

## Tubercular osteomyelitis of the jaw - 2 case report

Kavita Ramesh Wadde<sup>1\*</sup>, Nazmul Alam<sup>2</sup>, Ashwini Chapane<sup>3</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Assistant Professor, <sup>3</sup>Post Graduate Student, Government Dental College & Hospital, Mumbai, Maharashtra, India

\*Corresponding Author: Kavita Ramesh Wadde

Email: dr.kavitawadde@gmail.com

### Abstract

Tubercular osteomyelitis of the maxilla & mandible was earlier considered as a rare disease but the incidence is on the rise with isolated presentation in the jaws. The rarity of the disease in the jaws usually has clinical doubt especially when the positive history of systemic infection was present. Early diagnosis of tubercular osteomyelitis will certainly reduce the morbidity of disease condition. Hereby we report two cases of tubercular osteomyelitis of maxilla & mandible.

**Case 1:** A male patient of 19 year old of tubercular osteomyelitis was referred for medical management & 2<sup>nd</sup> male patient of 58 year old who presented with a non-healing socket since 1 month. He was treated with surgical intervention & anti-tubercular drugs.

**Keywords:** Tuberculosis, Maxilla, Mandible, Osteomyelitis.

### Introduction

Although tuberculosis is a common disease in developing countries, the incidence of the disease is continuously falling. The WHO reported that an estimated 8.6 million people had developed TB and 1.3 million had died of the disease in 2012. The prevalence of TB has resulted from range of factor including rapidly increasing population, poor socioeconomic condition, increasing HIV infection rate and development of multi-resistant bacterial strains.

The prevalence of oral lesion in tuberculosis is 0.8-3.5%.<sup>1</sup> Tuberculosis of bone is not a common form of chronic osteomyelitis. It occurs more in young individuals and usually in late stages of the disease. The common sites are dorsal and lumbar vertebrae, epiphysis and diaphysis of long bones. Flat bones are rarely affected including those of the skull and mandible.<sup>2</sup>

Oral tubercular lesions are primary or secondary. Primary oral tubercular lesions are rare and younger patients are affected usually associated with cervical lymphadenopathy. In majority of cases, the primary lesion remains painless. The secondary lesions, on the contrary, are more common and are seen mostly in older people.<sup>3</sup> The lesions are superficial ulcers, patches, or destruction of jaw bones, that may be in the form of tubercular osteomyelitis<sup>3</sup>

Tubercular osteomyelitis of maxilla is very rare. Tubercular osteomyelitis of the mandible is more common than maxilla, as it contains a lesser amount of cancellous bone.<sup>4</sup>

Tubercular osteomyelitis of mandible is rare as compared to flat bones, it is always suspicious especially when a positive history of a systemic infection or medical treatment is denied. So the diagnosis can be based on histological findings.<sup>5</sup>

### Case 1

A 19- year-old male reported to our hospital with swelling, pain and draining sinus over the lower posterior region of the right side of the face since 3 months (Fig. 1). He was prescribed antibiotics by general practitioner but no improvement was seen by the patient. Patient had no relevant

medical history. The patient was average built, conscious-cooperative and afebrile.

General physical and systemic examinations did not reveal any significant diagnostic information. Local examination revealed swelling over the right submandibular region of approximately 3.5x3.5 cm, tender on palpation associated with a discharging sinus of thick yellow pus. No cervical lymphadenopathy was present. Intra oral examination revealed edentulous area in lower right Para-symphysis region.

No evidence of tuberculosis was seen in his chest radiograph. WBC count was 9600 cells/mm<sup>3</sup> and Hb of 11.4 gm/dl. Mantoux test, serum HIV and HBsAg were negative. On CBCT scan examination irregularity of right lower body of mandible with lytic areas and sclerosis with erosion was seen (Fig. 2). Surgical exploration was done and tissue was sent for histopathological examination (Fig. 3A). Histopathological examination showed predominantly granulation tissue with scattered langhans type giant cells, many mononuclear cells, reactive bone trabeculae and areas of haemorrhages, suggestive of a granulomatous lesion, suggestive of tubercular osteomyelitis (Fig. 3B).

The tubercular osteomyelitis was diagnosed on histopathological findings so curettage of the lesion was done and the patient was given anti tubercular treatment (ATT). The patient responded well to the treatment with complete remission and there was no evidence of recurrence.



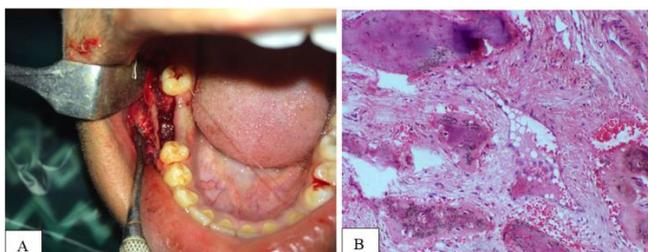
**Fig. 1:** Profile view of the patient



**Fig. 2:** Digital reconstructive panoramic radiograph showed irregular radiolucency with loss of normal trabecular pattern at the region of lower first & second pre-molar



**Fig. 4:** Profile view of the patient



**Fig. 3A:** The socket was curetted & sent for histopathological examination; **B:** Granulomatous lesion showed predominantly granulation tissue with scattered Langhans type giant cells, many mononuclear cells, reactive bone trabeculae and areas of haemorrhages

### Case 2

A male patient of 58-year-old came to our hospital with diffuse swelling on the upper right side of the face since 4 months (Fig. 4). It was gradually increasing in size. He was treated for a systemic tuberculosis 3 years ago. Patient was well built and well nourished. On extra-oral examination there was a diffuse swelling, with normal overlying skin. The swelling was tender. Right cervical lymph node (size 1.5x1.5 cm) was palpable. Patient had a history of extraction of both the right upper premolars 4 months ago. On intra oral examination oro-antral fistula was seen in respect to 14 & 15 region, non-healing socket was seen with 14 region and the bone was exposed & it was suggestive of infection.

OPG showed ill-defined radiolucency in the upper right both premolar region with the absence of cortication which was suggestive of osteomyelitis changes in the same region (Fig. 5).

Fine needle aspiration cytology (FNAC) of the swelling showed abundant caseous necrosis, epithelial cell granulomas, aggregated polymorphs. Curettage of the lesion was done, inter-radicular bone was removed between upper premolars (Fig. 6A). The tissue was sent for the histopathological examination and it was suggestive of tubercular osteomyelitis (Fig. 6B). Patient was sent for medical treatment (anti-tubercular drug) and patient was kept on periodic follow up, the extra oral swelling had resolved and oro-antral fistula was closed by using buccal flap & patient was given palatal splint.



**Fig. 5:** Digital panoramic radiograph showed irregular radiolucency with loss of normal trabecular pattern at the region of upper first & second pre-molar



**Fig. 6A:** The socket was curetted and interradicular necrotic bone was removed; **B:** On haematoxylin and eosin stained section showed chronic granulomatous lesion consisting of epithelioid cells, lymphocytes, necrotic areas and sequestrum

### Discussion

Primary tubercular osteomyelitis of the mandible is very rare. It may occur in an area of gingivitis (in the form of gingival enlargement and can occur as a deep extension of gingival lesion).<sup>6</sup> Gingival enlargement which are not responding to anti-inflammatory treatment must be excised and check for tuberculosis.<sup>7</sup> Tuberculosis of mandible and maxilla may be primary or secondary, can occur as a result of either deep extension of the gingival lesion, from an infected post-

extraction socket, or the infection can spread through haematogenous root.<sup>8</sup>

According to chapotel, more than 60% cases of tubercular osteomyelitis of the mandible are seen in younger ages but ulcer seen in old age as well.<sup>9</sup> As the mandible contains less cancellous bone the chances of involvement of the mandible is rare in comparison to maxilla except the alveolar and angle regions have greater affinity.<sup>10</sup>

Oral tuberculosis may manifest in the form of swelling, pain, loosening of teeth, displacement of tooth buds, ulcer, granulomas, involvement of salivary glands and temporomandibular joint, and tuberculous lymphadenitis. It constitutes less than 2% of skeletal tuberculosis. The involvement of mandible is also very rare.

Mode of spread to the mandible by,

1. Direct transfer from infected sputum or infected raw milk of cow
2. Local extension of soft tissue lesion can involve the underlying bone
3. Haematogenous route

Entire mandible can be affected in tubercular osteomyelitis which causes slow necrosis of the bone.<sup>3</sup> It occur rare, the provisional diagnosis of tubercular osteomyelitis can be arrived when routine therapy fails and patient has a positive history of systemic tuberculosis.

Clinically tuberculosis of jaw bones can mimic dentoalveolar abscess, odontogenic cyst, tumor and actinomycosis (if sinus is present). Biopsy is indicated to rule out odontogenic cyst, tumor and actinomycosis of jaws.

The prognosis is poor when the bone involved in a latter stages or death can occur from involvement of internal organs or from tubercular meningitis. However, prognosis is better and curable and can lead to reversal of all destructive bony changes if the lesion is primary and detected early.<sup>11</sup>

As there are no specific or pathognomonic signs of the infection, the diagnosis of a case of tubercular osteomyelitis of mandible is extremely difficult and when the routine therapy fails one should suspicious of tubercular osteomyelitis.

## Conclusion

Osteomyelitis of the jaw which does not respond to conventional antibiotics should be considered as tubercular osteomyelitis.

## Source of funding

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## Conflict of interest

None.

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