

What Do You Know About Arborescent Lipoma?

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Abstract

Original Research Article

Lipoma arborescens is an uncommon pseudotumoral synovial lesion usually located in the suprapatellar pouch of the knee. This diagnosis should be considered, particularly in patients with chronic joint effusion. Magnetic resonance imaging confirms the lipomatous nature of the synovial proliferation. When limited to the anterior compartment of the knee, lipoma arborescens can be treated by arthroscopic synovectomy.

Keywords: Lipoma arborescens; Knee; MRI.

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INTRODUCTION

A pseudotumor lesion in which the subsynovial tissue is replaced by mature fat cells, often associated with inflammatory cells, leading to synovial villous proliferation. The etiology is poorly understood but often corresponds to a reactive synovial process, secondary to degenerative arthropathy, chronic synovitis or arthritis, or trauma. Primary cases, without underlying joint pathology, are more rarely described.

MATERIEL AND METHOD

Our work is based on a retrospective study of 7 files of arborescent lipomas collected at the Central Radiology Department of the Ibn Rochd University Hospital of Casablanca over a period of one year. All patients underwent magnetic resonance imaging.

RESULTS

There were seven patients, four men and three women. The average age was 41 years (17-58 years), with no particular notable history. The circumstances of discovery were dominated by a parietal swelling of the soft parts of the knee (6 cases) and of the shoulder (1 case); joint pain and limitation of movements were associated in three patients. Our patients were investigated by MRI of the shoulder in one woman; unilateral MRI of the knee in 5 men and bilateral in the fourth. The results showed hypertrophy of the synovial bangs with a fatty signal in all our patients without hemosiderin deposition; there was an associated enhancement of the synovium and a joint effusion.

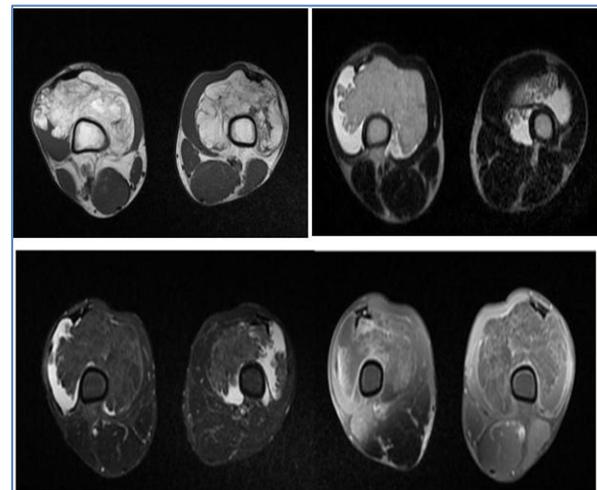


Fig-1: Axial T1 /T2 /STIR/FAT SAT-weighted sequences with gadolinium injection showing bilateral hypertrophy of the synovial bangs with a fatty signal and moderate joint effusion

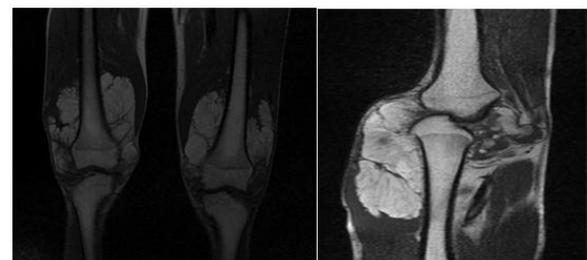


Fig-2: Sagittal and coronal T1-weighted sequence of the synovial mass in hypersignal

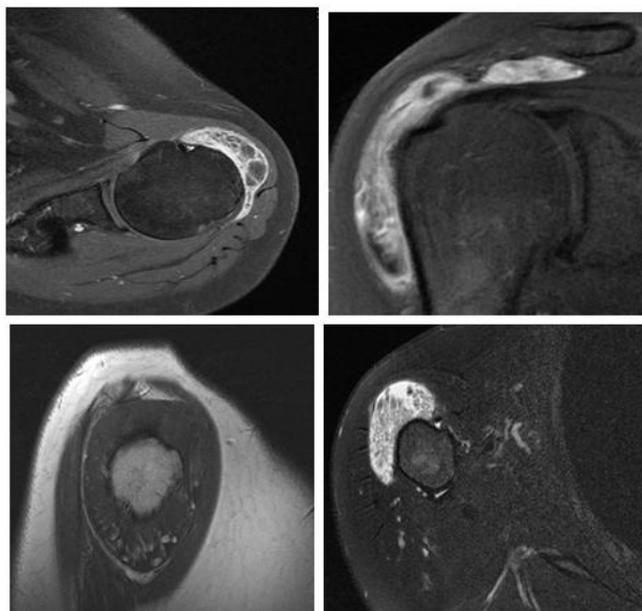


Fig-3: T1 and T2 weighted axial sequences / T1 weighted axial and coronal sequences with gadolinium injection large villi of fatty signal, presenting a tree-like architecture, associated with a joint effusion with enhancement of the adjacent inflammatory synovium are noted

DISCUSSION

Arborescent lipoma is a rare condition, usually mono-articular, more rarely bilateral or even polyarticular, preferentially in the knee, especially the supra-patellar recess, but may also affect the shoulder, subacromial bursa, hip, elbow, hand and ankle. Arborescent lipoma affects the 5th to 7th decade with a sex ratio close to 1. It is an extensive or diffuse synovial lesion, sometimes called lepromatous proliferation of the synovium to differentiate it from isolated joint lipoma and Hoffa's disease.

Clinically it is a progressive joint swelling, with intermittent episodes of pain, and a limitation of and a limitation of the articular amplitude variable to blocking and effusion.

The diagnosis can be suspected on standard radiography when there is a fatty tone within the joint and in advanced forms of degenerative joint lesions. Ultrasound can help by showing a proliferation of synovial bangs, usually hyperechoic, associated with a joint effusion.

Radiography may show bone erosions without specificity. The CT scan specifies the topography of the masses and their fat density (50-60 HU), without contrast after venous injection of PDC. MRI is the most efficient examination to study such a synovial lesion. It allows the diagnosis to be made when there is a synovial proliferation with a signal identical to that of the fat on the T1 and T2 sequences; the image may be affected by chemical displacement artifacts at the lipoma-synovial fluid interface. This proliferation presents as villous bangs or as well-limited subsynovial masses and the 2 aspects may be associated. Sequences

with suppression of the fat signal may confirm the nature of these synovial masses; there is no contrast after venous injection of gadolinium. The differential diagnosis is mainly with villonodular synovitis, which has different MRI characteristics because of signal abnormalities related to hemosiderin deposits. The diagnosis of synovial hemangioma or synovial lipoma, possibly evoked by MRI, will in practice be established by arthroscopy. Arthroscopy shows a yellowish-white synovial proliferation, forming digitations of variable size (a few mm to 2 cm), giving an arborescent appearance.

Microscopic examination shows that the synovium is totally infiltrated by mature adipocytes; the synoviocyte lining is discretely inflammatory or hyperplastic with a focal perivascular mononuclear infiltration.

For some authors, this is a non-specific reaction of the synovium to degenerative or inflammatory damage. Gonarthrosis is very often associated, without it being possible to establish a link between the 2 conditions; some authors, however, advise looking for an arborescent lipoma in cases of severe unilateral osteoarthritis in a young subject. Other cases are associated with rheumatoid or psoriatic arthritis. The adipose proliferation could be from synovial connective tissue adipocytes, or after differentiation of a totipotent mesenchymal cell.

Treatment is not systematic. Some suggest arthroscopic synovectomy; underlying arthropathy must also be considered. Anatomopathological examination shows hyperplasia of the adipose tissue extending to the contact of the synoviocyte lining. Recurrence occurs if

the therapeutic procedure is incomplete. These lesions do not show malignant degeneration.

CONCLUSION

Arborescent lipoma is a pseudotumor lesion composed of hypertrophy of the synovial villi distended by fat, often secondary to degenerative or inflammatory joint pathologies of characteristic aspect in MRI whose treatment is based on synovectomy essentially. Its recurrence is rare.

REFERENCES

- Murphey, M. D., Carroll, J. F., Flemming, D. J., Pope, T. L., Gannon, F. H., & Kransdorf, M. J. (2004). From the archives of the AFIP: benign musculoskeletal lipomatous lesions. *Radiographics*, 24(5), 1433-1466.
- Sheldon, P. J., Forrester, D. M., & Learch, T. J. (2005). Imaging of intraarticular masses. *Radiographics*, 25(1), 105-119.
- Vilanova, J. C., Barceló, J., Villalón, M., Aldomà, J., Delgado, E., & Zapater, I. (2003). MR imaging of lipoma arborescens and the associated lesions. *Skeletal radiology*, 32(9), 504-509.
- Franco, M., Puch, J. M., Carayon, M. J., Bortolotti, D., Albano, L., & Lallemand, A. (2004). Lipome arborescent du genou traité par synovectomie arthroscopique. *Revue du rhumatisme*, 71(1), 89-91.
- Ryu, K. N., Jaovisidha, S., Schweitzer, M., Motta, A. O., & Resnick, D. (1996). MR imaging of lipoma arborescens of the knee joint. *AJR. American journal of roentgenology*, 167(5), 1229-1232.
- Sola, J. B., & Wright, R. W. (1998). Arthroscopic treatment for lipoma arborescens of the knee. A case report. *JBJS*, 80(1), 99-103.
- Kloen, P., Keel, S. B., Chandler, H. P., Geiger, R. H., Zarins, B. E., & Rosenberg, A. E. (1998). Lipoma arborescens of the knee. *The Journal of bone and joint surgery. British volume*, 80(2), 298-301.
- Soler, R., Rodríguez, E., Bargiela, A., & Da Riba, M. (1998). Lipoma arborescens of the knee: MR characteristics in 13 joints. *Journal of computer assisted tomography*, 22(4), 605-609.
- Sumen, Y., Ochi, M., Soda, Y., & Ikuta, Y. (1998). Lipoma arborescens in bilateral knee joints. *Archives of orthopaedic and trauma surgery*, 117(1-2), 105-107.
- Narvaez, J., Narvaez, J. A., Ortega, R., Juan-Mas, A., & Roig-Escofet, D. (1999). Lipoma arborescens of the knee. *Revue du rhumatisme (English ed.)*, 66(6), 351-353.
- Martín, S., Hernández, L., Romero, J., Lafuente, J., Poza, A. I., Ruiz, P., & Jimeno, M. (1998). Diagnostic imaging of lipoma arborescens. *Skeletal radiology*, 27(6), 325-329.