periscapular region. The masses had enlarged slowly over the previous 12 months. The pain increased in intensity and radiated back bilaterally. The patient's medical and family history did not reveal any diseases. The patient did not smoke or use any drugs. Physical examination revealed a tender, firm mass with a diameter of 70 mm in the left infrascapular region, and a tender, firm mass with a diameter of 50 mm in the right infrascapular region. No associated lymphadenopathy was found. Initial investigations showed a normal blood count, bone profile, inflammatory markers and a normal chest radiograph. CT of the chest revealed two well-defined soft tissue lesions, with a striated appearance, measuring 70 mm × 20 mm on the left inferior scapular region and 50 mm × 15 mm on the right inferior scapular region. A needle aspiration biopsy was performed on both sides. The smear was characterized by a mixture of uniform spindle cells and very few mature adipocytes, with

Un diagnostic d'élastofibrome

L'élastofibrome est une masse relativement rare des tissus mous. Selon toute probabilité, la lésion est réactive et elle se produit surtout dans la région périscapulaire. C'est un néoplasme bénin évolutif à l'apparence clinique d'une tumeur maligne. Le présent rapport décrit le cas d'un homme de 70 ans atteint d'un élastofibrome bilatéral. Le diagnostic a été posé au moyen d'une aspiration à l'aiguille, d'une tomographie par émission de positrons et d'une tomodensitométrie. Le présent cas laisse supposer que l'aspiration à l'aiguille, la tomographie par émission de positrons et la tomodensitométrie sont hautement utiles pour diagnostiquer cette tumeur bénigne rare.

Figure 1) Positron emission tomography/computed tomography revealing low, diffuse ¹⁸F fluorodeoxyglucose uptake on both sides

fragments of collagen bundles and fibres. PET/CT images showed poorly circumscribed, bilateral soft tissue masses between the inferior tips of the scapulae and chest wall, with low-grade, diffuse ¹⁸F fluorodeoxyglucose uptake (Figure 1). Bilateral surgical excision of the lesions was performed. Postoperative histopathological examination of the resected tumours revealed scant fibroelastic proliferation, with abundant hyalinized collagen and entrapped mature adipose tissue, consistent with the diagnosis of elastofibroma. The patient was asymptomatic after surgery, with no recurrence of the masses.

¹Department of Pulmonary Diseases, Cerrahpaşa Faculty of Medicine, Istanbul University; ²Department of Pathology, Taksim Training and Research Hospital, Istanbul, Turkey

Correspondence: Dr Cuneyt Tetikkurt, Tanzimat Sok Serkan Apartment 8/16, Caddebostan 34827, Istanbul, Turkey. Telephone 212-414-32-17 or 216-360-19-77, fax 216-414-32-17, e-mail docmct@superonline.com

DISCUSSION

Elastofibroma, first described in 1961, is a benign, slow-growing mesenchymal soft tissue lesion (2,3). An incidental prevalence of 2% was found in an elderly population examined using chest CT, but an autopsy series found a frequency of 11.2% in men and 24.4% in women (4,5). The characteristic location is between the chest wall and the inferior tip of the scapula. Bilateral involvement occurs in only 10% of patients (6). The cause and pathogenesis are unclear, but it is believed that sub-clinical microtrauma may lead to reactive hyperplasia of elastic fibres, with a consequent increase in the production of fibrous tissue (7). Most patients are asymptomatic, but may present with a painless swelling – less than 10% of patients have pain (8). Plain radiographs may be normal or may show soft tissue density in the periscapular region. CT usually shows a heterogeneous soft tissue mass with poorly defined margins (9).

REFERENCES

1. Kara M, Dikmen E, Kara SA, Atasoy P. Bilateral elastofibroma dorsi: Proper positioning for an accurate diagnosis. *Eur J Cardiothorac Surg* 2002;22:839-41.
2. Järvi OH, Saxen AE. Elastofibroma dorsi. *Acta Pathol Microbiol Scand* 1961;144(Suppl 51):83-4.
3. Giebel GD, Bierhoff E, Vogel J. Elastofibroma and pre-elastofibroma – a biopsy and autopsy study. *Eur J Surg Oncol* 1996;22:93-6.
4. Brandser EA, Goree JC, El-Khoury GY. Elastofibroma dorsi: Prevalence in an elderly patient population as revealed by CT. *AJR Am J Roentgenol* 1998;171:977-80.
5. Järvi OH, Lämsimies PH. Subclinical elastofibromas in the scapular region in an autopsy series. *Acta Pathol Microbiol Scand [A]* 1975;83:87-108.
6. Kransdorf MJ, Meis JM, Montgomery E. Elastofibroma: MR and CT appearance with radiologic-pathologic correlation. *AJR Am J Roentgenol* 1992;159:575-9.
7. Machens HG, Mechttersheimer R, Göhring U, Schlag PN. Bilateral elastofibroma dorsi. *Ann Thorac Surg* 1992;54:774-6.
8. Greenberg JA, Lockwood RC. Elastofibroma dorsi: A case report and review of the literature. *Orthop Rev* 1989;18:329-33.
9. Hoffman JK, Klein MH, McInerney VK. Bilateral elastofibroma: A case report and review of the literature. *Clin Orthop Relat Res* 1996;245-50.
10. Domanski HA, Carlén B, Sloth M, Rydholm A. Elastofibroma dorsi has distinct cytomorphologic features, making diagnostic surgical biopsy unnecessary: Cytomorphologic study with clinical, radiologic, and electron microscopic correlations. *Diagn Cytopathol* 2003;29:327-33.
11. Patrikeos A, Breidahl W, Robins P. F-18 FDG uptake associated with Elastofibroma dorsi. *Clin Nucl Med* 2005;30:617-8.
12. Wasylw CW, Caride VJ. Incidental detection of bilateral elastofibroma dorsi with F-18 FDG PET/CT. *Clin Nucl Med* 2005;30:700-1.

Magnetic resonance imaging is the most useful diagnostic tool (10). The differential diagnosis includes desmoid tumours, neurofibroma and liposarcoma. Biopsy should, therefore, be undertaken as the confirmatory procedure, and to exclude sarcoma.

Recently, two cases of elastofibroma, in which PET/CT was used incidentally, were reported (11,12). PET/CT revealed low to moderate metabolic activity in these patients. In the present case, needle aspiration cytology and low-grade diffuse ¹⁸F fluoro-deoxyglucose uptake during PET/CT strongly suggested elastofibroma.

We believe that needle aspiration biopsy and PET/CT are useful, noninvasive procedures for the identification of elastofibroma. Recognition of this low, diffuse metabolic activity with consistent needle aspiration cytology will prevent the use of unnecessary medical, radiological or surgical interventions to establish the diagnosis.