Tuberculosis of the Iliac Crest - A Rare Case

Preetham. N[1]

Abstract

Tuberculous osteomyelitis is common, but isolated involvement of the ilium bone is a rare entity. We describe a case that had an insidious onset of symptoms and the red flag sign being worsening of symptoms, despite various antibiotic regimens. Histopathological demonstration of necrotizing granulomatous inflammation led to the diagnosis. Surgical excision and antitubercular therapy resulted in clinical recovery. Rarity of iliac crest tuberculosis and its atypical presentation often leads to delay in diagnosis. This case report highlights some of the key features that help in early diagnosis and treatment.

Keywords: Tuberculosis, Iliac crest, Curettage, Biopsy

Introduction

Tuberculosis is a major health problem worldwide, especially in developing countries such as India [1]. It represents the ninth leading cause of death worldwide, surpassing human immunodeficiency virus and malaria [2].

Skeletal involvement constitutes <3% [1] of tuberculosis.

Fifty percent of skeletal tuberculosis involves spine [3]. Involvement of flat bones such as innominate bone is a rare entity, true incidence not being known [4].

Despite major advances in the field of medicine, the diagnosis of tuberculosis is often challenging. This leads to delay in diagnosis, which results in delay in treatment, increase in number of complications, and other forms of extra-pulmonary tuberculosis [5].

Case Report

A 20-year-old female presented with history of pain and swelling in the right lower quadrant of the abdomen. She had on and off fever for the past 1year. She was given analgesics and antibiotics, but the symptoms worsened over a period of 2 months. She had no history of cough or chest pain. She had no history of abdominal or back pains. She was previously diagnosed with Type 1 diabetes mellitus and was on treatment for the same. There was no history of weight loss or contact with case of tuberculosis.

On examination, the patient was afebrile (98.6°F). There was no pallor. There was fluctuant swelling over the anterior superior iliac spine with tenderness over the iliac crest. The underlying bone was irregular.

Blood investigations revealed the following findings:

- Hemoglobin 10.5g/dl
- Total leukocyte count 8.8×103/mm3
- Neutrophils 82%
- Lymphocytes 10%.

Radiograph of the pelvis with both hips showed lytic lesion behind the right anterior superior iliac spine (Fig. 1).

Magnetic resonance imaging (MRI) scan – Features are suggestive of chronic osteomyelitis in the anterior superior iliac spine with collection in the anterior abdominal wall and along the right iliacus muscle (Fig. 2 and 3).

Ultrasound sonography test scan –Ill-defined hypoechoic heterogeneous collection measuring 8.0×1.8×4.0 cm3was noted in the intramuscular plane in the right iliac fossa. The underlying bony echoes (iliac crest) appear irregular (Fig. 4).

Excision biopsy was planned under spinal anesthesia. Curettage and drainage of the intramuscular collection were done. All the necrotic tissues were debrided, and the material was sent for histopathological examination (Fig. 5).

Histopathological report showed the following findings:

- Gross – Received specimen consists of gray-white to gray-brown bit of tissues.
- Microscopy – Fragments of bony tissue, large areas of necrosis, dense chronic inflammatory cell infiltrate, and multiple epithelioid granulomas composed of epithelioid cells, and Langhans type of giant cells (Fig. 6 and 7).
- Impression: Histological features are of necrotizing granulomatous inflammation suggestive of tuberculous osteomyelitis.

Antitubercular treatment regimen and duration – The patient was put on 2

[1]Department of Orthopaedics, Bangalore Medical College and Research Institute Bangalore.

Address of correspondence :
Dr. Preetham. N,
Department of Orthopaedics, Bangalore Medical College and Research Institute Bangalore.
E-mail: preetham_1875@yahoo.co.in

months of intensive phase with isoniazid, rifampicin, ethambutol, and pyrazinamide and 10 months of isoniazidand rifampicin. The total duration of treatment was 1year.

The patient was called for follow-up at6 weeks, 3 months, 6 months, and 1year. Surgical wound healed with primary intention within 2 weeks. The patient recovered well with no new symptoms, and there was general well-being.The patient was back to her regular work within 6 weeks of treatment. One-year follow-up radiograph showed signs of healing (Fig. 8).

Discussion

Tuberculosis usually presents as pulmonary infection; however, 10–20% of the cases present as extrapulmonary tuberculosis. Osteoarticular tuberculosis accounts for 10–20% of extrapulmonary tuberculosis, i.e., 1–4% of all tuberculosis cases [6]. Tuberculosis of the iliac crest is extremely rare, and very few cases have been reported earlier [7].

The diagnosis of extrapulmonary tuberculosis is often difficult because of different spectraof clinical presentation and non-availability of sensitive or specific diagnostic tests [8].

Patients may present with local pain that gradually worsens over weeks to months and not responding to analgesics. Some present with restricted movements. Few present with cold abscessand/or a sinus [9].Only 30–40% of cases present with constitutional symptoms and mostly have an insidious presentation, and therefore, the suspicion of skeletal tuberculosis can be low. Bone pain resistant to analgesics should alert the orthopedic surgeons of infection neoplasia or autoimmune conditions [10,11].

Radiographs may be initially normal or show features such as osteolysis, osteopenia, sclerosis, periostitis, or cystic lesions. MRI and bone scans might help pick up findings, but there are no pathognomonic signs. If the diagnosis of osteomyelitis is uncertain, biopsy (percutaneous/open) or fine-needle aspiration cytology (FNAC) should be performed. It is necessary to establish the diagnosis and define the treatment plan [9, 12]. If blood and FNAC cultures are negative and suspicion persists, a repeat biopsy must be performed [13, 14]. In case of chronic osteomyelitis or failure to respond to empirical therapy, tissue samples should always be subjected to fungal, bacterial mycobacterial culture [15, 16].

In our case, the patient presented late because of insidious onset of symptoms and she was initially treated empirically. It was approximately 6 months from the initial symptoms, and the diagnosis was confirmed. The average delay from onset of symptoms to diagnosis of skeletal tuberculosis is 16 months [17].

Therefore, tuberculosis must be considered as a differential diagnosis to allow early diagnosis and treatment.

Curettage of bone lesions allows better therapeutic results because tuberculosis sequestered in necrotic tissue not allowing the antitubercular treatment to act on them. Improvement in clinical symptoms and normalization of inflammatory markers define the therapeutic response and duration [18, 19, 20].Recurrence is common in tuberculous osteomyelitis. These patients should be followed up routinely during and after chemotherapy.

Conclusion

Tuberculosis of the iliac crest is extremely rare, and diagnosis is often challenging due to the atypical presentation. The delay in treatment is due to lack of definitive signs and delay in establishing diagnosis. Tuberculosis must be confirmed by histopathological examination or by culture. Combination of debridement and curettage with antitubercular therapy leads to rapid clinical recovery.

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