

Maxillary Osteomyelitis: A Rare Case Report

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Abstract

The incidence rate of osteomyelitis has decreased after the advent of the antibiotics. In today's era, osteomyelitis of facial bones is found to be a rare condition with the prevalence of maxillary osteomyelitis very less as compared to that of mandible. Here, we report a case of osteomyelitis in maxilla after the patient underwent the extraction of teeth in the arch.

Keywords: Cone Beam Computed Tomography, Maxillary Osteomyelitis, Traumatic Extraction

Introduction: Osteomyelitis is defined as an inflammatory condition of the bone, which begins as an infection of the medullary cavity which rapidly involves the haversian systems and extends to involve the periosteum the affected area.¹ Osteomyelitis of maxilla was explained long back by Hippocrates in around 5th century BC. After its description by Rees, very few cases have been explained from time to time. The condition of osteomyelitis was described by Kelly as "empyema of the antrum of Highmore".² An introduction of antibiotics has

lead to decreased incidences of the acute cases of osteomyelitis and hence, subacute or chronic forms of osteomyelitis has become more prominent, lacking an actual acute phase.³

Osteomyelitis of maxilla is rarely reported as compared to the mandible as the maxilla has significant collateral blood flow, thin cortical plates, and bone marrow with struts which make it less prone to infection.⁴ Maxillary osteomyelitis can be classified based on the factors like traumatic, rhinogenic and odontogenic. Systemic diseases such as diabetes mellitus, HIV, malnutrition and use of chemotherapeutic agents also contribute in the progression of osteomyelitis.⁵ Here, we report a case of maxillary osteomyelitis in a male patient who had undergone traumatic extraction.

Case report: A 45 years old male patient visited to the department of oral medicine and radiology with a chief complaint of pain in upper left back tooth region since 2-3 months. (figure 1) He had given a history of sinus opening with pus discharge irt 23, 24 for which he had underwent

traumatic extractions of teeth in left maxillary arch around 1-1½ years back. Since then, he complains of pain and difficulty in chewing food which had aggravated about 2-3 months back. On intraoral examination, 11, 21, 22, 23, 24, 25 were found missing. The mucosa was denuded with exposed underlying cortical bone extending mesiodistally from 21- 25 region and supero-inferiorly from maxillary vestibular region to 1 cm towards the rugae region involving the alveolar bone. (figure 2) Also, an oval shaped exposure of bone with necrotic slough is seen in the palatal region extending from 21-25 region. (figure 3) On palpation, it was tender with rough surface texture and pus discharge with offensive odour. The surrounding mucosa was erythematous, edematous with mobility of the involved alveolar segment. The antibiotic sensitivity test showed that the patient was sensitive for cefoparazone with sulbactam, ceftazidime, imipenem, meropenam, piperacillin with tazobactam types of antibiotics. The maxillary occlusal cross-sectional radiograph revealed missing tooth irt 11, 21, 22, 23, 24 and 25 with resorption of the alveolar segment. (figure 4) The CBCT images revealed an extensive bone loss, presence of sequestrum and the lesion involving almost half of the maxillary arch extending superiorly with the involvement of left maxillary sinus and the left infraorbital floor and posteriorly upto the lateral nasal wall, nasal floor with thick enhancing mucosa. (figure 5,6)

The blood investigations were within the normal range. Surgical intervention with left hemi-maxillectomy and curettage of the sequestrum was performed. The excised specimen of maxilla was sent for histopathological examination which confirmed it for osteomyelitis.

Discussion: An inflammatory process in the bone is termed as Osteomyelitis. When maxillofacial skeleton is affected by inflammatory process, it usually involves both medullary and the cortical bones. The most common site

of mandible affected by osteomyelitis includes mandibular body followed by symphysis menti, angle of mandible, ascending ramus and the condyle. Osteomyelitis involving the maxilla is very rarely seen.⁶ Dental biofilm and oral infections mainly endodontic infections, peri-impantitis, periodontitis and gingivitis are the main source of microorganisms involved in the pathogenesis of osteomyelitis. It may also arise as a result of complications arising from dental extractions, maxillofacial trauma and subsequent inadequate treatment of fracture and/or irradiation to the mandible.⁷

An acute case of osteomyelitis may transform into a chronic case in the absence of an adequate treatment and local or systemic contributing factors. The clinical signs and symptoms include local pain, fever, swelling, purulent discharge, intraoral extraoral sinus opening, unhealed tissue in the oral cavity, paresthesia of the area involved, pathological fracture and trismus.⁸ A detailed history from the patient, clinical and radiographic findings contribute in diagnosing a case of osteomyelitis. The formation of sequestra and laminating the new periosteal bone proved to be the most distinguishing feature for chronic osteomyelitis. Antimicrobial therapy and debridement of the necrotic slough is an effective method of treating a case of osteomyelitis.⁹

Topazian et al recommended treatment mainly with Beta lactam, Clindamycin, and Metronidazole. Microorganisms such as *Prevotella*, *Porphyromonas* and *Fusobacterium* which are responsible for osteomyelitis are penicillin resistant and hence, metronidazole is essentially incorporated in managing the disease.¹⁰ A case of maxillary osteomyelitis can be treated with non-invasive procedure to an extensive radical surgery depending on the amount of the destruction of the bone caused by ischaemia. Surgical intervention includes extraction of the involved teeth, removal of the sequestra, debridement,

decortications, resection and reconstruction of the involved bone.⁴

Conclusion: Osteomyelitis is a multifactorial disease with a varied presentation. A timely diagnosis of the disease with correct treatment approach helps in managing the disease.

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Legends Figure



Figure 1



Figure 2



Figure 3

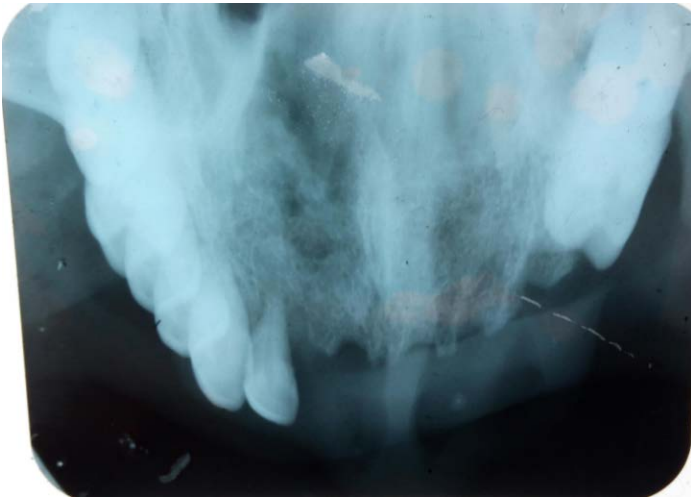


Figure 4



Figure 5



Figure 6