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IP Journal of Diagnostic Pathology and Oncology

Journal homepage: https://www.jdpo.org/

Case Report

Isolated tuberculous osteomyelitis of mandibular condyle: A rare presentation unmasked by domestic violence

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ARTICLE INFO

Article history:
Received 06-10-2023
Accepted 27-01-2024
Available online 31-01-2024

Keywords:
Tuberculosis
Condyle
Extrapulmonary tuberculosis
Tubercular osteomyelitis

ABSTRACT

Tuberculosis (TB) is a granulomatous infectious disease caused by Mycobacterium tuberculosis. Tuberculosis can be pulmonary as well as extrapulmonary. Tubercular osteomyelitis accounts for about 10% of all cases of extrapulmonary tuberculosis. We present a case of a 40-year-old female with pain and swelling developing after a slap by her husband. The swelling was investigated including a biopsy and histopathological examination confirmed the diagnosis of tubercular osteomyelitis of the mandibular condyle.

1. Introduction

Tuberculosis (TB), an infectious disease caused by Mycobacterium tuberculosis, remains a significant global health concern. Despite advancements in treatment and prevention, TB ranks among the top 10 leading causes of death worldwide.[1] India bears a disproportionate burden of TB, accounting for nearly one-third of global cases.[2]

While TB primarily affects the lungs, extrapulmonary TB, affecting sites beyond the lungs, is increasingly prevalent.[3] Oral manifestations of pulmonary TB are rare, typically involving the palate, lips, buccal mucosa, tongue, and jaw bones.[4] Among extrapulmonary TB cases, bone involvement accounts for approximately 10%, with the spine being the most common site.[5] Mandibular involvement is even rarer, with mandibular condyle involvement being exceedingly uncommon.

This case report presents a unique instance of tubercular osteomyelitis of the mandibular condyle in a 40-year-old female. The patient's symptoms, which were exacerbated by an episode of domestic violence, highlight the diagnostic challenges associated with primary tuberculosis of the mandibular condyle.

2. Case Summary

A 40-year-old Indian female presented with the complaint of pain and swelling in the left TMJ region developing after she had been hit on the face which progressively increased over a period of three months along with reduced mouth opening. The patient's medical history was essentially non-contributory. The patient was undernourished and moderately built at the time of examination and was afebrile. Systemic examination (central nervous system, cardiovascular system, respiratory system, and gastrointestinal system) was unremarkable. The patient's chest X-ray findings were normal, which ruled out active pulmonary tuberculosis. All the vital signs were well within the normal ranges. Local examination revealed a diffuse unilateral swelling with an indistinct border in the left preauricular region measuring 2x1cm in size without including the ear lobule. On palpation, the swelling was

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https://doi.org/10.18231/j.jdpo.2024.013

tender, firm, and non-fluctuant and was associated with the local rise in temperature over the swelling. Mouth opening was painful and reduced to around 30mm only with a noticeable deviation of the mandible to the left side. No regional lymphadenopathy was observed.

CECT revealed – soft tissue density with peripheral enhancement in the preauricular region extending up to the condyle of the left mandible with erosion and destruction of the auricular surface. The remaining temporal bone, inner and middle ear were unremarkable. The CECT impression was osteomyelitis of the condyle of the left mandible extending in the temporomandibular joint space.

Biopsy from the TMJ was taken under general anaesthesia and showed hypercalcified necrotic bony trabeculae embedded in soft tissue aggregates. Microscopic examination showed tuberculous granulation tissue predominantly comprising collections of histiocytes and epithelioid cell granulomas, Langhan giant cells, and caseation necrosis. Zheil – Nelson (ZN) staining with 20% H_2SO_4 was positive for acidfast bacilli confirming tubercular osteomyelitis.

It is important to note that the patient's undernutrition may have also made her more susceptible to developing tubercular osteomyelitis of the mandibular condyle.

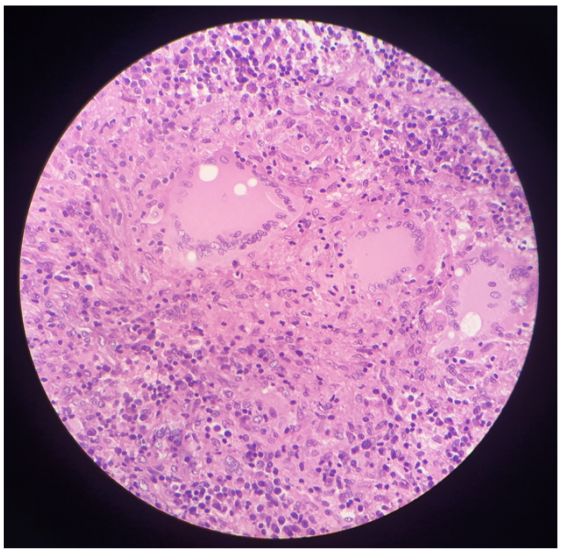

Figure 1: Microscopy showing presence of caseating epitheloid granuloma and langerhan giant cells

3. Discussion

Orofacial tuberculosis (OFTB) is a rare manifestation of extrapulmonary tuberculosis, accounting for approximately 0.1 to 5% of all tuberculosis cases.[1] It is more prevalent in developing countries, particularly among children and adolescents.[6] In India, OFTB constitutes about 1% of all extrapulmonary tuberculosis cases.[3] The clinical

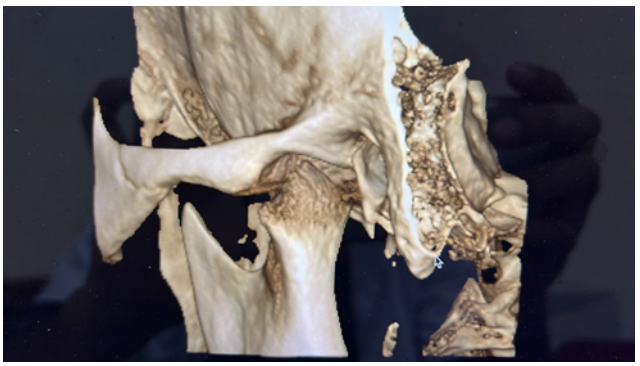

Figure 2: 3D constructed image showing erosion and destruction of articular surface of the mandibular condyle

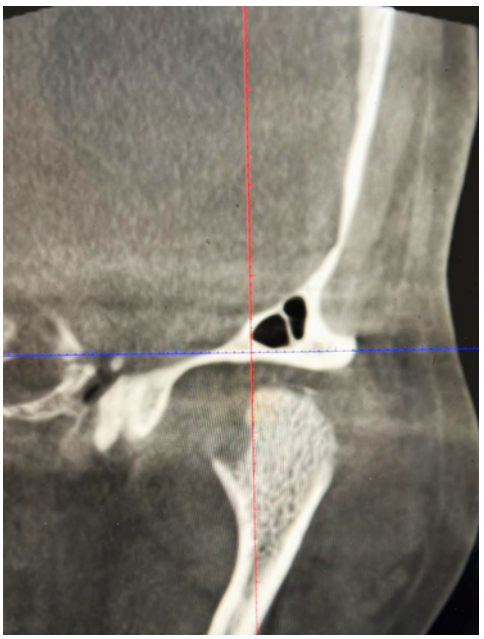

Figure 3: CECT image showing erosion of articular surface of condyle

presentation of TB in the temporomandibular joint (TMJ) is often non-specific and can mimic other conditions such as osteomyelitis, arthritis, or chronic joint disease.[4] Common symptoms include: Pain and swelling in the TMJ region, limited mouth opening, deviation of the mandible, local tenderness and warmth, fever and night sweats. Differentiating TB from other TMJ conditions can be challenging due to overlapping symptoms. However, certain features may suggest a tubercular etiology: Slow progression of symptoms over weeks or months, lack of response to conventional antibiotics, presence of risk factors for tuberculosis, such as history of TB, close contact with a TB patient, or immunosuppression. Radiological findings in tubercular osteomyelitis of the mandible can be subtle and may not become apparent

until significant bone destruction has occurred.[5] Early radiographic changes include: Decalcification and distortion of trabecular margins, aberrant areas of radiolucency.[7] As the disease progresses, more pronounced changes may appear such as loss of cortical bone definition, moth-eaten appearance of bone destruction, subperiosteal abscess formation, sequestrum formation.[8]

Diagnosing TB in the TMJ can be challenging due to the non-specific clinical presentation and subtle radiological findings.[9] Definitive diagnosis often requires biopsy and histopathological examination, which may reveal tuberculous granulation tissue composed of epithelioid cells, Langhans giant cells, and caseation necrosis, Acid-fast bacilli on ZN staining. Early diagnosis and treatment of TB in the TMJ are crucial to prevent further bone destruction and joint dysfunction. Treatment typically involves a combination of antitubercular medications for at least six months. Surgical intervention may be necessary in cases of extensive bone destruction or abscess formation. Early diagnosis and management of TB in the TMJ are essential for several reasons: prevents further bone destruction and joint dysfunction, reduces the risk of complications such as subperiosteal abscess formation or sequestrum formation, improves the patient's quality of life and functional status, decreases the risk of transmission to others.

4. Conclusion

Orofacial tuberculosis (OFTB) is a rare but potentially debilitating manifestation of extrapulmonary tuberculosis. The temporomandibular joint (TMJ) is a rare site of TB involvement and can mimic other conditions, making diagnosis challenging. Early diagnosis and treatment are crucial to prevent joint destruction and improve patient outcomes. High index of suspicion is essential for TB diagnosis in TMJ disorders and early diagnosis and proper investigation can rule out TB in osteomyelitis cases. Timely treatment can prevent further bone destruction, joint dysfunction, and potential complications.

5. Source of Funding

None.

6. Conflict of Interest

None.

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Cite this article: Dalal A, Mehta A, Mahajan S, Arora S, Sen R. Isolated tuberculous osteomyelitis of mandibular condyle: A rare presentation unmasked by domestic violence. *IP J Diagn Pathol Oncol* 2024;9(1):73-75.