

## Case Report

## Arborescent Lipoma of the Knee (About a Case)

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**Abstract:** Arborescent lipoma is a rare pseudotumor of the synovium, occurring idiopathically or sometimes in association with mechanical or inflammatory arthropathy. The preferred location is the knee, particularly in the suprapatellar recess. If the diagnosis is evoked, particularly in the presence of a chronic effusion, the diagnosis is based on an MRI examination which shows hypertrophy of the synovial villi which appear to have a fatty signal on all the sequences. However, confirmation of the diagnosis is based on synovial biopsy.

**Keywords:** Knee, Arborescent lipoma, Magnetic resonance imaging Introduction.

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## INTRODUCTION

Arborescent lipoma is a rare benign joint disorder. It constitutes 3 to 8% of benign synovial tumors [1]. It occurs in young adults. It is often mono-articular, affecting mainly the knee, although other joints may also be affected, such as the wrist joint, ankle joint, elbow joint and hip joint [2]. The clinical manifestations consist of a progressive increase in joint volume, accompanied by pain of varying intensity, limitation of movement and the intermittent occurrence of joint effusions or hemarthrosis [3]. These symptoms last for months to years. The delay in diagnosis can be significant and can lead to joint destruction [4]. Histologically, it is characterized by a subsynovial proliferation of adipose tissue [3, 5] or a dystrophy of the synovium [1] rather than a true tumor. It develops more particularly in the subquadricepsal cul-de-sac [5].

## OBSERVATION

A 30-year-old patient had been suffering from persistent knee pain and recurrent effusions for several months. The pain was more marked in the anterior aspect of the knee.

Clinical examination revealed a swelling of the left knee, with an intra-articular effusion. On palpation, the patient reported a feeling of tension in the anterior aspect of the knee, without restriction of the range of

active and passive movements. The patient's gait was normal, with no abnormal leg axis.

In view of this picture, an MRI before and after injection of Gadolinium was performed.

The MRI revealed hypertrophy of the synovial villi, which appeared fatty on all sequences, in T1 hypersignal (Fig. 1) and T2 hypersignal (Fig. 2), fading on the FAT SAT sequence, associated with a large subquadricepsal effusion.

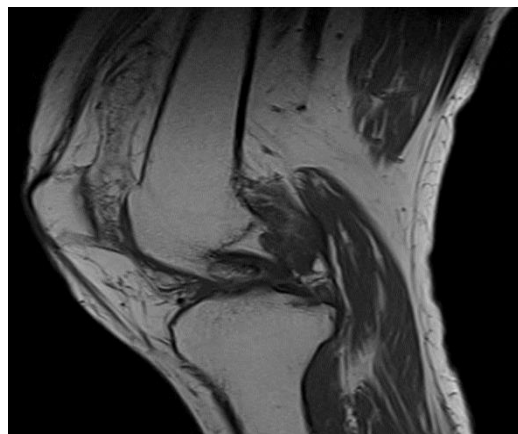
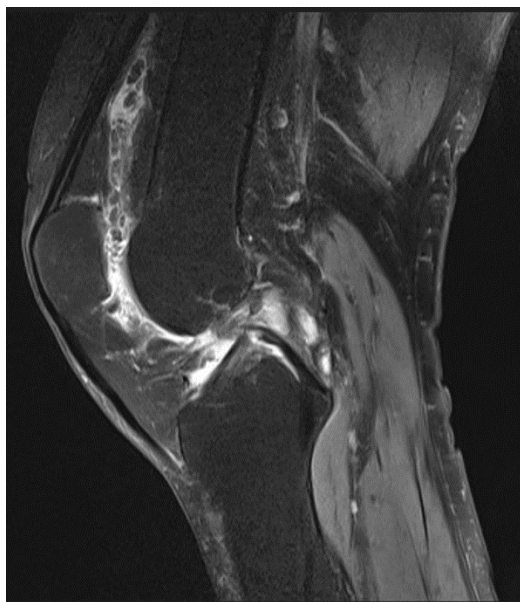


Figure 1: MRI of the knee. T1 sagittal sequence: Hypertrophic aspect of the synovial bands in T1 hypersignal

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**Figure 2: MRI of the knee. Sagittal sequence DPT2 FAT SAT: suppression of the spontaneous T1 hypersignal testifying to the fatty nature of the synovial bangs**



**Figure 3: MRI of the knee. Sagittal T2\* sequence: absence of a hypointense image showing hemosiderin deposits characteristic of villonodular pigmented synovitis**

## DISCUSSION

Arborescent lipoma was first described in 1904 by the German surgeon Albert Hoffa [6]. It is a rare benign articular condition (0.3 to 0.7% of lipomas), corresponding to a hyperplasia of mature fatty tissue and hypertrophy of the synovial villi, developing within a joint. Its etiology remains undetermined, although some note its association with osteoarthritis, rheumatoid arthritis or old trauma [4]. It mainly affects adult males and most often affects the knee, particularly in the suprapatellar recess, and sometimes occurs bilaterally. The clinical findings are usually swelling of the joint

followed by discomfort or mechanical pain with periods of exacerbation [7]. Arborescent lipoma can also be discovered during spontaneous hemarthrosis, especially in young patients [9].

Standard radiographs are usually normal, showing degenerative lesions in advanced forms [1].

Joint ultrasound can be of great help by showing intra-articular effusion and hyperechogenicity similar to that of subcutaneous fat [4].

CT scan or arthroscanner clarifies the topography of the masses and their fat density, without contrast after intravenous iodine injection [10].

Diagnosis is based on magnetic resonance imaging (MRI), which allows a precise and very specific diagnosis, with an exact determination of the size of the lesion, which plays an important role in the planning of subsequent treatment.

MRI shows a fatty-looking synovial tumor with fringed contours that are easier to visualize because they are often highlighted by joint effusion due to arthropathy. This tumor presents a typical fatty signal in T1 hypersignal and an intermediate signal in T2 and fading on the FAT SAT sequence, it is also highlighted by a homogeneous villous contrast [11].

The differential diagnosis is mainly with villous-nodular pigmented synovitis, which has different MRI characteristics due to signal abnormalities related to hemosiderin deposits; Synovial hemangioma is a benign hypervascularized tumor, appearing on MRI as a lobulated mass, iso- or hyposignal in T1 compared to the muscles, in intense T2 hypersignal, with fine septa and a serpiginous aspect that are very suggestive of the diagnosis; Chronic synovitis appears as a fibrous nodular thickening testifying to the secondary lowering of the signal in T2 weighting of the synovium.

Confirmation of the diagnosis of certainty is based on the histological study of the biopsy specimen, performed under arthroscopy [12].

The radical treatment is total synovectomy by arthrotomy [13]. There is usually no risk of recurrence after synovectomy. Arthroscopic synovectomy is recommended in cases of limited extension to the anterior compartment of the knee.

## CONCLUSION

The arborescent lipoma is a rare benign intra-articular fatty pseudotumor. It mainly affects the knee joint. MRI is the key examination and treatment is not systematic.

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