Elastofibroma Dorsi as a Source of Back Pain: A Case Report

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ABSTRACT:
Elastofibroma dorsi as a source of back pain: a case report
Objective: Elastofibroma dorsi (EFD) is a rare benign pseudotumour characteristically located at subscapular region. Although it is usually asymptomatic, it can present with swelling in the subscapular region, back pain and clicking sound with shoulder motion. In this case report we aimed to present a female patient with the diagnosis of bilateral elastofibroma dorsi.
Case Report: A 69-year-old woman consulted to our outpatient setting with back pain. Her complaint had started 15 months ago. A computerized tomography scan was performed and bilateral ill-defined masses were detected in subscapular region. These masses were found consistent with EFD. The patient did not consent surgical excision. Therefore she was treated conservatively.
Conclusion: In clinical practice, a diagnosis can be made through careful examination and patients can be treated medically or by the means of physiotherapy modalities.
Keywords: Back pain, elastofibroma, physiotherapy

INTRODUCTION

Elastofibroma dorsi (EFD) is a benign soft tissue pseudotumour that is typically located at subscapular area. While its etiology remains unclear, mechanical friction of scapula against the chest wall and genetic abnormalities have been considered as possible causes (1,2). It is a rare tumour mostly affecting female population and its prevalence increases in the elderly (3). It is usually asymptomatic and can be detected incidentally by imaging techniques that are performed for other conditions. However, EFD can also present with swelling, back pain and clicking with the shoulder movement. The diagnosis EFD could be made by radiological imaging or histological studies. In this study we will present a case report of a female patient with the diagnosis of bilateral EFD.

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CASE REPORT

A 69-year-old female patient consulted to our outpatient setting with upper back pain. Her complaints started approximately 15 months ago. The patient localized the pain between the scapulae and around lower thoracic vertebrae and described it as dull and ill-defined. The pain was exacerbated by shoulder and upper trunk movement. The pain was evaluated by Visual Analogue Scale (VAS) and scored 6 out of 10 by the patient. Recent history of trauma was absent. Regarding the quality, there were not any neuropatic or inflammatory aspects of pain. The patient had no history of chronic illnesses.

In physical examination, there was tenderness on bilateral subscapular regions upon palpation. There was no spinous process tenderness. No masses or lesions could be palpated or inspected on the back. Pain could be elicited while performing shoulder movement. Otherwise, shoulder and trunk range of motion (ROM) examination did not show any pathological findings.

X-ray radiographs of chest and thoracic vertebrae showing anteroposterior and lateral views were taken. Osteodegenerative changes were seen in thoracic vertebrae and probable height losses were suspected in vertebral bodies. Then, a computerized tomography (CT) scan of thorax was performed to further assess the tissue structures around the painful area and make sure that height losses of vertebral bodies are present. Bilateral ill-defined masses were detected in subscapular region sizing 6x3 cm on the right and 5x2 cm on the left (Figure-1). These masses were found consistent with elastofibroma dorsi.

The patient was informed about EFD and different treatment procedures were explained. She did not want to undergo a surgical operation and then, conservative approach was planned. The patient underwent conventional transcutaneous electrical nerve stimulation (TENS) therapy, 100 Hz, 20 minutes per day for 10 days. In addition, she was prescribed nonsteroidal anti-inflammatory drugs (NSAIDs) and exercises for shoulder and upper trunk regions. These exercises included active range of motion movements, stretching and strengthening.

She was evaluated again after the treatment process and told that the pain had responded to the treatment and diminished. She scored 2 out of 10 in VAS. Then, she was admitted for clinical follow-up.

DISCUSSION

Elastofibroma dorsi is an uncommon, benign, solid soft tissue pseudotumour which is usually located at the subscapular area between muscle groups of latissimus dorsi and serratus anterior. Its name derives from its containment of irregular elastin fibers in stroma (1). Two major predisposing factors have been proposed so far one being mechanical other being genetic. First, friction of scapula against the ribs due to continuous manual labour involving shoulder movement has been suggested as an underlying cause (1-3). Secondly, in a study researching genetic abnormalities in EFD cases, DNA copy number changes were observed in tumor tissue, mainly at chromosomal sites Xq12-q22 and 19 (2). Its prevalence was found 1.66% in a study that assessed incidental detection of the condition by 18-fludeoxyglucose (FDG) – positron emission tomography (PET).
tomography (PET)/CT scanning in 1751 patients (4). Females are more prone to EFD and it usually occurs in elderly people (3).

Patients with EFD are usually asymptomatic. If present, patients might suffer from swelling in subscapular area, pain, clicking sound with shoulder movements and shoulder stiffness. In physical examination, the tumour can be palpated around the inferior tip of scapula (1,5). The palpation can be performed more accurately while the patient flexes the arm anteriorly. While EFD is mostly located in its typical subscapular region, other sites of tumour occurrence have been reported (5). In our case, although masses in subscapular regions could not be palpated, other symptoms and signs such as pain with shoulder motion were present.

Ultrasonography (USG), CT, magnetic resonance imaging (MRI) and PET/CT are all of diagnostic value and EFD has a well-described image on all those modalities (6). USG can detect the tumour in its typical subscapular location, usually as an inhomogeneous fasciculated mass. With CT, inhomogeneous fasciculated mass isodense to neighbouring muscle tissue and containing hypodense fat strands can be seen. Similarly, on MRI fat strands are hyperintense on isointense surface of fibroelastic tissue on both T1 and T2 sequences (7). USG is a noninvasive and inexpensive technique that can reveal the tumour’s characteristic fasciculated image. CT and MRI can be reserved for undiagnostic USG, suspicion of malignancy and observation of adjacent bone and soft tissue structures that can also be the sources of pain. In our patient, CT scan was performed before USG to assess osseous structures in terms of degenerative or osteoporotic changes due to older age of patient. Since it successfully detected the tumour, further imaging was omitted.

The diagnosis can be verified by biopsy and histological study of specimen. In microscopic study, elongated and round-shaped elastin fibers, collagen fibers, fat tissue and fibroblasts can be seen (5,8). Preoperative biopsy should only be done when CT or MRI indicates possibility of a malignant tumour. Otherwise, malignant transformation of EFD has not been reported and preoperative histological study is unnecessary (8). For our patient did not undergo surgery, histological diagnosis was absent in our case.

There are many medical conditions that could present as shoulder and upper back pain. These conditions are thoracic vertebral spondylosis, osteoporosis, trauma, herniated intervertebral disc, myofascial pain syndrome, fibromyalgia and rheumatological and infectious conditions. On the other hand, other tumoral conditions that could present in the subscapular region are lipoma, desmoid tumor and soft tissue sarcoma and metastasis. These tumors can be differentiated from EFD by the means of radiological findings because they do not show characteristic fasciculated pattern of EFD in MRI or CT (6).

The treatment of EFD is surgical excision of the tumour. Consensus regarding the decision and the timing of the surgery cannot be found in literature. However some surgical centers have proposed algorithms. According to those, if the patient is symptomatic, the tumour is larger than 5 cm and there is radiological appearance consistent with malignancy, surgical excision is treatment of choice (8). On the other hand, if the patient has no complaints, conservative approach can be chosen and the tumour can be clinically followed. Radiotherapy can be chosen for high-risk patients for surgery.

Elastofibroma dorsi is a rare cause of back pain and cannot be frequently seen in physical medicine and rehabilitation (PMR) settings. EFD can be considered as a differential diagnosis once a mass palpated in the subscapular area. Thus, a careful physical examination is of importance.

Conflict of interests: There is no conflict of interest.
REFERENCES


