ejpmr, 2017,4(11), 188-190

SJIF Impact Factor 4.161

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

PRIMARY TUBERCULOUS PYOMYOSITIS IN AN IMMUNOCOMPETENT INDIVIDUAL: A RARE MANIFESTATION

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Article Received on 22/08/2017 **Article Revised on 12/08/2017** **Article Accepted on 03/10/2017**

ABSTRACT

Tuberculosis is an important cause of morbidity in the Indian society particularly among the low socioeconomic population. It can involve virtually any organ and manifests itself in various forms. Primary tuberculous pyomyositis without coexisting active skeletal or extra-skeletal tuberculosis is a rare manifestation of musculoskeletal tuberculosis especially in an immunocompetent individual. Skeletal muscle tuberculosis is a rare entity in itself because muscle is an unfavourable site for survival and multiplication of Mycobacterium tuberculosis. It can cause a diagnostic dilemma for clinicians because of its similar presentation to pyogenic abscess, hematomas, parasitic infections like cysticercosis, soft tissue sarcomas, and myopathies. We present a case of a 25-year-old immunocompetent female with a swelling at lateral aspect of right thigh. Diagnosis was established by cytology and acid fast stain. Patient improved after antitubercular therapy. In a tubercular endemic country, a high index of suspicion is required to diagnose this disease which can be cured completely.

KEY WORDS: Tuberculous pyomyositis, Rare manifestation, Immunocompetent.

INTRODUCTION

Musculoskeletal tuberculosis occurs in only 3% of patients with tuberculosis, mostly presenting with spondylitis, osteomyelitis, or arthritis.[1, 2] Primary tuberculous pyomyositis is a rare but possible etiology of myositis constituting less than 1% of skeletal tuberculosis.[1] Tubercular myositis in an immunocompetent patient without underlying osseous involvement is an unusual presentation and its pathogenesis is still unclear. Petter recorded only one case of primary muscular tuberculosis in over 6,000 cases of all types of tuberculosis, with a frequency of 0.015%.[2,3]

MATERIALS AND METHODS

A 25-year-old female presented with a 1 year history of a slowly progressive lump in the lateral aspect of right thigh. She had no pyrexia, nocturnal sweats or any significant weight loss. There was no history of any recent trauma, intramuscular injection at the local site, diabetes, corticosteroid usage and no past history of tuberculosis or contact. She did not show any features of immunosuppression. On examination the patient was afebrile and well nourished, with no pallor or lymphadenopathy. Systemic examination findings were unremarkable.

Local examination revealed a diffuse, non-tender soft-tissue mass of approximately 5x4 cm on the lateral aspect of right thigh. The overlying skin showed scars for which the patient said were due to trauma in childhood (Fig 1). Examination of bilateral hip and knee joints was unremarkable. There was no spinal tenderness or any para-spinal mass.

Blood investigations were unremarkable with only raised ESR. X- ray right femur showed a diffuse soft tissue swelling on the lateral aspect of proximal one third region(Fig 2). X-rays of chest (Fig 3), lumbar spine (Fig 4) and bilateral hip joint (Fig 5) were normal. USG abdomen was normal. Serology for HIV was non-reactive.

FNAC of the mass was done. It yielded purulent aspirate. Smears showed abundant degenerated and necrotic material with few polymorphs and mononuclear inflammatory cells. No atypical cells were seen (Fig 6). Stain for Acid Fast Bacilli was POSITIVE (Fig 7).

Patient was referred to Directly Observed Treatment Short-course (DOTS) and was started on anti-tubercular treatment. She has shown improvement since then and the lump is showing signs of regression.

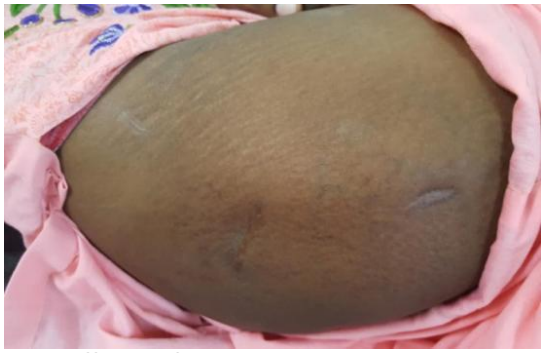

Fig. 1: Diffuse Soft Tissue Mass on Lateral Aspect of Right Thigh.

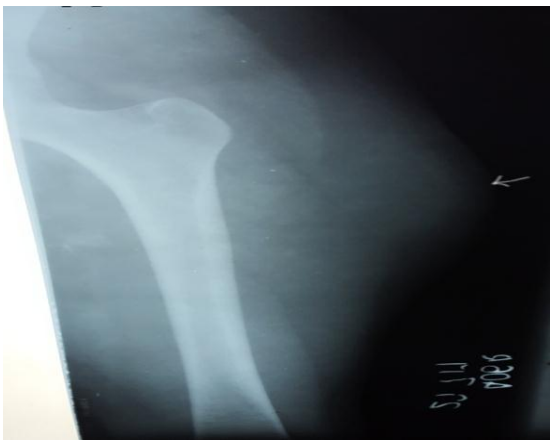

Fig 2: X Ray Right Femur Showing Soft Tissue Swelling.

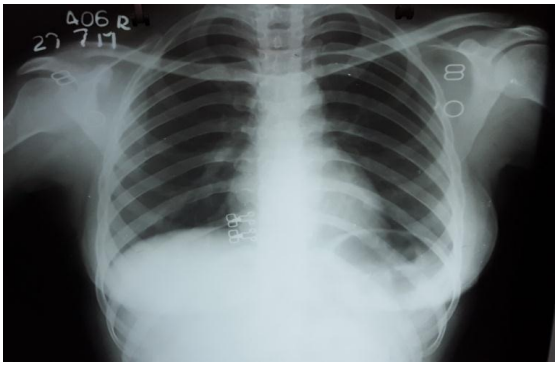

Fig 3: Unremarkable Chest X Ray.

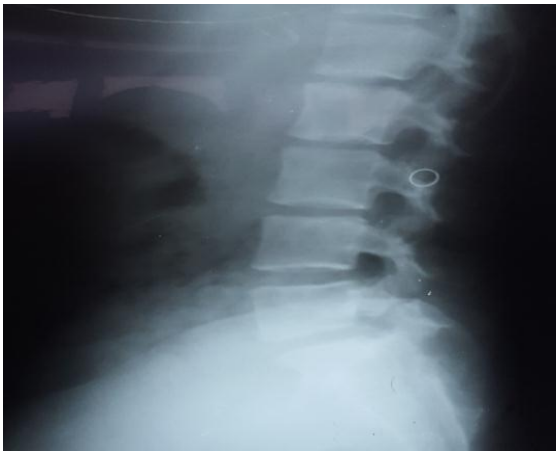

Fig 4: Unremarkable X Ray L-S Spine.

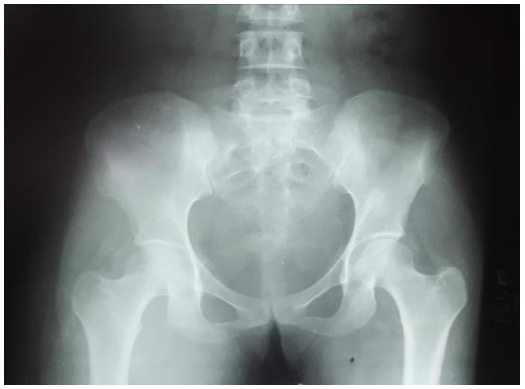

Fig 5: Unremarkable X Ray Bilateral Hip Joint.

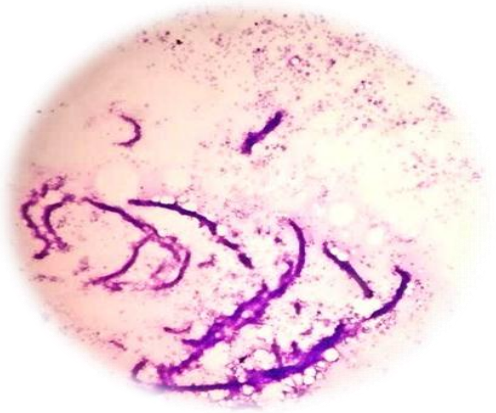

Fig 6: Cytology Smear Showing Necrotic Material and Degenerated Cells.

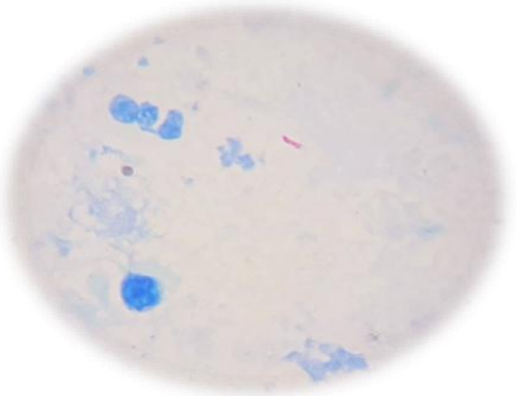

Fig 7: AFB positive smear.

DISCUSSION

Since the introduction of antituberculous chemotherapy, the incidence of tuberculosis in the world has declined considerably. The disease is usually caused by Mycobacterium tuberculosis, which affects the lungs primarily in most patients. Extra pulmonary infection accounts for 40% of all tuberculosis cases.[1] Common sites of extra pulmonary tuberculosis are lymph nodes and abdomen.[1,4] Musculoskeletal tuberculosis occurs only in 3% of cases. Although the infection is presumed to spread to the musculoskeletal system through a focus, the prevalence of active pulmonary tuberculosis

coexisting with musculoskeletal tuberculosis has been about 29 percent (147 of 499 patients).[2]

Common forms of musculoskeletal tuberculosis are spondylitis, osteomyelitis, or arthritis.[1,2] Primary skeletal muscle tuberculosis is extremely rare and earlier studies have reported only four cases of muscle tuberculosis in 2224 autopsy specimens from tuberculosis patients.[2,3] The few case reports in the literature about tubercular pyomyositis are in immunodeficient, HIV infected, and renal failure patients or in patients on corticosteroids, immunosuppressive drugs, or chemotherapy.[5] It also has been described in immunocompetent patients within different muscles, the commonest being thigh.[1,2]

Commonest route of involvement is by contagious spread (60% cases). Haematogenous spread accounts for 30% of cases. In 8% of the cases cause is direct inoculation.[6] The most common sites of involvement are paraspinal and chest wall muscles by contagious spread. Spread to thigh muscles is usually haematogenous in case of a primary focus elsewhere. Tubercular pyomyositis in the absence of contagious spread from underlying bony lesion or haematogenous spread could occur by direct inoculation. It could be due to local trauma or by way of injection by direct penetration of tubercle bacilli into the muscle tissue by hypodermic injections. Such a case was described by Coope after penicillin therapy.[2,7,8]

Skeletal muscles are rarely infected by tubercle bacilli because of poor oxygen content, high lactic acid concentration, and paucity of reticuloendothelial cells.[4,5] Tubercular bacilli do not produce proteolytic enzymes; hence, it does not cause a pyogenic infection, but it may get secondarily infected leading to abscess formation in surrounding tissue.[1]

Clinical manifestations are usually nonspecific. This might lead to diagnostic dilemma. Tubercular pyomyositis is commonly misdiagnosed as a soft tissue sarcoma, parasitic infection like cysticercosis or hydatid cyst, inflammatory myositis, hematoma with secondary infection or a lipoma because of its close resemblance clinically.[6] There is usually a delay in diagnosis because of its atypical presentation, lack of knowledge of the disease, absence of early specific signs, and a large number of differentials. Delay in treatment may result in irreversible limb deformity and functional disability.[9] High index of clinical suspicion is the key in diagnosis especially in endemic areas.

Blood investigations usually are normal except a raised ESR which is a consistent finding. Tissue diagnosis remains the gold standard investigation. Needle aspiration from the lesion shows necrosis with or without granuloma. Yield of AFB is not so high in these cases. However, biopsy and culture are required for confirmation of diagnosis, which were not necessary in our case as stain for AFB was positive.

We present this case of a primary tubercular pyomyositis in an immunocompetent patient without any identifiable focus elsewhere in the body in a tubercular endemic country. Patient was started on anti-tubercular treatment and she recovered and is doing well on follow-up.

CONCLUSION

The tuberculosis incidence has increased in the last decades. Although muscle tuberculosis is a rare entity, it should also be considered in the differential diagnosis of painful soft tissue swellings especially in people born in tubercular endemic areas. The prognosis is good in tuberculous myositis with early appropriate chemotherapy and surgical drainage when needed.

ACKNOWLEDGEMENT

The authors would like to thank the patient for her cooperation and consent to present this paper.

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