

Hoffa's Disease - Disease of the Knee in a Young Male: A Rare Case Report

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ABSTRACT

Hoffa's disease or synovial lipomatosis is a rare, benign intra-articular lesion commonly affecting knee joint causing joint pain and swelling with or without restriction of movement. This is a rare case report of a 20 years old male patient who complained of pain and swelling over right knee with restriction of movement. Histopathological study of the excised tissue showed characteristic features of synovial lipomatosis. We are presenting this case not only because this is rare but also for awareness amongst pathologists and radiologists for its classical radiological, gross and microscopic presentation.

Keywords: Hoffa, knee, synovial lipomatosis

INTRODUCTION

Hoffa's disease or synovial lipomatosis is an uncommon, benign intra-articular lesion containing infiltrating and proliferating fat cells in synovial tissue leading to papillary like proliferation of synovial membrane. [1] Hoffa's disease is a monoarticular disease typically affecting knee joint. Incidence is more commonly observed in fourth and fifth decades of life with no predilection for gender. [2]

In majority of the cases, synovial lipomatosis occurs de novo but sometimes associated with trauma, chronic rheumatoid arthritis, osteoarthritis, psoriatic arthritis and baker's cyst. [3]

In our case, patient was young male giving history of trauma to the right knee joint and presented with swelling of the knee joint associated with restriction of movements.

CASE REPORT

A 20 years old male presented to our Orthopedic department with right knee pain, swelling and restriction of movements of right knee joint. Patient was apparently alright one year back and the pain with swelling started since one year. Pain and swelling was non-progressive in nature and was not associated with any kind of relieving factors.

Physical examination revealed swelling and crepitation in right knee joint. There was moderate tenderness along the joint line with restriction of movement. There was no joint effusion but swelling of joint was appreciated. Patellar tap was positive. Distal pulses were palpable. There was no significant past history, personal history and family history.

Based on the above clinical findings, MRI of right knee joint was advised. Also with the suspicion of clinical diagnosis of arthritis of knee joint [? Rheumatoid] investigations like CBC, ESR, C reactive protein, RA factor, anti-CCP antibody were advised. CBC was normal with mildly raised ESR (30mm at the end of 1 hour). C reactive protein was positive (15mg/L) whereas RA factor and anti-CCP antibody were negative. MRI showed markedly thickened synovium and shows post contrast enhancement with fat containing non enhancing frond like synovial masses and likely possibility of synovial lipomatosis was given.

Based on MRI findings, patient was taken for operative removal of intra-articular mass.



Fig1. Right knee MRI showing thickened synovium.

Gross examination-

We received a single, grey yellow, soft to firm mass measuring 24 x 5 x 2 cm. External surface shows multiple, grey yellow, papillary like excrescences seen arising from underlying flat piece of synovium. Cut section shows homogenous grey yellow areas.



Fig 2. Gross finding of synovial lipomatosis having papillary projections.

Microscopic features-

Microscopy classically revealed multiple, finger like projections lined by hyperplastic synovium. Synovial tissue was infiltrated by abundant benign adipocytes. Focally synovial tissue also showed chronic inflammatory cell infiltrate consisting of lymphocytes and plasma cells.

Based on microscopic findings, final diagnosis of Hoffa's disease (synovial lipomatosis) was given.

Follow up of patient was done for 2 weeks and his recovery was uneventful.

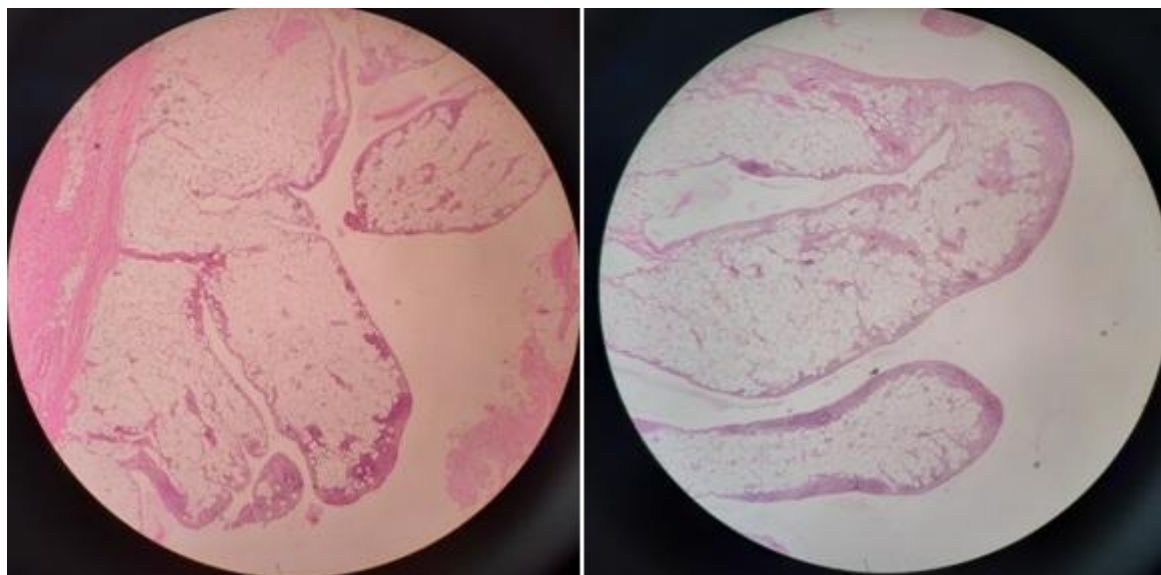


Fig 3. Synovial lipomatosis having villi like structure lined by synovial epithelium (H and E, 100x)

DISCUSSION

Histopathological examination of the synovial tissue has its own value for the diagnosis of various joint diseases as radiological and clinical diagnosis has its

own limitations. Common synovial diseases like rheumatoid arthritis possess no problem in clinical diagnosis when it affects multiple small joints and that too in a female patient but when it affects only a single large joint,

clinical diagnosis becomes troublesome and similarly with various other degenerative joint disease like osteoarthritis, inflammatory disease like pigmented villonodular synovitis. Hoffa's disease

(synovial lipomatosis) is a rare disease commonly affecting knee joint particularly suprapatellar pouch. [4] It rarely affects other joints. Its etiology is unknown.

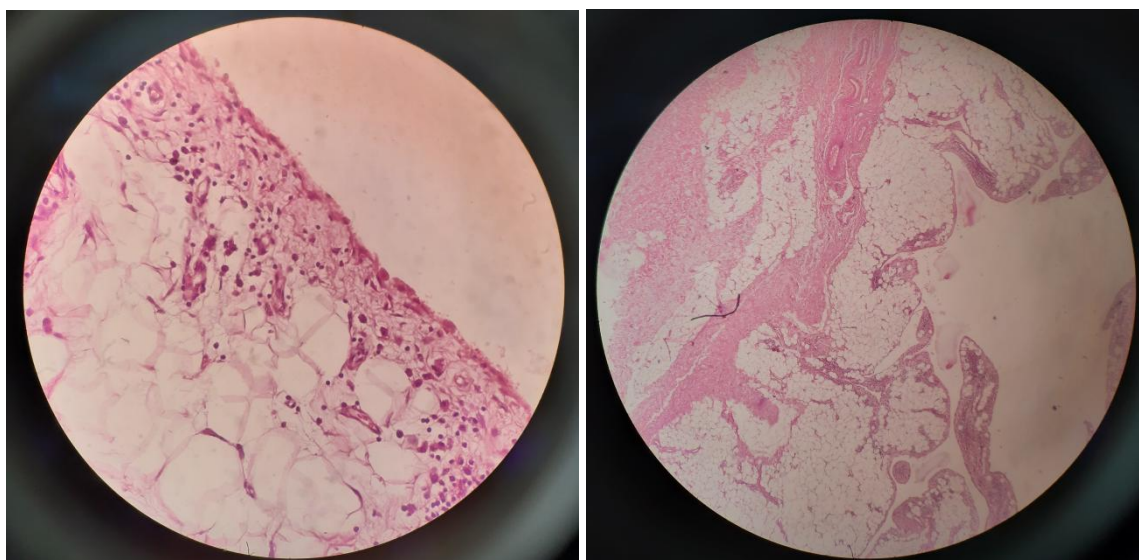


Fig 4. Synovium showing nonspecific chronic inflammation comprised of lymphocytes and plasma cells and infiltration of the synovium with adipose tissue (H and E 400x,100x)

Few authors consider synovial lipomatosis as a reactive process secondary to other types of chronic joint pathology. [5] Another proposed hypothesis is that mesenchymal cells from the synovium get differentiated into adipocytes. Patient usually presents with joint pain, stiffness and joint effusion. Important clinical differentials are pigmented villonodular synovitis, intraarticular lipoma, synovial chondromatosis, synovial hemangioma and rheumatoid arthritis. [6]

X-ray has a limited role in diagnosis of Hoffa's disease. MRI is an important investigation for this rare entity. Arthroscopic or open synovectomy is considered curative by most authors.

In our case, X-ray examination was non conclusive but MRI was helpful. Patient underwent open synovectomy and histopathological examination stamped the diagnosis of Hoffa's disease (synovial lipomatosis).

Grossly the mass had classical villous proliferation of soft yellowish tissue. Microscopically, adipocytes had infiltrated

the synovium. At few foci, synovial hyperplasia was evident. Because of the dense diffuse lymphoplasmacytic infiltration beneath the synovium and at places formation of lymphoid follicles lead to the suspicion of rheumatoid arthritis. So anti-CCP was advised. Fortunately for the patient, it was negative. Probably our patient was suffering from non immune chronic synovitis. Follow up was done for 2 weeks and there were no subsequent symptoms.

To conclude, we are presenting this case not only because this is rare but also for awareness amongst pathologists and radiologists for its classical radiological, gross and microscopic presentation.

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Authors' contributions

All authors contributed toward data analysis, drafting and revising the article and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in the article work and its publication.

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