



Case Report

Lipoma arborescens of the knee: a case report^{☆,☆☆}

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ABSTRACT

Case report of a female patient of 26 years who complained of pain and recurrent episodes of joint swelling in his left knee about 10 years ago. After anamnesis, physical examination and radiographic imaging and magnetic resonance were diagnosed with arborescent lipoma of the knee, and the patient underwent arthroscopic treatment for resection of the lesion. Postoperatively the patient was referred to physical therapy rehabilitation with good evolution.

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Lipoma arborescente de joelho: relato de caso

RESUMO

Relato de caso de um paciente do sexo feminino de 26 anos que apresentava queixas de dores eventuais e episódios recorrentes de derrame articular no joelho esquerdo havia aproximadamente 10 anos. Após anamnese, exame físico, exames radiográficos e exames de imagem por ressonância magnética foi firmado o diagnóstico de lipoma arborescente de joelho. A paciente foi submetida a tratamento artroscópico para ressecção da lesão. No pós-operatório foi encaminhada para reabilitação fisioterápica, com boa evolução.

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Introduction

Arborescent lipoma is a rare benign intra-articular lesion characterized by diffuse replacement of synovial tissue by mature adipocytes, causing a villous lipomatous proliferation of the synovial membrane.¹

Typically, this is a monoarticular condition. The knee is the most commonly affected joint. The highest incidence of

presentation occurs in the fourth and fifth decades of life, with no predilection for gender.² The typical clinical presentation consists of repetition effusions, often with large volume, accompanied by a diffuse and intermittent pain. In the knee the condition commonly affects the suprapatellar pouch, with a soft consistency on palpation. We should suspect the diagnosis in a patient whose clinical history is of frequent joint effusions, occasional pain and increased volume in the suprapatellar aspect. Radiographic studies may be normal or show

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Fig. 1 – Increased volume in the left knee.

nonspecific changes, such as increased soft tissue or even degenerative changes.² Magnetic resonance imaging (MRI) is the primary diagnostic test. The image of a mass of synovial villous architecture, with isointensity with subcutaneous fat, is considered by some authors as pathognomonic for arborescent lipoma, which enables the establishment of diagnosis even before the results of the anatomopathological examination. The recommended treatment is open or arthroscopic synovectomy, with very rare cases of recurrence of pathology.³

Case report

Female, 26 years old. The patient reported that, since adolescence, had episodes of swelling and occasional pain in the left knee without any triggering traumatic event. Denied a history of giving way or locking of the joint, having seen several doctors; sometimes, she underwent arthrocentesis without diagnosis. Her symptoms were reasonably well controlled with physical therapy to maintain muscle control and range of motion. On physical examination, she had bilateral *genu valgus*, with swelling in the left knee (Fig. 1). She also presented a palpable mass of soft and painless consistency in the lateral aspect, and a positive key sign inferring moderate joint effusion, range of motion with audible crackling in flexion-extension arc and pain with compression of the patellofemoral joint. The maneuvers in search of ligament and meniscal lesions were negative, with no other relevant signs or symptoms. The patient had no family or personal history worthy of note. Plain radiographs of the knee showed reduced medial joint space, subchondral sclerosis, and reactive osteophytes (Fig. 2).

MRI demonstrated a large joint effusion, thickening of synovial membranes with enhancement after contrast medium with finger-like aspect and lipomatous content on the lateral aspect of the joint, besides degenerative chondral compartmental changes and degeneration in the body of the medial meniscus (Fig. 3). After evaluation of the physical examination and laboratory tests, the patient underwent videoarthroscopy with use of anterior-inferior and anterior-superior portals to resect the lesion and to obtain material for anatomopathological examination, with confirmation of

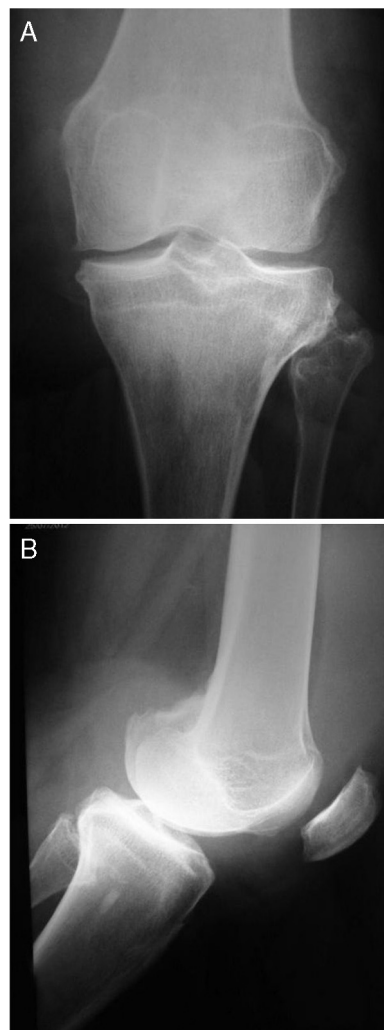


Fig. 2 – Radiographs of the left knee in AP (A) and lateral views showing degenerative changes (B).

the diagnosis of lipoma arborescens. Besides compartmental degenerative lesions, the arthroscopic examination revealed synovitis of pedunculated appearance and a reddish, diffuse color, with predominance in the lateral gutter (Fig. 4).

A drain suction was applied for 24 h, collecting a volume of approximately 350 mL of blood. The patient was discharged without complaints the next day after the procedure. The physical therapy was initiated immediately after discharge, aiming to maintain the range of motion and muscle control, and the patient was allowed to support the weight as tolerated. Thirty days after surgery, the patient was allowed to return to her usual activities. In her latest revision (approximately three months postoperatively), the patient was asymptomatic with minimal joint effusion. In the first year, the follow-up will be semiannual; subsequently, the patient will be annually accompanied for two years.

Discussion

Arborescent lipoma is a condition characterized by diffuse replacement of subsynovial tissue by mature adipocytes, with



Fig. 3 – Magnetic resonance imaging in sagittal (A), coronal (B) and axial (C) slices, depicting the villous and lipomatous appearance of the synovial membrane.

prominent villous transformation.⁴ Its etiology is unknown, although in some cases this problem is associated with certain conditions, such as degenerative joint disease, diabetes mellitus, rheumatoid arthritis, and psoriatic arthritis, suggesting the possibility of a reaction process.¹ Popliteal cysts were noted in approximately 20% of reported cases.⁴ Although the knee is the most commonly affected joint, there are also reports of involvement in the wrist,^{4,5} elbow,^{4,6} shoulder,^{4,7} ankle,^{4,8} and hip.^{4,9} The differential diagnosis of arborescent lipoma of the knee includes pigmented villonodular synovitis, intra-articular lipoma of the knee, synovial chondromatosis, synovial hemangioma, and rheumatoid arthritis.^{1,4} Its insidious clinical course, supplemented by tests such as radiography and mainly MRI, virtually confirms the diagnosis. A synovial mass of villous architecture depicting isointensity with subcutaneous fat (hyperintense on T1, which is abolished in the sequences with fat saturation) can be seen on MRI. There is no contrast uptake by the lesion, which

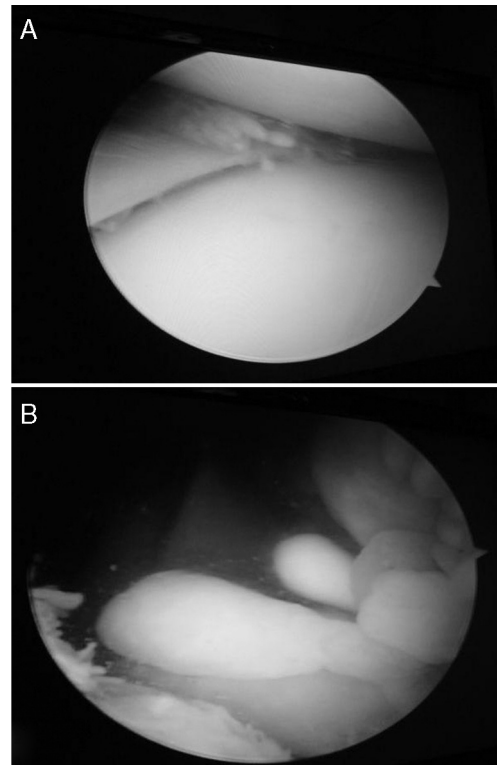


Fig. 4 – Intraoperative macroscopic appearance of the lesion (A and B): diffuse villous projections with reddish color, located predominantly in the lateral gutter.

excludes other inflammatory or neoplastic processes of the synovia. However, some intra-articular diffusion of the contrast into the joint fluid, with insinuation between the sinovial lipomatous villous projections, can be seen, giving rise to small areas of uptake.¹ Nowadays, with the more widespread use of MRI, it has become more easier to diagnose this pathology.

The open or arthroscopic synovectomy is considered curative by most authors. Although there are few published cases of arthroscopic synovectomy, these showed good progress during a follow-up period of up to two years,² with lower morbidity when compared to cases where open conventional treatment was done.¹ We found no major technical difficulties for the arthroscopic procedure, perhaps because the specific localization of the pathology in the anterior aspect of the knee. The use of the anterior-superior accessory portals greatly facilitated the procedure, with little increase in morbidity for the patient. A drain suction should be applied for a period of approximately 24 h after the surgery, in view of the bleeding that occurs after the procedure.

In the case described, the location of the pathology and its monoarticular feature, as well as the description of symptoms, coincide with the literature, despite the young age of the patient. With a follow-up of about three months, it can be concluded so far that the proposed treatment was appropriate, since it was possible to do the synovectomy of the entire lesion without adding the usual damage of an open surgery.

Conflicts of interest

The author declares no conflicts of interest.

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