

OSTEOMYELITIS OF MAXILLA: CASE REPORT

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ABSTRACT

Maxillary osteomyelitis is rare compared to mandibular osteomyelitis because extensive blood supply & strut like bone of the maxilla make it less prone to chronic infection. A 65 year old female presented to us with pain and oro antral communication from left maxilla following dental extraction with offensive odour. Examination revealed a necrotic maxilla on the left side with oro antral communication. A cone beam computed tomography (CBCT) scan was suggestive of osteomyelitis of left Maxilla. Patient underwent surgical excision of the lesion. Satisfactory results were obtained with appropriate antibiotics. Adult Osteomyelitis remains one of the most difficult-to-treat infectious diseases, with considerable morbidity and costs to the health care system. Osteomyelitis is now such a rare entity that when presented, the possibility of underlying pathology should be considered and appropriately investigated for.

KEYWORDS: Maxilla, Osteomyelitis, Cone beam computed tomography.

CASE REPORT

A 65 year old female reported to the out-patient of Department of Oral and Maxillofacial surgery, Dental College and Hospital, Pune with a chief complain of pain and pus discharge from upper left back region since 4 months. She presented with history of pain in the upper left back tooth since 4 months following which her symptomatic teeth were extracted under local anesthesia somewhere in her locality (Fig 1). 15-20 days post extraction, she complained of pain from the affected region. The pain was mild to moderate in nature which aggravated on its own and did not subside. Medication like antibiotics and analgesics were advised but the symptoms have not subsided since then. She presented with history of diabetes since 5-6 years and was on medication for same. General examination revealed she was conscious, cooperative and well oriented to time, place and person. She had habit of mishri (tobacco) since 10 to 12 years.

On extra-oral examination no gross asymmetry was present on inspection. On palpation, there was mild tenderness over the left maxillary sinus region. Her mouth opening was adequate with poor oral hygiene.

Local examination revealed an area of denudation of the mucosa with exposed cortical bone in left upper alveolar ridge in relation to 13 (maxillary right canine region) to 26(maxillary left molar region) extending till the buccal vestibule measuring about 1x5 cm in dimension with yellowish white appearance (Fig 1).



Fig 1: Clinical Image Showing Denudation of the Mucosa with Exposed Cortical Bone

On palpation, it was tender with rough surface texture with offensive odour was also noted. Oroantral communication was also present on left side of maxilla. Clinical diagnosis of osteomyelitis was given.

Cone beam computed tomography of maxilla was advised which revealed the floor has caused resorption of the anterior alveolar process, floor of left maxillary sinus, floor of nasal fossa. Increased in radioopacity was seen in left maxillary region suggestive of sequestrum formation.

Radiographic diagnosis suggestive of osteomyelitis (Fig 2).

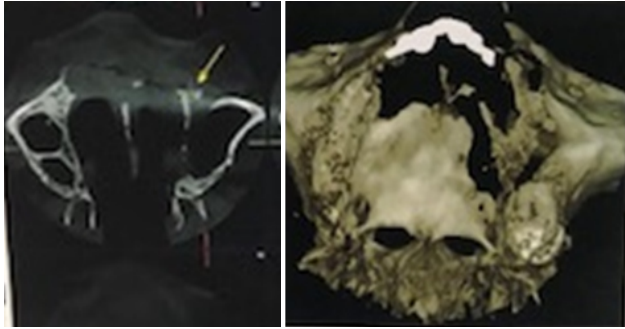


Fig 2: Cone Beam Computed Tomography

Surgical intervention was planned under local anesthesia. Painting and draping was done following all aseptic precautions. Local anesthesia (Lignocaine with adrenaline) (1:2,00,000) was given. Incision was taken. Site was exposed such that all necrosed bone was seen. Necrosed bone was removed with help of bone ronguer (Fig 3).

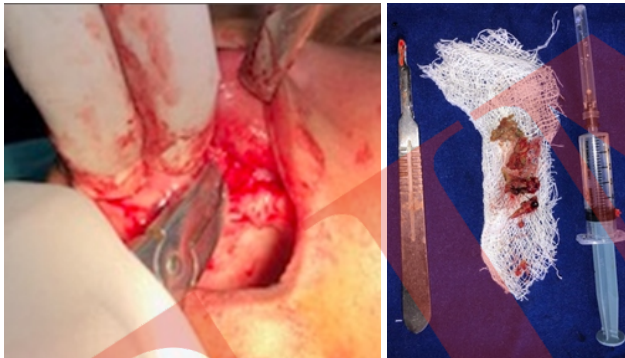


Fig 3: Necrosed Bone Removed

Through irrigation of the exposed site was done with help of normal saline and betadine. (Fig 4) Buccal advancement flap was taken for closure of oroantral communication. Periosteum of buccal flap was released with blunt dissection. (Fig 5). Flap was advanced and closure was done with help of vicryl 4-0 without tension. (Fig 6). Regular follow up upto 2 month was taken. The histopathological studies confirmed osteomyelitis with dense mass of bony trabeculae with at interstitial tissue. The osteocytic lacunae appear empty. The bony trabeculae exhibit many reversal ad resting lines in a pagetoid appearance. Area of bone sequestrum are also evident at places. The interstitial connective tissue is fibrotic and consist of chronic inflammatory cells consisting of lymphocytes and a few plasma cells. Some areas also shows evidence of bacterial infection. This overall picture was suggestive of Osteomyelitis.

Satisfactory results were obtained after 2 month of recall following surgical excision and antibiotic management (Fig 7).

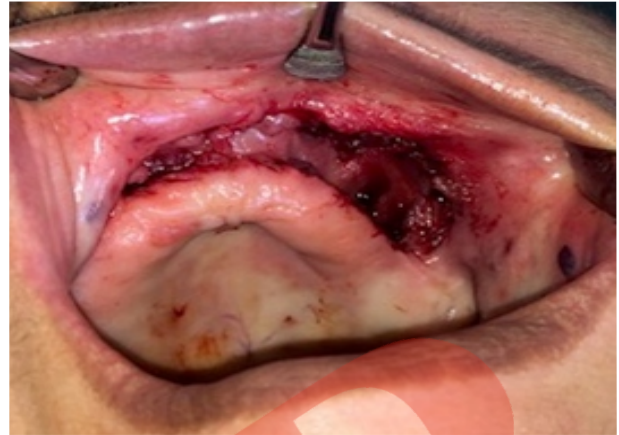


Fig 4: Post Operative



Fig 5 : Undermining Of Buccal Mucosa For Advancement And Closure

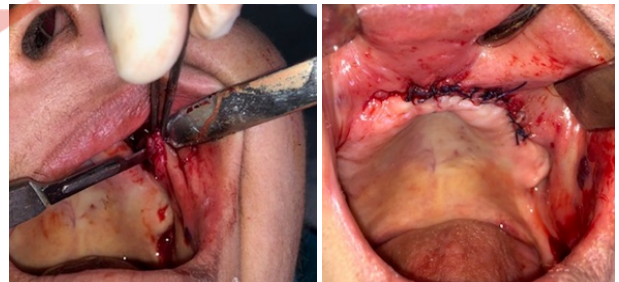


Fig 6 : Closures Achieved With Vicryl



Fig 7 : Post Operative After 1 Month

DISCUSSION

Osteomyelitis is an inflammatory disease in which most frequently the bone marrow and cortical bone is affected. Characteristic features of osteomyelitis is formation of sequestrum and progressive bone destruction. Blood supply is extensive in maxilla than in mandible. Any infectious process of this bone can either remain localized or spread into the soft tissues and result in fistula, cellulites, or sinusitis. In the mandible, the commoner site of osteomyelitis of the jaws, any area of infection is surrounded by a plate of compact bone which varies considerably in thickness from region to region. In most instances the alveolar process which contains the teeth is covered by a rather thin external layer of compact bone (1).

Osteomyelitis for alveolar process of maxilla is most cause for dental infection. Osteomyelitis involving the entire maxilla is very rare (2). The pathogenesis of these diseases may be linked to hematogenous dissemination of exogenous or commensal microorganisms living on the skin or in the digestive tract, but generally the main source of microorganisms involved in the osteomyelitis of the maxilla and mandible is the dental biofilm and oral infections, particularly endodontic infections (Brady et al., 2006), peri implantitis, periodontitis and gingivitis (O'Sullivan et al., 2006; Coviello & Stevens, 2007) (3). It may also arise as a complication of irradiation to the mandible, maxillofacial trauma, dental extractions and subsequent inadequate treatment of a fracture (3).

The chronic osteomyelitis usually transforms from previous acute osteomyelitis due to inadequate treatment and local or systemic contributing factor. Clinical features may include fever, pain, swelling, pus discharge, intra-oral fistula formation, unhealed soft tissue in the oral cavity, parasthesia in the involved area, pathological fracture and trismus (4).

Diagnosis is based from history, clinical and radiographic findings. The most distinguishing feature of chronic osteomyelitis is laminating new periosteal bone and sequestra.

Chronic suppurative osteomyelitis is best managed with careful evaluation and establishment of microbial etiology. Treatment includes antimicrobial therapy and debridement with stabilization of bone and management of resultant dead space (5).

Topazian et al recommended treatment mainly with Beta lactam, Clindamycin, and Metronidazole. Many microorganisms responsible for osteomyelitis are penicillin resistant; such as *Fusobacterium*, *Prevotella* and *Porphyromonas*. For this reason, Metronidazole should be incorporated. Marx suggested that in

osteomyelitis cases, minimum antibiotic treatment should be advised for 2 weeks (6). Extensive necrosis of the maxillary bone indicates ischemic nature of the affected region. Hence, radical resection of the necrotic maxilla and mucosa is performed and complete disease clearance is obtained.² Saucerization implies reeling the upper cortical section to expose medullar cavity and debride necrotic tissue; which is useful in chronic phases. Decortication implies removal of infected bone cortex. This promotes resolution since the procedure removes non vascular tissues and surrounding microorganisms. Resection is useful for low degree or refractory stages. In the present case, saucerization was carried out followed by debridement necrotic tissue (7).

CONCLUSION

Osteomyelitis is a multifactorial disease. Osteomyelitis of the maxilla can cause serious complications such as infection of cranial cavity and brain. It is essential that any maxillary osteomyelitis be treated aggressively to avoid further complications.⁴ Proper diagnostic aids followed by adequate surgical and pharmacological treatments should be carried for osteomyelitis (7).

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