Case report

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Unilateral painful, swollen and erythematosus knee. Case report.

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Abstract

Musculoskeletal ultrasound (US) is gaining an increasing role in the assessment of a variegate set of joint and periarticular soft tissues abnormalities in rheumatology. In addition, US represents a useful technique in guiding local procedures such as aspiration of fluid collections and injections within the joints and periarticular musculoskeletal structures.

We recently performed US in a patient with unilateral painful, swollen and erythematosus knee. Pre-patellar bursitis was demonstrated, without any signs of intra-articular abnormalities. US-guided aspiration of local effusion was performed; synovial fluid analysis demonstrated septic bursitis. Appropriate treatment determined the complete remission.

Keywords: Ultrasound, prepatellar bursitis

Introduction

Knee pain represents a common occurrence in clinical practice and can be due to several causes such as anatomic dysmorphism of the knee joint, inflammatory and structural arthropaties, trauma (ligamentous sprains, meniscal tear) and inflammation of local burses [1].

Musculoskeletal ultrasound (US) is gaining an increasing role in the imaging assessment of joint and soft tissues abnormalities in degenerative and inflammatory rheumatic diseases, being able to define the presence of structural and inflammatory abnormalities. US has demonstrated to be useful particularly in the evaluation of knee joint pathology, due to the wide local acoustic windows which allow a good visualisation of different anatomical structures (joint, tendons, bursae). In addition, US represents a useful technique in guiding injections at the level of the knee [2].

The aim of this case report is to describe a case of pre-patellar bursitis in a women with unilateral painful, swollen and erythematosus knee, assessed with US.

Case Report

A 49 year-old woman presented with right knee erythema, pain, and swelling. There were not previous joint diseases, trauma, cutaneous injury, or infection. She was affected by diabetes mellitus, discontinuosly treated with oral antidiabetic drugs. Her erythrocyte sedimentation rate was 109 mm/h, the C-reactive protein was 123, and other blood tests were normal. An US examination of the involved knee was performed and showed effusion and synovial hypertrophy (fig 1a) in the pre-patellar bursa, without any signs of intra-articular abnormalities. By US-guided aspiration of the bursa (fig 1b), 50 ml of yellow-coloured, murky fluid was collected. The analysis of the fluid showed > 100.000 leucocytes/mm^3 (80% neutrophils); culture resulted positive for staphylococcus aureus. Teicoplanin treatment (400 mg i.v./daily) was started with progressive improvement of clinical condi-

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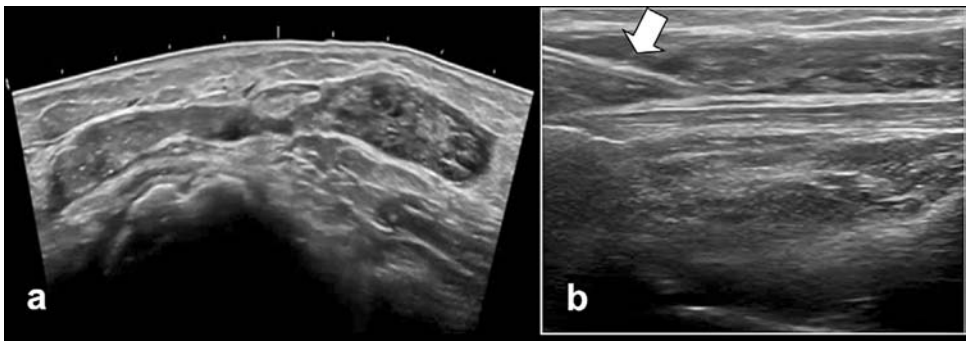


Fig 1.

tions. A second US, 1 week after, illustrated an evident reduction of bursal involvement. The patient had a complete recover of the clinical symptoms within 1 month, with US signs of remission at the follow-up. US is the imaging modality of choice in the diagnosis of knee prepatellar bursitis and early imaging including US-guided aspiration of the bursa is helpful in the definition of aetiological diagnosis and in the establishment of appropriate treatment [2-5].

Discussion

Knee pain is a common complaint in clinical practice; the causes can be represented by traumatic, inflammatory and structural bone disorder, joint anatomic abnormalities, inflammation of local tendons and synovial bursae (suprapatellar, prepatellar, superficial infrapatellar, deep infrapatellar, pes anserine gastrocnemius-semimembranosus bursae) [1]. The synovial bursae are virtual cavities which are not visible by imaging modalities in healthy subjects. The prepatellar bursa is situated anterior to the lower pole of the patella and the origin of the patellar tendon [2]. Prepatellar bursitis may be induced by several causes such as infections, gout, rheumatoid arthritis, tuberculosis, trauma, minor injuries.

In the last years US has become a relevant imaging tool in the assessment of soft tissue in rheumatic disease, due to the technological improvement and to its advantages, being it non-invasive and well-accepted by patients; in addition, it has low running costs, it needs short examination time and consents a multiregional assessment [6-9]. Furthermore US represents a good guide in local injection of joint and periarticular tissues.

Few studies investigated the role of US in the evaluation of local synovial bursae in patients with knee pain [2-5].

By using US, Uson et al investigated pes anserinus insertion (PA) and subcutaneous medial knee fat in 37 women with a clinical diagnosis of pes anserinus tendino-bursitis (PATB) syndrome [4]. Anserine tendinitis was found in only one symptomatic knee; pes anserine bursitis was present in two pain knees and in one asymptomatic knee. On the basis of their results, the authors concluded that the majority of patients examined didn't present US features of bursitis.

In 2005, 26 patients with knee osteoarthritis (OA) with clinically diagnosed pes anserinus tendinitis or bursitis (PATB) syndrome were evaluated, by using US, to determine the correlations between the US findings and the response to local corticosteroid injection [5]. In 17 patients, triamcinolone acetonide was injected in the anserine bursa area. US examination showed evidence of PATB in only 2 patients (7.7%). Among the patients who presented a good response to the injection, the best response was observed in the 2 patients who showed US evidence of PATB; thus the authors concluded that US can be considered a useful tool for guiding treatment in PATB syndrome in OA patients.

More recently, Grover et al [3] described a case of a 56-years-old male with polymyositis with an experience of multiple previous acute gouty attacks of the right knee and left foot. During the recovery the patient developed pain and swelling on the medial region of his left knee; both US and magnetic resonance (MRI) individualized a soft tissue mass that was ultimately secondary to gouty inflammation of pes anserine bursa.

In our paper, we presented the case of a 49 year-old woman with right knee erythema, pain and swelling. US was performed and showed the presence of inflammation on prepatellar bursa with evidence of effusion and synovial hypertrophy. US-guided aspiration was performed and synovial fluid analysis showed a septic bursitis. The additional US examinations that were performed after starting treatment showed a progressive remission of bursal involvement. In conclusion, US may be considered a useful tool in the assessment of prepatellar bursa pathol-

ogy, a good guide for the aspiration of the bursa, and can contribute to the definition of aetiological diagnosis and to establish appropriate treatment of bursitis.

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