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Case Report

Shoulder Pain as the First Symptom of Advanced Breast Cancer

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Abstract

Shoulder pain is one of the most common orthopaedic complaints in clinical practise. Its high prevalence makes it difficult to distinguish between potentially harmful disorders and other more benign pathologies, so clinicians must pay attention to the well-known red flags.

The authors present an atypical case of shoulder pain in which the adequate knowledge of red flags allowed the diagnosis of a systemic disease.

Thirty-one-year-old female suffering with severe shoulder pain on physical examination and an axillary mass. Imaging studies suggested it to be a metastatic lesion. Further exams and biopsies were obtained, revealing a poorly-differentiated malignancy, positive for vimentin and cytokeratin, confirmed to be a breast malignancy. This clinical report alerts orthopaedists to the need of valuing red flags in order to adequately advise their patients.

Introduction

Shoulder pain constitutes a highly important complaint as it can cause limitation in daily routine activities and disturb sleep [1].

It is responsible for about 16% of all musculoskeletal complaints and has a self-reported prevalence of about 16-26% in the general population [1-3].

Such a high prevalence makes it difficult to distinguish between potentially harmful disorders or other more benign pathologies, so clinicians must pay attention to the well-known red flags, namely, symptoms of systemic disease, lymphadenopathies, history of cancer, neurological deficit, bony tenderness or a palpable mass [1].

The authors present an atypical case of shoulder pain in which the adequate knowledge of red flags allowed the diagnosis of a systemic disease.

Case Report

Thirty-one-year-old female referred to our Orthopaedic Centre with complaints of severe two-month duration shoulder pain.

The patient reported a past history of depression and a traumatic lumbar fracture more than 10 years before. The pain, which had no mechanical characteristics, started insidiously and became more severe.

On physical examination, the patient had complete range of motion of the shoulder and cervical spine. During palpation, an axillary mass was noted and an ultrasound obtained, revealing a nodular lesion in the belly of *teres* minor (Figure 1). It was decided to obtain a magnetic resonance imaging which suggested the mass to have characteristics of a metastatic lesion (Figure 2).

A biopsy was planned and the pathology analysis revealed a poorly-differentiated malignancy, positive for vimentin and cytokeratin.

The PET-scan showed hyper metabolic areas in left arm soft-tissues, left cervical region, left latissimus dorsi and left breast (Figure 3).

In suspicion of a breast malignancy an ultrasound guided-biopsy of three nodular lesions was obtained. The pathology analysis was similar to the one of the shoulder mass, with some cells positive for anti-mammaglobin antibody, confirming the suspicion of a breast malignancy.

After complete workout the malignancy was staged as cT4bN+M1 and the patient was proposed to initiate palliative chemotherapy with paclitaxel and carboplatin.

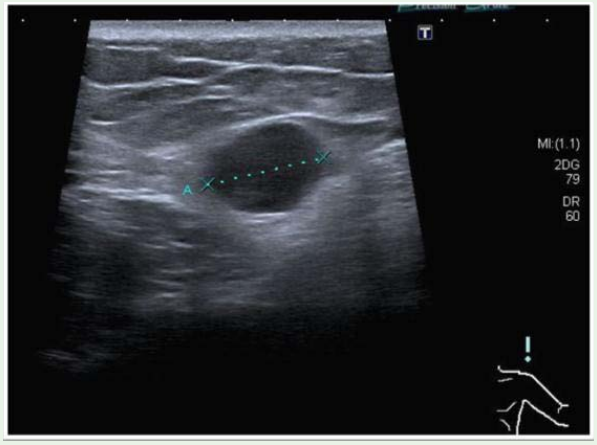

Figure 1: Ultrasound showing a nodular lesion in the belly of *teres* minor.

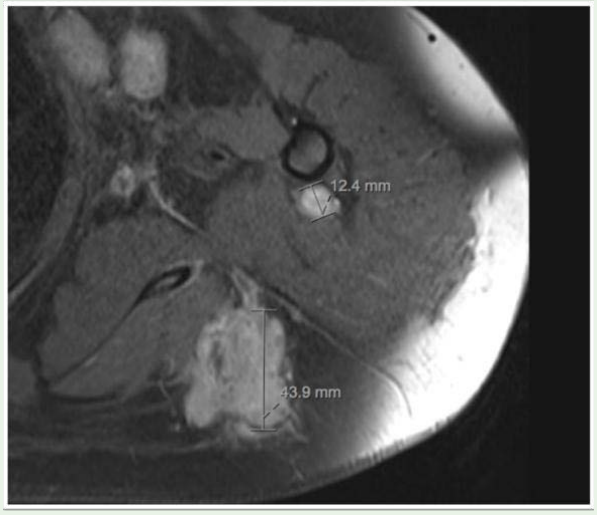

Figure 2: MRI (axial view) showing and solid mass with suspicious characteristics, along with a smaller lesion near the humerus.

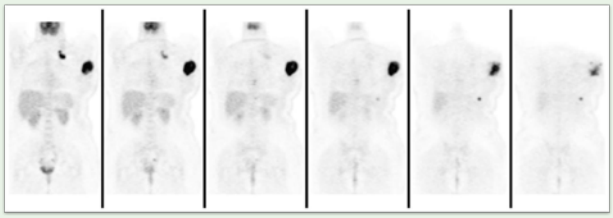

Figure 3: PET scan showing hyper metabolic areas in left arm soft-tissues and left breast.

Discussion

Shoulder pathology is the third most common musculoskeletal presentation in primary care [1,4]. Upper limb and shoulder pain can be caused by a variety of medical conditions, ranging from mechanical pain caused by musculoskeletal structures, such as the cervical spine and the shoulder, to non-mechanical pain related to referred pain from viscera or metastatic lesions, for example [5].

Apart from the multiplicity of possible causes, shoulder pain creates further diagnostic problems as pathologies and their clinical manifestations vary among patients. Additionally, pathologies often coexist which contributes to misdiagnosis [6].

In order to adequately evaluate a patient complaining of shoulder pain, one must assess the clinical history in order to understand the onset of the pain, its relation to movement and the possible existence of an eliciting factor [1,3].

Physical examination is a mandatory part of the evaluation. All basic parts of a physical examination should be included, namely: inspection (range of motion, muscle wasting, deformities, swelling); palpation (tenderness, crepitus, masses); specific tests, which can guide the diagnosis, orientating for a rotator cuff tear or instability, for example [1,3].

Attention must also be paid to red flags, as they alert to the need of further workout. Red flags for shoulder pain include signs and symptoms of systemic disease, lymphadenopathies or other unexplained masses, past history of cancer, inflammatory signs, neurological lesions, recent trauma with acute disabling pain or bone tenderness.

In this case, the alertness for the red flags allowed the suspicion which led to the diagnosis of an advanced breast cancer [1].

This patient had shoulder pain due to soft tissue and skeletal muscle metastasis. The latter are rare in cancer patients, with an incidence 0.03 to 17.5% in autopsy studies but a much lower incidence in clinical practice [7].

Conclusion

This clinical report alerts orthopaedists to the need of valuing red flags in order to adequately advise their patients. This specific patient had shoulder pain as initial manifestation of breast cancer, making the orthopaedist the first doctor she saw.

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