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Synovial Lipomatosis- A rare case with review of literature

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Abstract

Synovial lipomatosis is a rare benign lesion characterized by villous proliferation of the synovium along with adipose tissue deposition, commonly affecting knee joint. Clinical presentation is longstanding progressive joint swelling, with or without pain and restriction of movements. The diagnosis is confirmed with histopathological examination.

We present a case of synovial lipomatosis in a 43-year-old patient, to highlight its importance in evaluating neoplastic and non-neoplastic conditions of the knee joint. The patient presented with swelling and pain over left knee joint for 6 months with acute exacerbation of pain for 2 days.

Keywords: Synovial lipomatosis, Knee joint, Chronic synovitis.

Introduction

Synovial lipomatosis is an uncommon intra-articular fat containing proliferative lesion. It has predilection for knee joint and can involve other structures like bursa and tendon sheath which have synovial lining. It mimics inflammatory and tumorous lesions [1]. We present a case of synovial lipomatosis, a 43-year-old patient presented with swelling and pain over left knee joint for 6 months with acute exacerbation of pain since 2 days. In the present case report, we have focused on clinicopathological profile and treatment modality of the rare lesion to understand the disease process.

Case report

A 43-year-old male patient presented with swelling and pain over left knee joint for 6 months with acute exacerbation of pain for 2 days. There was no history of trauma or any chronic disease.

On examination, there was swelling, crepitation and tenderness in left knee joint, MRI of the left knee joint revealed secondary degenerative changes with moderate joint effusion. The patient was clinically diagnosed as osteoarthritis. He was planned for knee arthroplasty due to pain and disability. Intraoperatively yellowish fatty tissue with papillary projections was removed and sent for histopathological examination. [figure 1]

Microscopy revealed multiple papillary projections lined by hyperplastic synovial tissue. Core of the papillae showed nests of adipose tissue admixed with dense inflammatory infiltrate composed of numerous lymphocytes and plasma cells, as well as thick-walled blood vessels. [figure 2,3,4,5] Based on these features,

diagnosis was given as synovial lipomatosis. Post operative follow up of the patient is uneventful.

Figure 1: Yellowish fatty tissue with papillary projections

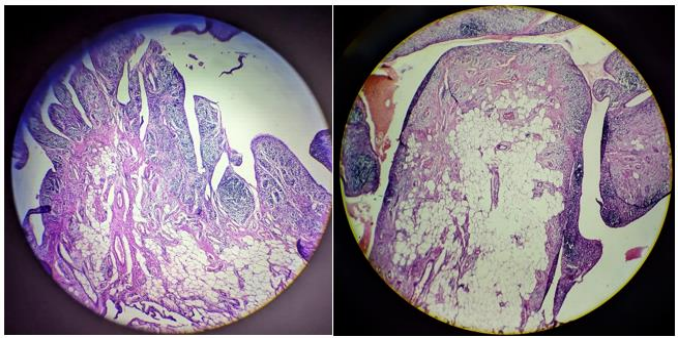

Figure 2 & 3: A lesion with papillary projections lined by hyperplastic synovium, core showing adipose tissue. (H&E 40x and 100x).

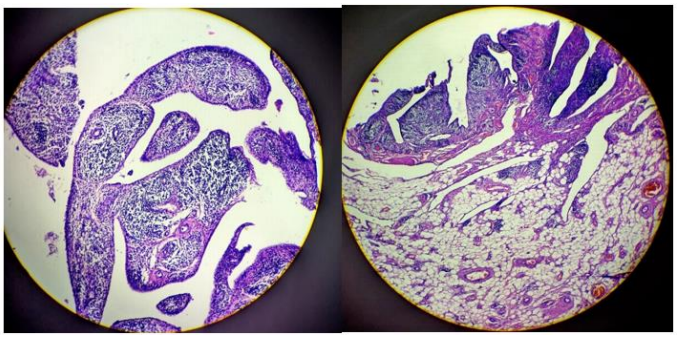

Figure 4 & 5: Core of the papillae showing adipose tissue admixed with dense chronic nonspecific inflammation and thick-walled vessels (H&E 40x and 100x).

Discussion

Synovial lipomatosis is known by the name 'Hoffa's disease' after a German surgeon, Albert Hoffa who first introduced this lesion in 1904, in infrapatellar fat pad. This is a rare entity which mimics tumorous lesions like synovial lipoma, hemangioma and inflammatory conditions like osteoarthritis and septic arthritis [1]. The lesion commonly affects knee joint and accounts for less than 1 % of lipomatous lesions [2]. Commonly affected patients are elderly male [3]. It is also termed as villous lipomatous proliferation of the synovium or lipoma arborescens [4].

Etiopathogenesis of this condition is still not clear. Various causes suggested as trauma, inflammation, rheumatism, development and neoplastic process [5]. This change in the synovium is suggested as a protective response to longstanding injury of the articular cartilage and metaplastic change in a chronologically inflamed synovium [6]. Rao et al have suggested excess fat deposition occurring due to obesity [7]. Clinically the typical presentation is pain and swelling of the knee joint, effusion and crepitus [8].

On clinical examination, differential diagnosis of synovial lipomatosis includes synovial lipoma, hemangioma, chondromatosis, pigmented villonodular synovitis and rheumatoid arthritis [9]. Arthroscopy cannot visualise the fat pad, hence MRI is preferred. For definitive diagnosis of synovial lipomatosis, histopathological examination is mandatory.

The excised mass on gross examination reveals synovial tissue with papillary configuration and yellowish colour [10]. Microscopy shows papillary fronds lined by synovial tissue which is hyperplastic. Core of the papillae shows mature adipocytes with chronic inflammation [8]. Similar observations were noted in our case.

Synovectomy is the treatment and is curative after complete excision [3]. Non-surgical alternatives are radio-synovectomy and chemical synovectomy with osmic acid [11].

Conclusion

Synovial lipomatosis is a rare pseudo-tumorous lesion of the synovium and should be considered while evaluating lesions around knee joint. Histopathological examination plays a significant role in obtaining a definitive diagnosis.

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