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CASE REPORT

Tubercular osteomyelitis of the condyle and ramus of the mandible: A case report

Gururajaprasad Kaggal Lakshmana Rao[1], Sneha Rao[2]

[1]Department of General Dentistry, Private Practice, Eloret Hospital Pvt. Ltd, Eldoret, Kenya, [2]Department of Internal Medicine, Private Practice, Olmsted Medical Center, Rochester Southeast, Mn, USA

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Correspondence:
Dr. Gururajaprasad Kaggal Lakshmana Rao, 308, Doctor's Plaza, Eloret Hospital Pvt. Ltd, Eldoret, Kenya.
E-mail: gururajkaggal@gmail.com

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Abstract

Tubercular osteomyelitis most commonly affects the spine but can involve any bone including ribs, pelvis, and long bones. Over 15 cases with involvement of the mandible have also been reported, and mostly involve the body of the mandible. Tubercular osteomyelitisof the mandibular condyle and ramus is very rare, and only three cases have been reported so far. Here, we present a 27-year-old otherwise healthy adult male, who presented with a painless swelling of his right jaw associated with severe trismus. The patient did not have any pulmonary or constitutional symptoms, and the chest radiograph showed no evidence of pulmonary tuberculosis. MRI of the face showed osteomyelitis affecting the mandibular condyle and the ramus. Ultrasound-guided aspiration of the lesion showed caseating necrosis suggestive of *Mycobacterium tuberculosis* infection. Following drainage of the abscess cavity, the patient received antitubercular therapy for 6 months which led to complete remission.

Introduction

Tuberculosis is a common infectious disease caused by *Mycobacterium tuberculosis*. The most common site for tubercular osteomyelitis is the spine. The infection mainly involves the lung but can also affect other parts of the body such as the central nervous system, lymphatics, genitourinary, gastrointestinal, bone, and joints. When the bones and joints are infected, it is termed osseous tuberculosis, a form of osteomyelitis. The diagnosis of musculoskeletal tuberculosis is a challenge to the clinician as there is no evidence of pulmonary disease in more than half of the cases. A delay in diagnosis is common given the indolent nature of tuberculosis of bone and joint. The diagnosis may be suspected based on radiological features but needs confirmation by histopathology. This is especially true when the disease involves an uncommon site such as mandible. Among the reported cases of mandibular involvement, only two were reported to involve the condyle. The ramus involvement has been reported once while the others affected the body of the mandible. We report another case of primary tubercular osteomyelitis of the mandible involving the condyle and ramus.

Case Report

A 27-year-old Indian male presented with a progressively increasing hard swelling on the right side of his face in the region of the cheek. The swelling occurred over a period of 10 days. The initial painless and non-tender swelling in the pre-auricular region was associated with rapidly progressing trismus. There was no history of fever, weight loss, night sweats, or trauma. The swelling persisted for 6 weeks before the patient sought medical intervention and advice. By then, the swelling had a firm to hard consistency and was painful. It extended from the tragus to the lower border of the mandible and measured about 4 cm × 3 cm. There was no intraoral extension or dental defect noted. There was also no regional lymphadenopathy. Mouth opening was markedly reduced at 12 mm. The patient was initially treated with oral antibiotics for 7 days for possible pericoronitis, but there was no improvement. A chest radiograph [Figure 1] did not reveal any abnormality. Further, radiological investigations included a computed tomography (CT) and a magnetic resonance imaging (MRI) to better define the extent and type of lesion. The CT revealed areas of destruction within the right mandibular condyle [Figure 2] and MRI showed diffuse soft tissue thickening with abscess formation involving the right masseter and pterygoid muscles, measuring 1.5 cm × 2.1 cm [Figure 3].

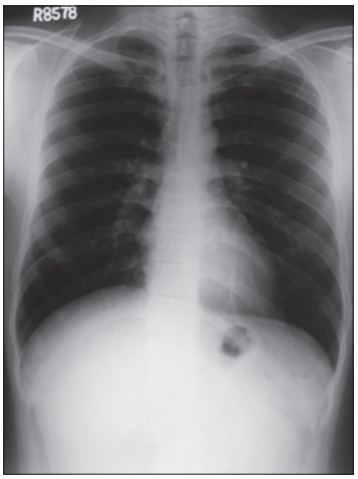

Figure 1: Chest radiograph showing no foci of infection

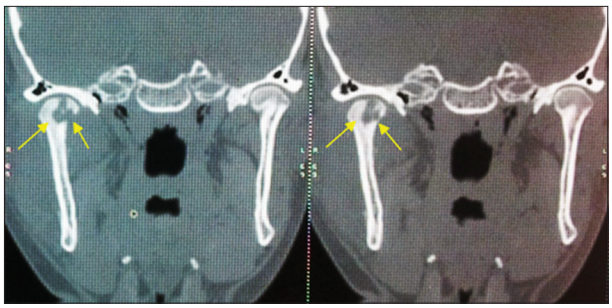

Figure 2: Computed tomography image of the head revealing the osseous destruction of the head of the right condyle

Parotid gland was displaced posteriorly with no evidence of an intraparotid lesion.

An ultrasound-guided fine needle aspiration was attempted and 6 cc of straw-colored fluid was aspirated and the fluid was sent for microbiological studies. Gram staining showed no degenerative cells and microorganisms. Acid-fast bacilli were not seen, culture and sensitivity showed no growth at the end of 48 h of incubation at 37°C. He subsequently underwent incision and drainage under general anesthesia, and histopathological examination of abscess cavity wall revealed areas of necrosis surrounded by inflammatory granulation tissue with sheets of macrophages, epithelioid cells, Langerhans giant cells, numerous lymphocytes, and plasmocytes with occasional refractile material, and dead bone. Since this was suggestive of a tuberculoid granuloma, antitubercular therapy in the form of isoniazid (600 mg), rifampicin (450 mg), pyrazinamide (1500 mg), and ethambutol (1200 mg) was started. The patient completed 6 months of therapy which resulted in complete resolution of swelling and trismus.

Discussion

Tubercular infections of the bone are usually seen in association with other primary focus of infection. The most common area of occurrence is the spine[1] with primary tubercular osteomyelitis accounting for 2% of the total tuberculosis cases reported, of which only 12 cases reported the involvement of the body of mandible.[2,3] This case presents an atypical presentation of primary tubercular osteomyelitis affecting the mandibular condyle and ramus.[4-9] Similar to the before reports, our patient also had progressively increasing hard swelling on the right side of his face in the region of the cheek. However, unlike the other patients, our patient had initial painless and non-tender swelling that was associated with rapidly progressing trismus.[10] The swelling was present for 6 weeks before medical care was sought. The mouth opening was limited significantly to 12 mm.[11] The CT revealed areas of destruction within the right mandibular condyle [Figure 2] and MRI shows diffuse soft tissue thickening with abscess formation [Figure 3]. The histopathological examination of the abscess cavity wall revealed cells consistent with mycobacterial tuberculosis infection which led to the eventual diagnosis. While a similar inflammatory infiltrates can be seen with actinomycosis[12] or other chronic fungal infection, the presence of caseous necrosis strongly suggested tubercular infection.

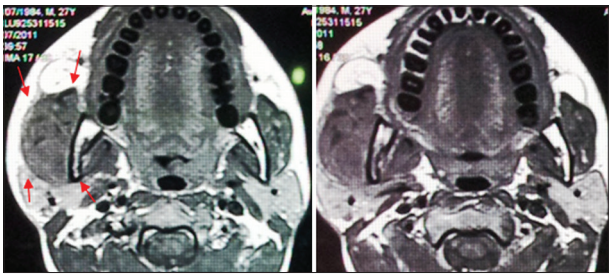

Figure 3: Magnetic resonance imaging image of the head showing the abscess cavity and the area of destruction on the right side of the face

The prompt response to antitubercular therapy further strengthened the diagnosis. This case highlights the need to consider tuberculosis in the differential diagnosis of jaw swelling even in the absence of other overt features of tubercular infection. In countries with high prevalence of tuberculosis, one should rule out the infection by appropriate diagnostic tests. While radiology and other ancillary laboratory investigations may provide useful clues, the definitive diagnosis requires culture and/or histopathology. Newer techniques such as bone polymerase chain reaction,[13] nucleic acid amplification tests,[14] and cone beam CT show much promise but need to be validated in future large studies. They may help to make a speedy and accurate diagnosis. Until such tools become widely available and standardized, the clinician should opt for a tissue diagnosis early in the course of diagnostic evaluations. This will ensure accurate diagnosis and prompt initiation of therapy, thus avoiding unnecessary physical and psychological burden for the patient.

Conclusion

Primary tubercular infection of the mandibular condyle and ramus is a rare manifestation of osseous tuberculosis but needs

to be considered in the differential diagnosis of any jaw swelling. It can occur in the absence of constitutional symptoms and pulmonary infection, and histopathology helps in early diagnosis as cultures are slow and often unreliable. This case highlights the limitations of diagnostic tests alone and places emphasis on incorporating a multifaceted examination to create an increased awareness among health professionals to the rarity and varied clinical presentation of extrapulmonary tuberculosis.

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