

ORIGINAL ARTICLE

CONDROMATOSIS SINOVIAL DE RODILLA: REPORTE DE CASOS

SYNOVIAL CHONDROMATOSIS OF THE KNEE: CASES REPORT

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RESUMEN:

La condromatosis sinovial es un trastorno articular caracterizado por ser una metaplasia benigna (24), poco frecuente caracterizado por la formación de múltiples nódulos cartilagosos dentro del revestimiento sinovial de las articulaciones. El revestimiento sinovial es responsable de producir líquido sinovial, que lubrica y nutre las articulaciones. Sin embargo, en la condromatosis sinovial, este revestimiento sufre cambios anormales, lo que provoca la aparición de nódulos cartilagosos o cuerpos libres.

PALABRAS CLAVES: Condromatosis Sinovial, Artroscopia De Rodilla, Metaplasia Sinovial, Dolor De Rodilla, Tumor De Rodilla.

SUMMARY:

Synovial chondromatosis is a rare joint disorder characterized by the formation of multiple cartilaginous nodules within the synovial lining of the joints. The synovial lining is responsible for producing synovial fluid, which lubricates and nourishes the joints. However, in synovial chondromatosis, this lining undergoes abnormal changes, leading to the development of cartilaginous nodules or loose bodies. We present a case of synovial chondromatosis treated by arthroscopic surgery by the orthopedic service of the north clinic.

KEYWORDS: Synovial Chondromatosis, Knee Arthroscopy, Synovial Metaplasia, Knee Pain, Knee Tumor.

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INTRODUCTION

Synovial chondromatosis is a rare joint disease characterized by the formation of multiple cartilage bodies in the synovial membrane. This condition can affect several joints in the body, but the knee is one of the most common sites of presentation (29).

The prevalence is estimated to affect approximately 1% (1 to 1.8 cases per person globally) of all synovial chondromatosis cases in general (1). Although it can occur at any age, it is more frequently observed in young adults, with a slight predilection for males (2).

The etiology of synovial chondromatosis is not yet fully understood. It is believed to result from a benign proliferative disorder of the synovial cells, leading to the formation of cartilage bodies. No specific genetic factors have been identified as being associated with this disease, and there is no conclusive evidence of a link with prior joint injuries or trauma (3, 4).

The clinical presentation of synovial chondromatosis can vary depending on the degree of involvement. Patients often complain of joint pain, swelling, and limited movement. In some cases, they may feel a "locking" or "catching" sensation in the knee due to the presence of free bodies that detach and move within the joint. It most

frequently presents in the knee joint (5).

Synovial chondromatosis is usually divided into two forms: primary and secondary. The secondary form is caused by trauma, osteonecrosis, osteoarthritis, or other intra-articular pathologies. In the secondary form, intra-articular bodies are usually fewer in number and more variable in size compared to the primary form. The primary form has an uncertain etiology (28).

The diagnosis of knee synovial chondromatosis is based on a combination of clinical findings, imaging studies, and histopathological findings. Conventional radiographs may reveal intra-articular calcifications or free bodies within the joint cavity. However, magnetic resonance imaging (MRI) is considered the modality of choice for evaluating the extent of the disease, identifying free bodies, and assessing the condition of the articular cartilage (6).

The differential diagnosis includes diseases such as rheumatoid arthritis, psoriatic arthritis, and septic arthritis, but in synovial chondromatosis, free bodies are characteristic (29).

The treatment of knee synovial chondromatosis depends on the degree of involvement and the patient's symptoms. In mild or asymptomatic cases, regular clinical monitoring may be sufficient. However, in symptomatic cases or those with significant functional

limitation, surgical treatment is the primary option. Surgery may involve the removal of free bodies, partial or total synovectomy, and, in some cases, knee arthroplasty (7).

Although its exact etiology has not been established, it is believed to be a benign condition related to the abnormal proliferation of synovial cells.

MATERIALS AND METHODS

This study is a case report presenting two patients treated at our institution, reviewing their diagnostic imaging and results of knee arthroscopic surgery.

CASE REPORT ONE

A 37-year-old male weighing 80 kg and 185 cm in height, with no pathological or allergic history. He presented with a clinical case of joint effusion in the right knee, insidious in onset, lasting for one and a half years, not associated with trauma. Five days before his intervention, he experienced three episodes of joint effusion, which were managed with arthrocentesis, yielding a total of 185 cc of synovial fluid.

A right knee MRI (Figure 1) showed multiple intra-articular loose bodies (Figure 1.1) and diffuse synovitis. The loose bodies appeared as hypointense structures on T1 and T2 with enhancement.

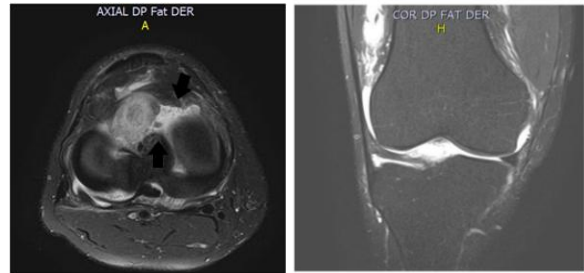


FIGURE 1. Knee MRI. The arrow points to the loose bodies.

An arthroscopy of the knee was performed, identifying multiple intra-articular loose bodies and some synovial protrusions. A partial synovectomy was carried out in certain areas of the knee, along with lavage and removal of the majority of these loose bodies (Figure 2).

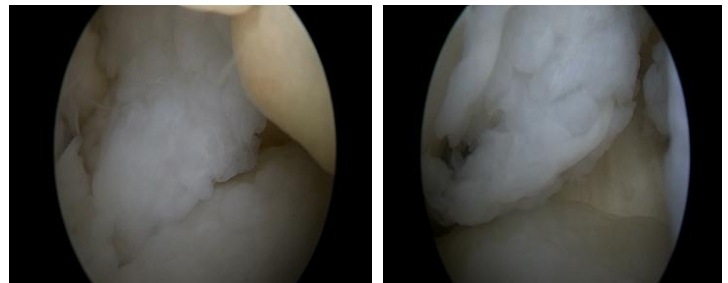


FIGURE 2. Knee Arthroscopy showing Synovial Nodules in Phase II of Milgram.

The patient experienced significant improvement in knee pain and function after the arthroscopy. No recurrences have been observed to date, and the patient has returned to daily activities without limitations.

Pathological examination reported synovial membrane metaplasia with the presence of benign cells.

CLINICAL CASE II

Male, 51 years old, weighing 85 kg and measuring 1.75 m in height, hypertensive under treatment, with no known allergies. He presented with clinical symptoms of left knee pain during regular activities, reporting that the pain began a year earlier after a home accident involving a fall on his feet.

Physical examination revealed painful complete range of motion with a sensation of blockage. Assessment showed a limitation in the last 10° of extension and the last 20° of flexion without joint effusion. McMurray (+), Steinmann (+), and pain upon palpation of the medial joint line were noted.

MRI (Figure 3) revealed a posterior intra-articular cyst, a short oblique meniscal lesion, and multiple loose bodies.

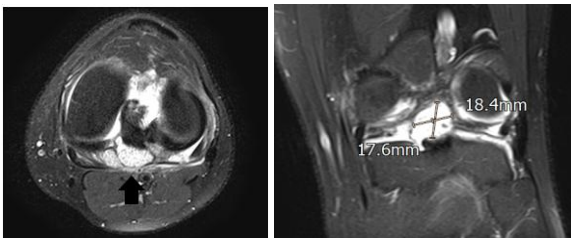


FIGURE 3. Knee MRI, the arrow points to a mottled pattern of synovial fluid. The patient is in MILGRAM Stage III with abundant loose bodies.

He underwent surgery for meniscus repair and cyst excision, revealing an intrasynovial cyst between the lateral meniscus, its root, and the anterior cruciate ligament, as well as multiple

fragments of hyaline cartilage. Approximately 16 cc of cartilaginous loose bodies were collected and sent for pathological analysis (Figure 4).



Figure 4. Cartilaginous loose bodies.

The pathological study reported hyaline cartilage nodules with chondrocyte islands showing minimal atypia and binucleated cells without evidence of mitosis. The patient's recovery showed improvement, with restored joint function and resolution of the blocking sensation.

DISCUSSION

Synovial chondromatosis is a rare condition characterized by the presence of multiple cartilaginous nodules in the synovial lining of the joints. In the cases presented, the patients exhibited typical symptoms of synovial chondromatosis, such as knee pain, intermittent effusions, and occasional joint locking. These symptoms are usually caused by the presence of loose cartilaginous bodies

that detach from the synovial membrane and float freely within the joint space.

The diagnosis of synovial chondromatosis is made through patient history, physical examination, and imaging studies. In the cases presented, the diagnosis was based on the patients' symptoms and confirmed by magnetic resonance imaging (MRI).

In these cases, symptomatic management involved arthroscopy to remove the loose bodies and, in one case, partial synovectomy due to nodulations and hypertrophic synovium.

The goal of treatment is to relieve the patient's symptoms, improve joint function, and clarify the diagnosis.

CONCLUSION

We present two cases of synovial chondromatosis of the knee in two male patients at different stages. The diagnosis was made using magnetic resonance imaging, and the treatment involved arthroscopy; in case 1, with MILGRAM II, removal of free bodies and partial synovectomy was performed, and in case 2, with MILGRAM III, removal of the free bodies was carried out. Both cases had a satisfactory evolution with recovery of function and return to normal daily activities. However, it is

important to note that synovial chondromatosis can be a chronic and recurrent disease, with a small percentage of cases developing into chondrosarcoma, so long-term follow-up is required.

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