



Case report

Arthroscopic treatment of synovial chondromatosis of the ankle[☆]



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ABSTRACT

Synovial chondromatosis is a rare proliferative disease, characterized by the occurrence of metaplasia in the synovium of the joints. These lesions become pedunculated; with the evolution of the disease they become detached, leading to intra-articular loose-bodies. It occurs more frequently in males between the third and fifth decades of life, usually affecting large joints such as the knee and hip. Smaller joints, such as the ankle, are less frequently affected. Patients report articular pain, blockage, and limited range of motion caused by the loose fragments. As the disease progresses, the joint undergoes degenerative changes. This report describes a case of synovial chondromatosis of the ankle, treated by arthroscopy. The patient, a 59 year-old male, complained of pain and swelling of the left ankle. Physical evaluation showed limited tibiotarsal mobility (plantar flexion of 20° and dorsiflexion of 5°). After physical and imaging evaluation, the patient underwent ankle arthroscopy due to impingement of the joint, with limitation of mobility. Arthroscopic treatment allowed easy access to the joint, removal of loose bodies, and partial synovectomy, with low morbidity and early rehabilitation. The final prognosis was excellent.

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Tratamento artroscópico de condromatose sinovial do tornozelo

RESUMO

A condromatose sinovial é uma doença proliferativa, rara e caracterizada pela ocorrência de metaplasia na sinovial das articulações. Essas lesões tornam-se pediculadas e à medida que a doença evolui, as lesões se soltam, dão origem a corpos livres intra-articulares. A prevalência é maior em homens entre a terceira e quinta décadas de vida, atingindo normalmente

Palavras-chave:

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grandes articulações como o joelho e o quadril. Articulações menores, como o tornozelo, são afetadas com menos frequência. Os pacientes referem dor articular, bloqueio e limitação da mobilidade causados pelos fragmentos livres. Com o evoluir da doença, a articulação sofre alterações degenerativas. Os autores apresentam um caso clínico de condromatose sinovial do tornozelo, tratado por artroscopia. O doente, do sexo masculino e de 59 anos, referia queixas de dor e edema do tornozelo esquerdo. Ao exame físico, apresentava limitação da mobilidade da tibiotalar (flexão plantar e dorsiflexão de 20° e 5°, respectivamente). Após avaliação clínica e estudo imagiológico, foi proposta artroscopia do tornozelo para tratamento de pinçamento articular com limitação da mobilidade. O tratamento artroscópico permitiu um fácil acesso à articulação, remoção dos corpos livres e sinovectomia parcial, com baixa morbidade e reabilitação precoce. O prognóstico final foi excelente.

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Introduction

Synovial chondromatosis is a rare but benign condition of unknown etiology. It is characterized by the appearance of hyperplastic metaplasia in joint synovia. As the disease progress, these lesions become pedunculated; they can loosen and form loose intra-articular bodies.^{1,2} These loose bodies may be cartilaginous or calcified/ossified.

This condition is usually observed in men between the third and fifth decades of life. It primarily occurs in large joints, such as the knee and hip; small joints, such as the ankle, are affected less frequently.³

Clinically, patients complain of joint pain, blockage, and range of motion limitation caused by the loose fragments. In the course of the disease, the onset of degenerative changes of the joint is inevitable.⁴

Clinical case

A 59-year-old male patient was referred to orthopedic consultation due to pain and edema in the left ankle, with approximately two years of evolution. The patient denied previous trauma and his personal and family background were irrelevant.

Objective examination indicated a marked limitation of ankle mobility (plantar flexion of 20° and dorsiflexion of 5°)

with no signs of instability. On palpation, it was possible to notice the presence of small swellings in the anterior aspect of the ankle, as well as articular crepitation.

Simple ankle radiographs indicated the presence of multiple intra-articular bodies, many of which were calcified (Fig. 1). Computed tomography was used to better define these lesions and their location, as well as the absence of associated degenerative changes (Fig. 2).

Considering the results of the physical and imaging evaluations, the therapeutic option was an anterior ankle arthroscopy.

The patient underwent the procedure; he was placed in a supine position and a tourniquet was placed at the upper end of the thigh. The superficial peroneal nerve, the anterior tibial tendon and the extensor digitorum tendons were identified and marked. When creating the anterolateral portal, spontaneous exteriorization of several calcified loose bodies was observed (Fig. 3). During arthroscopy, multiple loose bodies were identified and removed (more than 40, the largest of which measured 10mm × 5mm × 3mm), and partial synovectomy was performed (Figs. 4 and 5). The ankle was not immobilized and gait with partial weight-bearing was authorized in the immediate postoperative period. At four weeks, the patient presented complete and painless mobility of the tibiotalar joint. An anatomopathological exam confirmed the diagnosis of synovial chondromatosis.

Currently, at 12 months postoperatively, the patient presents no complaints or signs of relapse.



Fig. 1 – Anteroposterior and lateral left ankle radiographs show calcified loose bodies in the tibiotalar joint.



Fig. 2 – Computed tomography showing multiple loose bodies in the anterior recess.



Fig. 3 – Identification of the superficial peroneal nerve, the extensor digitorum tendons and the anterolateral portal. In the images, loose bodies exteriorization are observed.

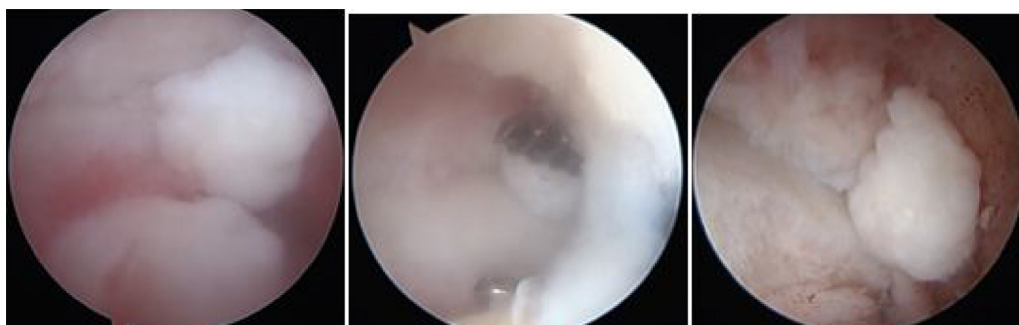


Fig. 4 – Arthroscopic images showing the loose bodies in the joint and their removal.

Discussion

Synovial chondromatosis is an uncommon disease, and its appearance in the ankle is even rarer.⁵ Although its etiopathogenesis is not yet clear, this condition is known to result from a chondral metaplasia of the synovial sheaths that surround joints and tendons. Cartilage foci are formed at the level of the synovial membrane initially, but as the disease progresses, these cartilage foci detach themselves and form loose intra-articular bodies.

It mainly affects male individuals, with a peak incidence between the third and fifth decades of life. Patients complain of joint pain, edema, limitation of mobility of the joint; in cases of advanced disease, the intra-articular loose bodies are palpable. The course of the disease is slowly progressive and leads to degenerative changes in the joints of untreated patients.⁶

The anatomopathological confirmation of the disease allows the differential diagnosis of other conditions that may cause intra-articular loose bodies (trauma, rheumatoid arthritis, tuberculosis arthritis, osteochondritis dissecans)⁷; and also chondrosarcoma, since malignant degeneration is

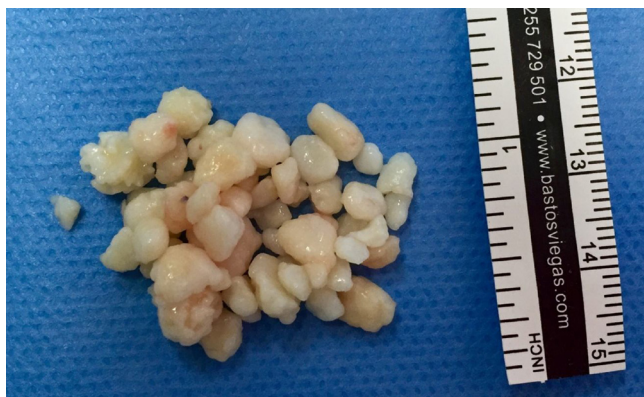


Fig. 5 – Macroscopic aspect of the removed loose bodies.

observed in about 5% of cases; its occurrence is related to multiple recurrences of the disease.⁸

Classically, the treatment of synovial chondromatosis of the ankle consists of arthrotomy with excision of the loose bodies and synovectomy. Due to the recent advances in ankle arthroscopy, therapy can now be performed in a non-invasive manner, with low morbidity and early rehabilitation.^{9,10}

The authors present a rare and exuberant case of synovial chondromatosis of the ankle, whose treatment and results are in agreement with the literature. In order to avoid joint destruction, the importance of a high index of suspicion for the diagnosis of this pathology and its early treatment is highlighted.

Conflicts of interest

The authors declare no conflicts of interest.

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