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Abstract

Synovial Lipoma Arborescens (LA) is a rare disease, affecting usually the knee joints. The case presents a 69-year-old male complaining of a left knee swelling of 9 months duration for which he sought multiple medical and orthopaedic advices without improvement or diagnosis. Diagnosis was done by characteristic MRI imaging of this benign tumour. In conclusion, synovial lipoma arborescens is rare but should be kept in the differential diagnosis of knee swelling

Introduction

Synovial lipoma arborescens is a rare condition affecting synovial linings of the joints and bursae, with “Fronde-like” deposition of fatty tissue. It accounts for less than 1% of all Lipomatous lesions¹. Patients typically present in the 5th-7th decades, but the condition has also been reported in the young². The clinical presentation is of joint swelling, variable arthralgia, and frequently an associated effusion³. Many patients have associated pathologies. Described associated pathology in the knee include⁴ degenerative changes, meniscal tears, and joint effusion. MRI is the modality of choice for diagnosis. A typical appearance is of fat containing frond-like synovial mass, usually outlined by concurrent joint effusion. The lesion follows the signal intensity of fat on all sequences.

Case report

A 69 year old Libyan male patient presented to the outpatient rheumatology clinic complaining of 9 months history of left knee swelling. At the start of his illness, he went to several orthopaedic doctors. The basic investigation was done and revealed normal CBC, raised CRP (6.5 mg/dl), normal ESR (25 mm/hr), negative rheumatoid factor, and normal uric acid. One month later, arthroscopy was done which showed a meniscal tear, and therapeutic arthroscopic intervention was done. After two weeks his left knee joint swelled again and was

treated by intraarticular steroid injection (Depomedrol 40mg) then the patient was advised to commence physiotherapy. After two months, the patient sought another opinion from another doctor who diagnosed rheumatoid arthritis with monoarticular presentation and treated with prednisolone tablet 20mg once daily with gradual tapering to 5mg once daily and leflunomide tablet 20mg once daily. This treatment was stopped by the patient after 2 months because no improvement occurred. MRI of the left knee was done during this period; the radiologist noted a menisci going with generative changes of the knee (osteoarthritis). Another doctor described NSAIDs and glucosaminoglycans without improvement.

In February 2021, when he presented to our clinic he had a clinically swollen left knee. In the MRI, and there was a fatty tissue in suprapatellar area and a second opinion was sought from another radiologist. The report was ready on the second day, and it revealed knee joint effusion with many synovial fronds demonstrate T1WI, T2WI hyperintensity which suppressed on fat saturation sequences, a picture compatible with lipoma arborescens (Figures 1 and 2). The patient was referred to an orthopaedic doctor for total synovectomy.

Figure 1: T1W1 image

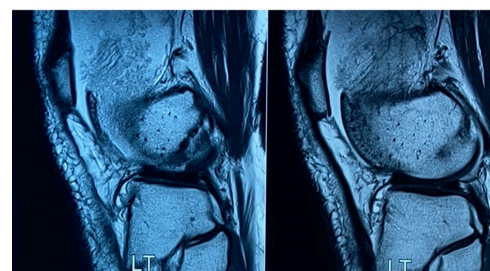
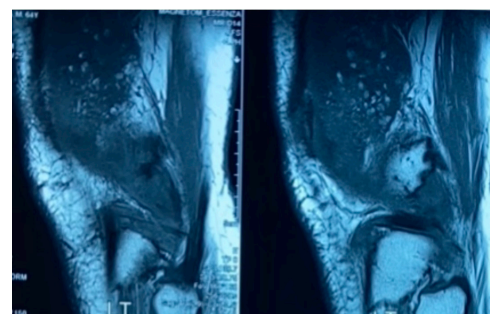


Figure 2: T2W1 image



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Discussion

Lipoma Arborescens (LA) is a rare, intra-articular benign lesion of the synovium⁵. The first detailed case report was done by Arzimanoglu in 1957⁶. Since then, less than 200 cases have been reported in the literature by 2017⁷. Most reports consist of just one case or a small series of this unusual lipoma, while Howe and Wenger⁸ described the largest series with 45 lesions in 39 patients. Aymen *et al*⁹ reported a case of LA in a 47 year old patient who received arthroscopic synovectomy at Monastir University Hospital, Tunisia. They also described unilateral knee involvement as typical while atypical cases include both knees and involvement of other joints, such as shoulder, elbow, wrist, hip, and ankle^{8,10,11-14}.

Patients complain of chronic, progressive, painless swelling of the involved joint. Effusion is almost always present but limitations in range of movement and pain are not seen very often^{11,15,16}. MRI is the diagnostic imaging modality of choice and can demonstrate variable morphological patterns with pathognomonic characteristics^{15,17}.

A large frond-like mass arising from the synovium is seen, with signal intensity similar to fat on all pulse sequences^{18,19,20}. Alternatively, multiple villous proliferations of the synovium and fatty appearing globules can be seen, while mixed patterns can also appear¹⁹.

LA is a benign tumour, so a biopsy is not regarded by some authors as an essential part of the treatment algorithm. Recommended treatment is open synovectomy^{15,21-23} and recurrence after surgery is uncommon²¹. When synovectomy is delayed more than a year from symptoms onset, early osteoarthritis may develop²⁴.

Another diagnosis as synovial chondromatosis, pigmented villonodular synovitis, quadriceps fat pad impingement, synovial haemangioma, and intra-articular liposarcoma may mimic LA and cause confusion^{25,26}.

Tuberculous arthritis is one of differential diagnosis of chronic knee swelling especially in Africa. Tuberculosis is endemic in certain areas such Asia, the middle East, and Africa²⁷.

Skeletal involvement is seen in 1-3% of patients with tuberculosis and for approximately 10-11% of extrapulmonary cases. Among them, approximately one half of these affect the spine and the rest are extraspinal affecting mainly hip and knee joints²⁷.

Conclusions

LA is a rare benign lesion that commonly affects the knee joint, especially in suprapatellar pouch and we should keep it in our mind as a differential diagnosis of chronic knee swelling to avoid a delay in diagnosis as occurred with our patient and also the patients in other case series.

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