

Elastofibroma dorsi: a forgotten cause of chest pain

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A 59-year-old woman presented with back pain in the inferior periscapular region during the previous year. At physical examination, she presented two palpable lesions in the posterior chest wall, only visible with shoulder movements (Figure 1).

On ultrasound, two heterogeneous masses adjacent to the thoracic wall were described (Figure 2), without

Doppler signal. Computed tomography (CT) revealed, in the subscapular region adjacent to the chest wall, two bilateral soft tissue masses (Figure 3). A MRI was performed, which showed two hypointense lesions on T1 and T2-weighted images, similar to the muscle, with hyperintense adipose tissue on T1-weighted images (Figure 4).

Both masses were totally excised and histological analysis revealed elastic fibres arranged like beads with

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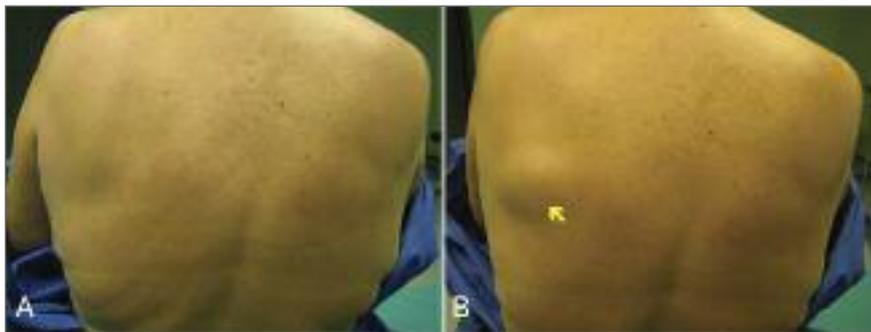


FIGURE 1. Physical examination - A) Anatomical position. B) Internal rotation of the shoulder. Palpable lesion on the chest wall put in evidence with shoulder movements (yellow arrow)

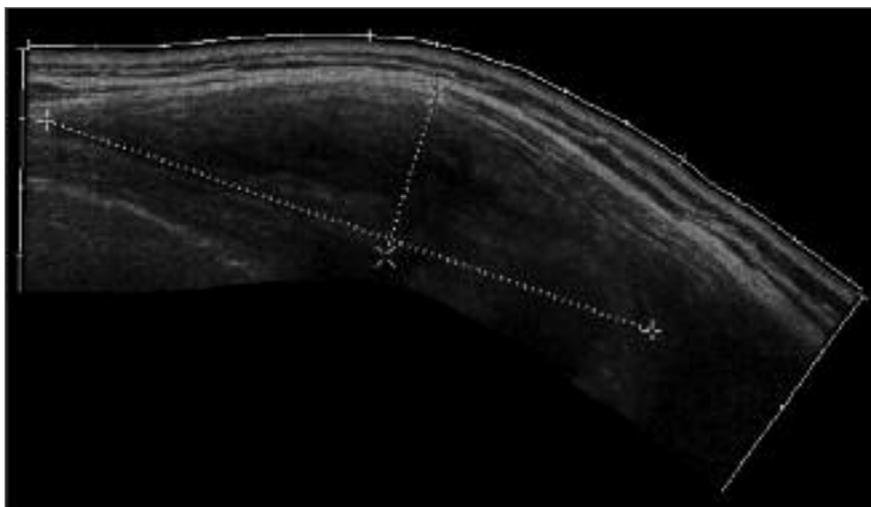


FIGURE 2. Ultrasound - Heterogeneous mass with alternating pattern of hypo and hyperechoic lines parallel to the thoracic wall

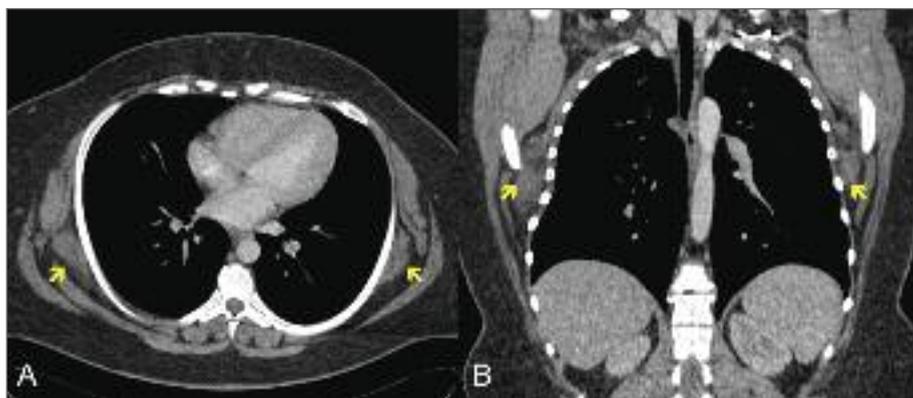


FIGURE 3. CT scan - A) Axial image. B) Coronal image. Mass in the subscapular region on both sides (yellow arrows) with a characteristic lenticular shape and density similar to muscle

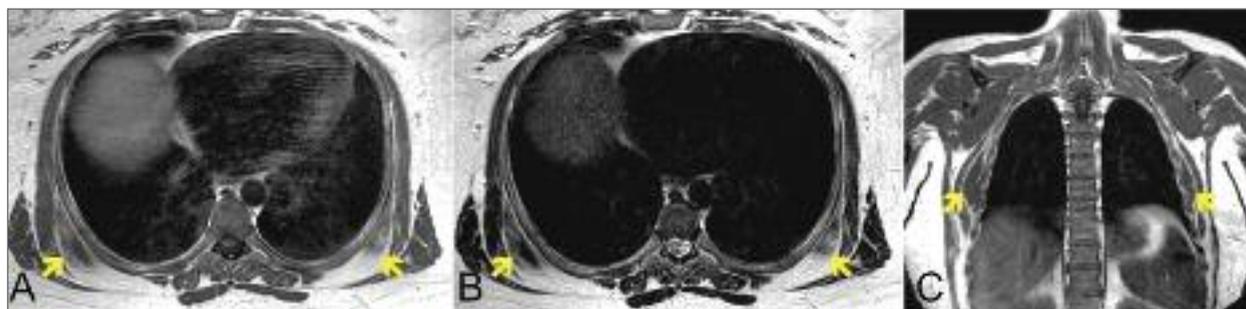


FIGURE 4. MRI – A) Axial T1- weighted image. Mass shows mixed signal intensities. B) and C) Axial and coronal T2- weighted images. The mass has an overall low signal intensity. These features reflect the histological composition of entrapped fat within a fibrous tissue (yellow arrows).

serrated edges and entrapped mature fat cells, which was consistent with elastofibroma dorsi.

Elastofibroma dorsi is a soft tissue mass first described in 1961 by Jarvi and Saxen¹. It has been considered a rare condition but studies reported a prevalence of 2% in asymptomatic patients diagnosed by CT and a prevalence of 24% in women and 11% in men in autopsy series².

It occurs most commonly beneath the rhomboid major and latissimus dorsi muscles subjacent to the inferior angle of the scapula, although others locations have also been reported. It is more common on the right and is bilateral in 10% of cases². It is more usually seen in women in the fifth decade of life.

The pathogenesis remains unclear but some authors suggested that elastofibroma is reactive to repeated mechanical friction between the chest wall and the tip of the scapula causing recurrent microtraumas and consequent hyperproliferation of fibroelastic tissue³. This is supported by the higher prevalence of elastofibroma

dorsi among manual labourers.

Histologically, lesions are composed mainly by hyalinized collagenous stroma and fat tissue in between³.

It has a slow growing behaviour and is asymptomatic in more than 50% of the cases, although it can be painful with shoulder movements. At physical examination, it may manifest as a palpable lesion on the chest wall.

Imaging studies are very useful for diagnosis.

Plain radiographs may be normal or may show soft tissue density in the periscapular region.

On ultrasound, it appears as a mass with alternating pattern of hypo and hyperechoic lines parallel to the thoracic wall, corresponding to fibrous and adipose tissue, which do not show Doppler signal.

CT shows a heterogenous soft tissue mass, lenticular shaped, and the absence of enhancement.

MRI is considered to be the investigation of choice and reflects the histological composition of entrapped

fat within a predominantly fibrous mass. Fibrous tissue is hypointense in T1 and T2-weighted images, similar to the muscle, while adipose tissue is hyperintense on the T1-weighted images and shows T2 intermediate signal⁴.

The differential diagnosis includes neurofibroma and liposarcoma. Biopsy should only be undertaken in patients who have no characteristic signs on imaging.

It does not require surgical treatment except in those patients with pain, functional limitation or for aesthetic reasons. It carries a low recurrence risk⁵ and no malignant transformation has been reported so far.

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