



A RARE CAUSE OF KNEE SWELLING, LIPOMA ARBORESCENS: A CASE REPORT

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KEYWORDS :

INTRODUCTION

Lipoma arborescens (LA) is a rare benign intraarticular tumour characterised by replacement of sub synovial tissue by mature adiposites and fibrous tissue with a resultant villus and lipomatous proliferation of synovial tissue in an arboreal like pattern. The etiology is not known. Although, it has been reported both in adults and children, there are few case reports of lipoma arborescens is more common in children than in adults. It usually involves the supra patellar pouch of the knee joint. The term lipoma is misleading because the lesion does not show any macroscopic or histological features of a neoplasm. The term arborescens comes from the word Arbor (Latin for tree) and describes the characteristic villous and frond-like morphology. Lipoma arborescens typically affects adults. It most commonly involves the knee, but other locations have also been described.

Shoulder, elbow, wrist, hip and the ankle may also be affected. As the cause of lipoma arborescens is unknown, due to a nonspecific reactive synovial fatty proliferation in response to chronic traumatic or inflammatory stimuli rather than a neoplastic process^{3,4}. It is not a neoplasm. It may persist for years and is accompanied by intermittent effusions. Clinically it presents as insidious onset of painless swelling of the affected joint persisting for many years followed by progressive pain accompanied by intermittent episodes of joint effusion. Most of the patients do not have any rheumatology problem, some patients may have history of sarcoidosis, joint trauma, gout, psoriatic arthritis. Although rare, lipoma arborescens must be included in the differential diagnosis of patients with chronic joint swelling or hemarthrosis.

CASE REPORT

History: A 14yr old female child was brought to hospital by mother with complaints of slowly progressive swelling of both knees. The patient complained of knee pain in night that woke her up. No other joints were affected. She told that pain was reducing as swelling was growing. No h/o any prior trauma, surgery or any infection. On examination: There was diffuse swelling in both knees. There is fullness in the suprapatellar and parapatellar regions of both knees. Knee had full range of motion.



INVESTIGATIONS

-Routine blood examinations, rheumatoid factor, serum uric acid, antinuclear antibody, anti-dsDNA done. All investigations are normal.

-X-ray both knees showed area of dense soft tissue in suprapatellar pouch of both knees. Femur and tibia were normal. There is preservation of joint space without cortical erosions.

-MRI Knees: Evidence of frond-like villi projections noted involving synovium which are hyperintense on T1/T2 & Hypointense on STIR with adjacent joint effusion (left more than right) and with few septations predominantly involving suprapatellar, infrapatellar and popliteal bursae is seen.

-Patella is displaced laterally in the left knee joint.

- On Biopsy: Synovial lined villous proliferation. villi are diffusely infiltrated by mature fat, grossly appears as a yellow papillary process is observed.



TREATMENT-

After all the investigations, the diagnosis of lipoma arborescens is made and referred to the Department of Orthopedics, the patient was taken to private hospital in Karaikal, there Arthroscopic synovectomy of left knee is performed. Arthroscopic examination of knee showed large quantity of yellow frond like projections surrounded by excessive joint fluid in supra patellar bursa. Synovium is excised from the pouch carefully, the retro patellar fat and Hoffa's fat pad. Histological assessment of LA tissue showed frondose areas with

significant neovascularisation, dense cellular infiltrate and connective tissue with mature adipocytes.

The postop period was uneventful. We advised to avoid weight-bearing activities. We also advised to avoid trauma to both knees and suggested follow up appointments every three months at out patient clinic.

DISCUSSION-

In childhood trauma, bleeding disorders or tumours are the main reasons of non inflammatory conditions leading to supra patellar or joint tenderness. As there is absence of trauma history, normal coagulation profile the etiology of trauma and bleeding disorders is unlikely. Synovial disorders may lead to swelling of both the knee. Lipoma arborescens is a rare intra articular disorder characterised by villous lipomatous proliferation of synovial membrane. The exact genetic cause is not known. In our case 14 years old female presented with the complaints of swelling in both knees. There is no history of any trauma, infections and surgery. Temporary relief with corticosteroids is observed. Some authors suggested trauma, osteoarthritis as etiology for LA. Few authors were in view that osteoarthritis may be secondary. Usually osteoarthritis occurs in old age, but LA is seen in any ages. In our patient X-ray both knee showed area of dense soft tissue in supra patellar pouch of both knees. Femur and tibia were normal. There is preservation of joint space without cortical erosions.

MRI Knees showed frond-like villi projections noted involving synovium which are hyper intense on T1/T2 & Hypo intense on STIR with adjacent joint effusion (left more than right) and with few septations predominantly involving supra patellar, infrapatellar and popliteal bursae is seen. So there is no evidence of osteoarthritis. Our patient is in childhood and had no history of trauma or any disorder. Therefore according to clinical and radiological examinations, MRI findings, we concluded that LA was the correct diagnosis in our cases. We referred to Orthopedics Department to establish LA diagnosis, surgical synovectomy was done in outside private hospital. Arthroscopic synovectomy demonstrated excellent short term results with low rate of recurrence. Chemical synovectomy with Yttrium has been used for temporary relief of symptoms but not as the definitive treatment.

CONCLUSION

In conclusion, children or adolescents with swelling and pain at one/multiple joints and without history of trauma, bleeding disorders, no systemic involvement, PVNS etc, LA should be considered as differential diagnosis. The typical MRI appearance of fatty synovial proliferation with no other signal intensities is pathognomonic for lipoma arborescens. Although rare and benign, the condition should be considered in the differential diagnosis of a chronic joint swelling. LA of the knee involved the development of early osteoarthritis when prompt synovectomy was not performed.

Surgical synovectomy is the treatment of choice. For those who are not willing for surgical synovectomy the symptoms can be temporarily relieved by using NSAIDs, corticosteroids.

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