

Uncommon Cause of Swelling of the Knee: Lipoma Arborescens

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Abstract:- Lipoma arborescens is an uncommon suprapatellar pouch of intra-articular knee mass, chronic and slowly progressive, which is characterised by replacement of subsynovial tissue into mature adipocytes cells. We highlight the role of MRI and histological examination to differentiate other intra-articular knee mass.

Keywords:- Lipoma Arborescens, Knee Pain, Intra-Articular Mass.

I. INTRODUCTION

Lipoma arborescens is an uncommon suprapatellar mass, benign intraarticular lesion; the aetiology is

idiopathic. The diagnosis based on MRI and recommended treatment open or arthroscopically.

II. CASE PRESENTATIONS

A 24-year-old male patient presented with pain in left knee joint, with swelling progressive with restriction of flexion movement in the knee joint to our OPD. There were no trauma history, fever or large joint involvement. Clinical examination showed fullness in the suprapatellar region in the left knee joint. The collateral and cruciate are intact as well as a meniscus.

All laboratory studies were normal.

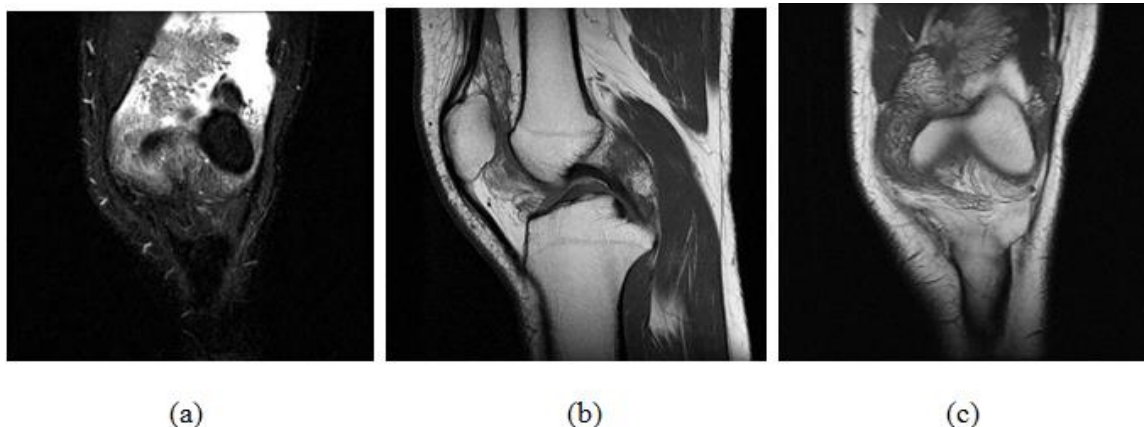


Fig 1:- MR images on coronal Fat saturation (FS) (a), sagittal, T1-weighted image(b) T-2 coronal images depict frond-like villi projecting inwards from the synovium with signal equal to fat on all imaging sequences.

The patient underwent open synovectomy, large lipomatous nodules throughout out knee joint from synovium intra-operatively noted and meticulously excised, and tissue sample sent for histopathological examination. Large papillary projection from synovium admixed with adipocytes cells seen on macroscopically. Mature adipocyte cells beneath the synovial microscopically seen.

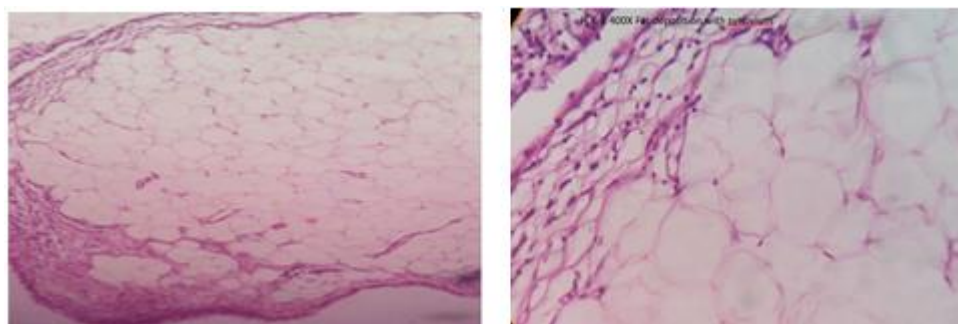


Fig 2:- Villous proliferation of synovium. Mature adipose tissue with focal and patchy chronic inflammatory cells and vascular proliferations were seen under the synovial lining

The patient gained full range of motion after suture removal on tenth postoperative day, return to its routine work, and no recurrences seen after six months follow up.



Fig 3

III. DISCUSSION

LA is a diffuse synovial lipoma, also known as synovial lipomatous is a rare benign intra-articular lesion characterised by villous projection into the knee joint from synovium(1). Hoffa described LA in 1904 and detail by Azimongul in 1957(2). LA does not show any malignancy features on histological examination. Therefore, Hallel et al. suggested that the lipomatous proliferation of the synovial membrane would appropriate word(3).

Its aetiology is unknown trauma, and diabetes mellitus history has been described(3). Lesion due to either degenerative or inflammatory arthritis is seen quite often, as well(4). It has been proposed that there are two types of LA primary and secondary (12). Primary seen rarely associated with hereditary diseases and secondary LA most common comparative to primary associated with, meniscal injuries, degenerative joint diseases, chronic synovitis or arthritis causes chronic irritation of synovium result in repeated trauma can trigger the growth.

LA usually affects knee (monoarticular) and found in the suprapatellar fossa. Hubscher O, Costanza E, Elsner B (6), describe unilateral knee involvement as typical, while atypical cases include sub-deltoid bursa both knees or involvement of other joints, such as shoulder, elbow, wrist, hip and ankle(5). Little A et al. reported bilateral presentation of this disease. Patients with lipoma arborescens usually present with a painless, long-standing, slowly progressive swelling of a joint; especially the knee with intermittent effusion. Range of motion may be restricted. Our patient had swelling of the left knee joint of long duration and restriction of joint movements. The differential diagnosis for this lesion is pigmented villonodular synovitis, synovial lipoma, Hoffa disease, synovial hemangiomas, synovial chondromatosis and chronic inflammatory synovial proliferation like in rheumatoid arthritis(11). Lipoma arborescens usually arises in the suprapatellar pouch, whereas synovial haemangioma and synovial lipoma mainly found in the infrapatellar fat

pad. Laboratory findings are usually unremarkable with normal leucocyte count and ESR. Plain radiographs show degenerative changes of osteoarthritis in a majority of cases. MRI shows low signal intensity villonodular intraarticular masses.

Magnetic Resonance Imaging (MRI) is the standard technique for diagnosis and to differentiate lipoma arborescens from other lesions. MRI on fat-suppressed or STIR sequences show characteristic appearances of multiple villous lipomatous synovial proliferation and frond-like synovial proliferation of fat signal intensity(7). The duration of symptoms was relatively short in multiple villous lipomatous synovial proliferation (1–7 months), while 1–20 years in mixed pattern and 6–7 years in isolated frond-like subsynovial fat mass. Lipoma arborescens can differentiate with signal intensity on MRI with villous nodular synovitis, gouty arthritis or chondromatosis of the knee joint. Intra-articular lipoma lacks the villous frond-like appearance seen in lipoma arborescens. Under the microscope, lipoma arborescens reveal a diffuse replacement of the subsynovial layer by mature fat cells with moderate infiltration of mononuclear inflammatory cells. Intra-articular lipoma, which may be covered by synovium, does not arise from or replace the subsynovial layer..

Depending on the extent of lesion surgeon choice of choosing procedure to prevent recurrences either open or arthroscopically synovectomy. The popularity of β radiation in 1970s delbart used yttrium-90 (Y-90) radio synoviothetosis (9).

Only the less extensive cases of lipoma arborescens of the knee could be treated with an arthroscopic anterior synovectomy because the lesion is accessible through standard arthroscopic portals, provided a complete excision of the lesion can be performed with the advantage of early rehabilitation.

As the lesion is extensive in our patient, we did open synovectomy and confirmed our diagnosis by

histopathology. Peter Kloen et al. did open synovectomy in four cases. He had immediate pain relief and achieved a complete range of motion of knee joint; no postoperative complication was noted and returned his daily work.

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IV. CONCLUSION

In conclusion, Lipoma arborescens is a rare, benign intraarticular tumor which may mimic a number of other diagnoses. In cases of unexplained chronic joint effusion, MRI should be considered to exclude this pathology as well as other uncommon intraarticular pathology. Treatment with synovectomy is frequently curative.

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