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Case Report

Radiology Section

Lipoma Arborescens of Hip Joint in a Case of Ankylosing Spondylitis

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ABSTRACT

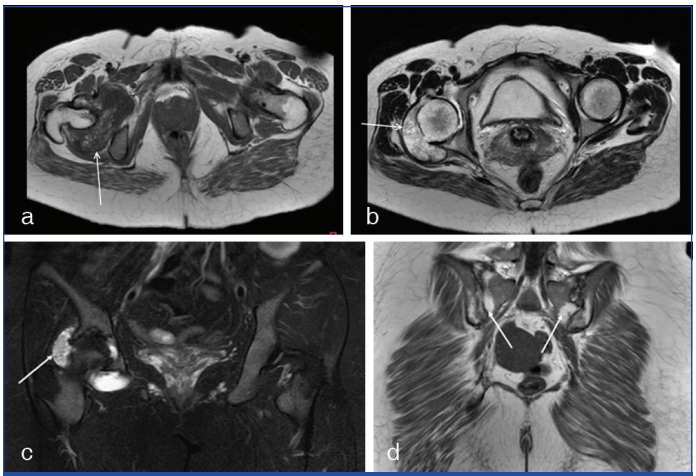
Lipoma arborescens is a rare synovial pathology that is most commonly seen in the knee joint. Only a few cases of this condition have been reported in the hip joint. Here the authors present a case of a 35-year-old female patient who presented with active bilateral sarcroiliitis who was a known case of Human Leukocyte Antigen B27 (HLA-B27) positive ankylosing spondylitis for the past four years. The Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) findings suggestive of Lipoma arborescens of the hip joint in association with ankylosing spondylitis is reported.

Keywords: Computed tomography, Inflammatory conditions, Magnetic resonance imaging, Synovial pathology

CASE REPORT

A 35-year-old female patient presented to Department of Radiodiagnosis who had been a known case of Human Leukocyte Antigen B27 (HLA-B27) positive ankylosing spondylitis for the past four years. She had presented with active bilateral sacroiliitis at that time and had taken infliximab for a short period. Thereafter, she began taking Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) on an irregular basis. She now presented with a complaint of new onset pain in the region of her right hip joint without any restriction of movement. Clinical examination revealed conscious and well-oriented patient status with a Glasgow Coma Scale (GCS) of 15/15. Blood tests revealed total leucocyte count: 15.3×10^9/L with neutrophil and lymphocyte counts of 90% and 8%, respectively. Platelet count was 31,000/mL of blood. Haemoglobin was 10.40 g/dL and serum creatinine and blood urea was 4.35 mg/dL and 135 mg/dL. The HLA-B27 gene was positive.

The MRI showed concentric joint space narrowing of the right hip joint space with significant joint effusion. Multiple intra-articular linear frond like areas appearing hyperintense on T1 Weighted (T1W) images with suppression on fat saturation images were seen. There were changes of bilateral chronic sacroiliitis with partial bony ankylosis [Table/Fig-1]. The CT sections showed linear fat attenuation areas in right hip joint effusion and showed other findings of ankylosing spondylitis [Table/Fig-2]. Based on characteristic imaging findings, the diagnosis of right hip arthritis with secondary lipoma arborescens was made. The patient was treated conservatively with NSAIDs and physiotherapy for four months, after which improvement in symptoms was seen.



[Table/Fig-1]: Axial T1W (1a), and T2W (1b) images showing right hip joint effusion with intra-articular frond like fatty mass (arrows) showing T1W hyperintensity with suppression (arrows) on T2W-fat sat coronal images (1c). Coronal T1W (1d) image demonstrating bilateral sacroiliac joint partial ankylosis with fatty changes along the articular margins (arrows).

[Table/Fig-2]: Coronal (2a) and axial (2b) CT sections showing fat attenuation areas (arrows) in the right hip joint effusion. Coronal (2c) CT section showing bilateral chronic sacroiliitis in the form of marginal erosions, sclerosis, and partial ankylosis. Note the bilateral facetal ankylosis in the lower lumbar region (arrows) secondary to ankylosing spondylitis.

DISCUSSION

Lipoma arborescens is a rare synovial condition that is characterised by the villous like proliferation of fatty tissue along the synovium. It is usually seen in elderly patients in association with chronic degenerative or inflammatory pathology of the joint and is most commonly seen in the suprapatellar pouch of the knee joint [1,2]. Other joints are rarely affected, like the elbow, wrist, shoulder and hip joints [3,4]. Clinically, lipoma arborescens involving any joint is usually present with a swelling of the joint that is gradual and painless. As the effusion volume grows, so does the pain and a reduction in range of motion. Intermittent exacerbations with tense effusions that last several days are common [5]. Currently, MRI can accurately depict the presence of fat in the lesion and is considered the modality of choice for diagnosis.

Although mild proliferation of fat beneath the synovial lining is common and increases with age, lipoma arborescens is defined when the lesion is much more extensive. It is a rare condition, and diagnosis was very difficult prior to the evolution of MRI. It is usually unilateral, seen in older age group patients, and almost always associated with an underlying degenerative process like osteoarthritis, a history of trauma, or rheumatoid arthritis. A rare 'primary' form has also been described, which is seen in young patients without any underlying predisposing inflammatory or degenerative process in the joint [6].

Lipoma arborescens of unilateral hip joint is extremely rare with review of English language literature showing three previous reported cases [7-9]. Ankylosing spondylitis is a chronic inflammatory spondyloarthropathy that is more commonly seen in males and is associated with HLA B-27. The association of lipoma arborescens of the knee with ankylosing spondylosis has also been reported only once [4]. The aetiopathogenesis of this condition is still not

clear, but it is considered a response to chronic irritation and inflammation in the joint [2]. A similar mechanism can be involved when it arises in the setting of ankylosing spondylitis. In present study patient showed changes consistent with chronic right hip arthritis secondary to ankylosing spondylitis with concentric joint space narrowing, erosions, and joint effusion. In the background of chronic inflammation, lipoma arborescens developed.

Diagnosis of lipoma arborescens of any joint on MRI relies on demonstration of an intra-articular frond like fatty mass along the synovial lining, showing fat signal on all sequences with associated joint effusion. Changes of associated arthritis are also usually present. The CT can also show fatty areas in the mass and is useful for ruling out intra-articular loose bodies [10]. The diagnosis of lipoma arborescens is based on the typical findings on MRI. In general, the laboratory findings are non specific. On MRI, it has a pathognomonic aspect, which makes MRI the diagnostic imaging modality of choice [11]. In the past, a biopsy was considered essential for making a final diagnosis, but now the typical MRI findings are sufficient to permit a reliable diagnosis [2].

Differential diagnosis of synovial pathologies is varied. However, intrarticular fat containing masses are limited and include synovial chondromatosis, synovial lipoma, and synovial liposarcoma. Synovial chondromatosis will show fat only at the stage when intra-articular ossified bodies with mature marrow fat appear. Synovial lipoma is rare and a rounded or oval lesion with a thin capsule, unlike the frond like appearance of lipoma arborescens. Synovial liposarcoma is exceedingly rare [9,12]. The usual treatment for lipoma arborescens is synoviectomy, but recurrence can occur in cases with underlying inflammatory conditions. Intra-articular steroids and Yttrium have also been used [4]. Treatment of underlying inflammatory joint disease and physiotherapy may alleviate the symptoms, as seen in index case.

CONCLUSION(S)

Lipoma arborescens of the hip joint is extremely rare, and present case is the first case with CT and MRI findings in association with ankylosing spondylitis. This diagnosis should always be kept in the differential when imaging any joint in patients with chronic inflammatory conditions. Imaging findings, especially MRI, are typical and help in confident non invasive diagnosis.

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