



Brief clinical history:

A 44-year-old man with no relevant medical history was admitted to the emergency department (ED) for pain and inflammation in the right knee for several days without fever, and without improvement despite treatment with ibuprofen.

Misleading elements:

Case study of diagnosis and treatment of a patient with deep infrapatellar bursitis using point of care ultrasound (POCUS). In this case, bedside ultrasound performed by emergency physician (EP) was a fundamental tool for the diagnosis and treatment of the patient , and demonstrates that musculoskeletal POCUS performed by the EP is a useful technique in patients with suspected injuries and diseases of the knee joint, especially in the presence of cystic formations. We have an ultrasound-Sonosite M-Turbo, HFL50 probe of between 6 and 15 MHz.



Figure 1: An anechoic image with well-defined edges below the patellar tendon (longitudinal view).

Helpful details:

The knee presented swelling in the entire anterior face, with local inflammatory signs and painful limitation of flexion-extension. The EP performed an bedside ultrasound that showed an anechoic image (figure 1), with well-defined edges below the patellar tendon, in the form of a tear, which separated it from the fat of Hoffa and whose vertex was inserted between the patellar tendon and the tibia, compatible with deep infrapatellar bursitis (figure 2). An ultrasound-guided evacuation with lateral access to the patellar tendon was performed, followed by infiltration with corticosteroids. There was a rapid improvement of the symptomatology. The analysis of the joint fluid showed no crystals or germs, and the cell count was normal.



Figure 2: Distended deep infrapatellar bursa (transversal view).

Differential and actual diagnosis:

Deep infrapatellar bursitis should be differentiated from microfractures in the tibia, osteochondritis dissecans, Hoffa disease, patellofemoral joint dysfunction, mucoid degeneration of the infrapatellar tendon; and in adolescents, with Sinding-Larsen Johansson syndrome and Osgood-Schlatter disease.

Educational and/or clinical relevance:

The inflammation of the synovial bags is a very frequent disease among soft tissue rheumatisms and frequent cause of consultation in ED. Considering its location, we found that the involvement of the infrapatellar bursa in the knee is called superficial and deep infrapatellar bursitis (less frequent). The superficial one is between the patellar tendon and the skin, the deep one is located between the patellar tendon and the antero-superior tuberosity of the tibia. The inflammation of the superficial bursa is related to repetitive friction movements in people who kneel. The inflammation of the deep pocket is more frequent in the corridors and in the spondyloarthropathies, little symptomatic and more difficult to diagnose, sometimes confused with intra-articular effusion due to the swelling it produces. The treatment consists of anti-inflammatory drugs and rest, and local infiltration with steroids, if there is no improvement.

The incorporation of POCUS in ED not only reduces diagnostic errors and general attention times; it also improves the effectiveness of EP and facilitates the early diagnosis of multiple pathologies, including musculoskeletal. Therefore, it would be convenient to establish training programs that, following quality criteria, guarantee the safety and effectiveness of the ultrasound performed by EP.