



Case Report

**Tuberculous trochanteric bursitis, a rare cause of hip pain in an immunocompetent patient: A case report**

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**ABSTRACT:** Tuberculous bursitis in an immunocompetent patient is rare and needs a high index of suspicion for accurate diagnosis and management. We present a case of tubercular bursitis of the left greater trochanter in a 45 year old female, which was diagnosed on histopathology after surgical debridement and biopsy of the lesion.

**KEY WORDS:** *Tuberculous bursitis; Greater trochanter, Immunocompetent patient; Hip pain*

**INTRODUCTION**

Tuberculosis of soft tissue can rarely affect muscle<sup>1</sup>, synovial sheath of tendons<sup>2</sup>, fascia<sup>1</sup> and bursa, accounting for about 1% of musculoskeletal tuberculosis<sup>3</sup>. Tuberculous trochanteric bursitis is rare<sup>3-5</sup>. Symptoms are usually mild and occur insidiously, which delays diagnosis and treatment. Tubercular lesions usually occur in immunocompromised patients<sup>4,6</sup> and rarely in an immunocompetent individual<sup>4</sup>. We present a case of an immunocompetent woman presenting with chronic left hip pain due to tuberculous trochanteric bursitis.

**CASE DETAILS**

A 45 year old female presented with complaints of mild pain and swelling over lateral aspect of left hip for 2 months associated with mild limp. There was no history of trauma, diabetes mellitus, renal failure and immunosuppressant or corticosteroid use. Constitutional symptoms like fever, weight loss and anorexia were absent. There was no obvious history of contact with tuberculosis. She reported a similar episode of pain and swelling at the same site about 10 years back which was

relieved by incision and drainage by a quack. However, there was no history of taking antitubercular chemotherapy. She was totally asymptomatic thereafter till she presented to us with complaints of pain and swelling at the same site for 2 months.

General examination was normal. There was no lymphadenopathy. On local examination, there was mild swelling over the left greater trochanteric region with mild thickening, irregularity, tenderness and absence of local rise in temperature on palpation. All movements of the hip were normal except for decreased abduction on the affected side. Obers test and Trendelenberg's sign were positive. There was neither distal neurovascular deficit nor any limb length discrepancy. Laboratory investigations were as follows: Hemoglobin 12.0 g/dL, total leucocyte counts 8,200 cells/cumm and differential counts within normal range (neutrophils 57%, lymphocytes 31%, eosinophils 12%, monocytes 0% and basophils 0%); liver functions, renal functions, blood sugar levels and chest X-ray were normal. ESR (Westergren) was elevated at 33mm in 1st hour, CRP was < 0.6 mg/L and Mantoux test was positive.

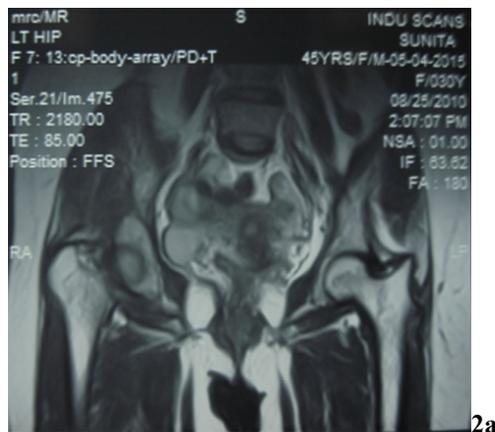
Radiographs of the hip showed a deformed greater trochanter on the affected side with scalloping of the lateral wall having smooth, sharp margins (**Figure 1**). MRI of the hips (**Figure 2a** and **2b**) revealed the same findings with minimal fluid in trochanteric bursa, soft tissue edema under the thickened and irregular iliotibial band with subtle

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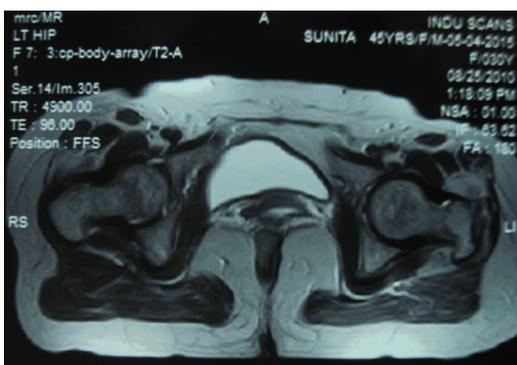
intrasubstance focal hyperintensity at greater trochanter level. Fatty changes were seen in rectus femoris, gluteus medius and minimus muscles. Hip joints and synovium were normal.



**Figure 1: Deformed greater trochanter with scalloping of the lateral wall**



2a

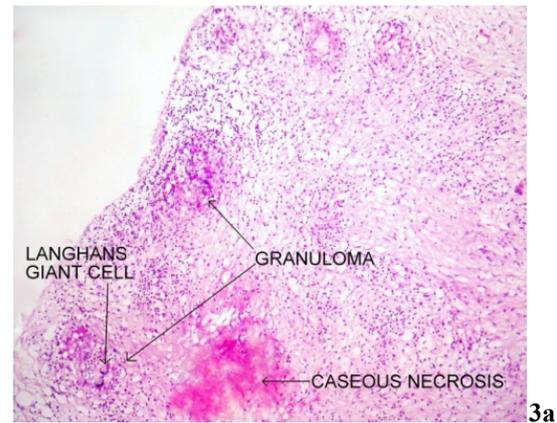


2b

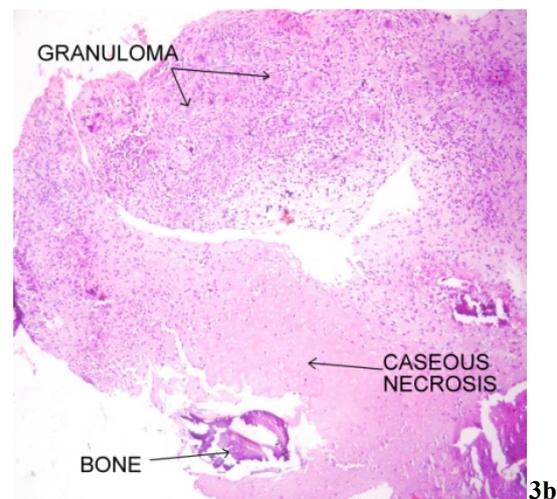
**Figure 2: MRI images of pelvis: (a) Coronal section and (b) Axial section – showing deformed left greater trochanter with scalloped lateral cortex and minimal fluid in trochanteric bursa**

A differential diagnosis of infective bursitis(? tubercular), idiopathic trochanteric bursitis and neoplasm was made on basis of clinico-radiological examination. Open excisional biopsy with debridement of lytic lesion of the left greater trochanter was performed by lateral approach to confirm the diagnosis. Minimal amount of pus was

present which was sent for Gram stain, ZN stain, culture and TB-PCR while bursa and debris were sent for histopathological examination. Gram staining, ZN staining and culture were negative. Biopsy revealed areas of necrosis and granulomas comprising of epithelioid cells, lymphocytes, plasma cells along with Langhans giant cells (**Figure 3a** and **3b**). Diagnosis of tubercular bursitis was made and the patient was started on four drug anti-tubercular treatment; she responded well by decrease in pain and increase in abduction.



3a



3b

**Figure 3: (a) Histological section of the biopsy from trochanteric bursa, showing a granuloma composed of lymphocytes, epithelioid cells and Langhans-type multinucleated giant cells. Caseous necrosis is also present (magnification x 100; haematoxylin and eosin); (b) Histological section showing bone along with many granulomas and caseous necrosis (magnification x 100; haematoxylin and eosin)**

## DISCUSSION

Musculoskeletal tuberculosis occurs in approximately 1% - 5.2% of all tuberculosis cases<sup>4</sup>. Of these, arthritis and spondylitis are the most frequent, whereas bursitis and tenosynovitis are exceptional<sup>4</sup>. Primary tuberculous pyomyositis,

bursitis and tenosynovitis are rare and account for about 1% of musculoskeletal tuberculosis<sup>3</sup>. Tuberculous tenosynovitis most commonly involves tendons of the hand and wrist, whereas tuberculous bursitis occurs most commonly in the trochanteric bursa<sup>7</sup>.

Tuberculous trochanteric bursitis is rare and accounts for 1-2% of all musculoskeletal tuberculosis<sup>3-5</sup>. There is no predilection for any particular age group or sex<sup>6</sup>. Isolated tuberculosis of the greater trochanter and its bursa is rare and generally is a part of multifocal disease involving pulmonary system<sup>6</sup>. In our case there was primary involvement of the greater trochanter and its bursa with no present or past evidence of any other foci of tuberculosis. Musculoskeletal tuberculosis is common in immunosuppressed patients but is rarely seen in immunocompetent<sup>4</sup>. Our case is an immunocompetent woman who was diagnosed with tuberculous trochanteric bursitis.

The differential diagnoses of tubercular trochanteric bursitis include septic bursitis, chronic pyogenic osteomyelitis, post-traumatic bursitis, postural bursitis, idiopathic trochanteric bursitis and neoplasia<sup>4,8</sup>.

Infectious bursitis can occur through hematogenous route or by spread from an adjacent infectious site. The predominant organisms are Gram-negative organisms, anaerobes and in rare cases, mycobacteria (particularly *M. tuberculosis*)<sup>4</sup>. The source of infection of tuberculous bursitis in our patient remains unclear, as there was no evidence of hematogenous dissemination or local involvement due to proximity.

Symptoms of tuberculous bursitis are usually mild and occur insidiously, delaying diagnosis and treatment<sup>3</sup>. There is mild pain and swelling on the lateral aspect of the hip overlying the greater trochanter with or without limp and minimal limitation in functional activities. Constitutional symptoms like fever, loss of appetite and weight loss are often absent, being present in only about 30% of cases<sup>7</sup>. Involvement of gluteus medius and minimus may cause mild to moderate abductor weakness leading to abductor lurch as was seen in our case. Involvement of the hip joint is very rare. Chronic, untreated cases may present with discharging sinus on the lateral aspect of the hip. In our case, progressive increase in pain and swelling over the left greater trochanter region for past 2 months were the presenting complaints with healed scar over the swelling (history of incision and drainage 10 years back for similar complaints).

Radiographs may be normal initially but show erosion or lytic lesion of the greater trochanter in later stages. MRI is the investigation of choice as it helps in defining the size and extent of soft tissue mass along with the bony involvement<sup>6</sup>. However, it is not specific for tuberculosis<sup>9</sup>. In our case the

origin and extent of the lesion was defined accurately on MRI.

Investigations may reveal an increased ESR, CRP, positive Mantoux test and TB-PCR but diagnosis is established by culture or a biopsy showing caseating granulomas lined by epithelioid cells and Langhans giant cells. The interferon gamma test by T-SPOT has been reported in literature for making a diagnosis<sup>3</sup>.

Optimal treatment for tuberculous trochanteric bursitis remains debatable. Anti-tubercular treatment alone can eradicate the disease at any stage, although surgery is indicated when it is complicated. High recurrence rates are described in some series of patients treated with chemotherapy alone<sup>4</sup>. In cases with extended trochanteric involvement some surgeons recommend delaying surgery for several weeks after initiating anti-tuberculous chemotherapy<sup>4</sup>. Some studies have recommended starting anti-tubercular chemotherapy even before a definitive diagnosis is made to reduce the risk of dissemination of mycobacteria during surgery<sup>4,10</sup>.

A review of literature showed a few case reports and case series of primary tuberculosis of the greater trochanter<sup>5,6,8,11</sup>. In most of these reports, the diagnosis was established by biopsy and complete excision of the lesion along with chemotherapy was curative. In our case there was extended trochanteric involvement and we preferred to start antitubercular chemotherapy after histopathological confirmation of the disease. Arthroscopically performed drainage and bursectomy followed by antitubercular chemotherapy has been reported as a modality of treatment<sup>3</sup>.

Tuberculosis is known to recur in immunocompromised individuals like elderly, corticosteroid-dependent and HIV-infected patients. There is a high recurrence rate described in some series of patients of tubercular trochanteric bursitis treated only with antitubercular drugs<sup>4</sup>. Studies have reported reactivation of trochanteric tuberculosis after previous surgical drainage in the pre-chemotherapy era<sup>8,12</sup>. This raises the possibility that our patient might have suffered from tuberculosis of the trochanteric bursa 10 years back, treated by incision and drainage alone, followed by reactivation. However since records of the previous episode are not available with the patient, it is not possible for us to conclude whether the current episode was reactivation of the initial episode (which was tubercular, treated only by incision and drainage without antitubercular chemotherapy and remained quiescent for a long period of 10 years) or a new infection unassociated with the previous episode.

## CONCLUSION

To summarize, tuberculous trochanteric bursitis may occur in isolation, without other systemic or musculoskeletal manifestations in an immunocompetent individual. Its diagnosis requires a high index of suspicion and it should be considered in the differential diagnosis of hip pain.

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