

## Maxillary Osteomyelitis in Diabetic Patient-A Case Report

\*Dr Suresh Babu<sup>1</sup>, Dr George skariah<sup>2</sup>, Dr Sangeetha Shivaji<sup>3</sup>,  
Dr Naveen kumar jain<sup>4</sup>

<sup>1</sup>(Additional professor, Department Of Maxillofacial Surgery, Government Dental college Trivandrum, India)

<sup>2</sup>(Assistant professor, Department Of Maxillofacial Surgery, Government Dental college  
Trivandrum, India)

<sup>3,4</sup>(Post Graduate, Department Of Maxillofacial Surgery, Government Dental college Trivandrum, India  
Correspondence to: \*Dr Suresh Babu

**Abstract:** The term osteomyelitis encompasses infectious disease involving the disease of the bone and/or bone marrow further extending to periosteum. Osteomyelitis was relatively common before the era of antibiotic therapy. It is a well documented fact that most of the cases of Maxillofacial Osteomyelitis occur in the mandibular region as compared to the maxilla. Osteomyelitis of maxilla is rare because of extensive blood supply & strut like bone of the maxilla make it less prone to chronic infection. We report a case of Osteomyelitis involving part of the Maxilla in a 45 year old female patient, diabetic for the past 6 years. She presented to us with an oro-antral fistula following dental extraction with offensive odour from the nose. Examination revealed a necrotic alveolar maxilla on the left side. Patient underwent complete surgical excision of necrotic bone with oroantral closure. Excellent results were obtained with appropriate antibiotics, strict diabetic control followed by complete surgical excision of necrotic bone and oroantral fistula closure.

**Keywords:** Adult osteomyelitis, Diabetes Mellitus, Oro-antral fistula, Osteomyelitis of maxilla

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### I. Introduction

Osteomyelitis is derived from the Greek words 'osteon' meaning bone and 'muelos' meaning marrow. [1] Osteomyelitis of jaws is a common disease but dreadful due to its need for prolonged therapy, which sometimes results in disfigurement and dysfunction of the affected area. [2] Osteomyelitis represents an inflammation of the medullary cavity, Haversian system and adjacent cortex of bone. [3] Osteomyelitis was first described by French surgeon, Edouard Chassaignac in 1852. In 1764, John Hunter coined the terms sequestra and involucrum for pockets of dead cortical bone with abscess and new bone formed in response to the sequestra respectively. [4] Osteomyelitis of maxilla was originally described by Rees in 1847. [5] In the recent years, the occurrence of osteomyelitis of the jaws has declined because of the availability of newer antimicrobial agents and also improved dental care. Improper use of antibiotics, poor oral hygiene maintenance, malnutrition, emerging strains of resistant microorganisms to certain antibiotics, and radiation therapy are the main causes that can be attributed to increasing cases of osteomyelitis across the globe. Some other factors that also predispose an individual to osteomyelitis of jaw is virulence of the microorganism, compromised vascularity and perfusion in the host bone at the local, regional or systemic level, and host resistance or defense. [7]

### II. Case Report

A 45 year old female patient, reported to the Department of oral and maxillofacial surgery with a chief complaint of severe pain in relation to upper left back tooth region since the last 3 months. She also had nasal regurgitation since 3 months, initially for liquids & later for solids. She also complained of nasal discharge, on left side and foul smell from the oral cavity. She gave a history of extraction of teeth from same region 3 months back from a private dental college followed by which some bone was fractured and refixed it in the same site from the same institution. She was diagnosed to have diabetes mellitus 6 years back and was under oral hypoglycemic drugs. However her glycemic control was poor due to irregular medications. There were no significant findings upon general physical examination.

On extraoral examination, maxillary sinus tenderness was present on left side. Intraorally she had poor oral hygiene, with some halitosis and clinically missing maxillary left molars. A yellowish denuded bone was visible in relation to maxillary left missing teeth region. It was severely tender on palpation and was mildly mobile. 24 and 25 were mobile. A fistulous tract about 0.5 cm X 0.5 cm suggestive of oro-antral fistula was seen in the posterior aspect of 25. Investigation revealed uncontrolled diabetes. Orthopantomogram showed sequestrum in relation to left maxilla. Plain Radiograph of paranasal sinuses (Water's view) showed left

maxillary sinusitis. Computerized tomography scan confirmed our diagnosis of osteomyelitis of left maxilla. ENT consultation followed by endoscopy done to rule out any intranasal fungal growths. The patient was treated with appropriate antibiotics and kept her on antral regime. Lab investigations were carried out and all the values were under normal range except high glycaemic values. Her diabetic status was brought under control and preoperative dental consultation for obturator was obtained. Patient underwent complete surgical excision of the necrotic bone along with extraction of 24,25 and oro antral fistula closure under GA. Excellent results were obtained with complete surgical excision of the necrotic bone, appropriate antibiotics, strict glycemic control.

### III. Discussion

With the present era of advanced antibiotics, osteomyelitis presents as a subchronic condition and is more commonly associated with debilitated, immunosuppressed or medically compromised patients and the pattern of events does pose a diagnostic dilemma. [3] Chronic osteomyelitis is a very serious condition requiring immediate hospitalization followed by aggressive surgical and antibiotic therapy. In this disease, the blood supply to the infected area is usually severely compromised. At the time of surgery, culture material should be obtained so that appropriate antibiotics can be chosen for treatment of the infection. Most authors agree that antibiotics should be continued much longer than usual for odontogenic infections [8]. For chronic osteomyelitis, antibiotic treatment may be continued for up to 6 months. The treatment goal is directed to resolution of the infection while maximizing patient function. Celsius, in the 1st century AD, described scraping away or debridement of the dead bone until it bleeds. In our case, patient had a history of traumatic extraction and the patient is a chronic diabetic with poor glycemic control. With the clinical features and history, we provisionally diagnosed the condition as osteomyelitis of maxilla. But the dilemma was regarding the etiology of osteomyelitis. The case presented here represents osteomyelitis following traumatic extraction. Extraction was done due to odontogenic infection. Patient is a chronic diabetic and not under proper medication and control, leads to immunosuppressed condition. The treatment of osteomyelitis varies from a range of simple non-invasive approach to more invasive radical treatment. Treatment can be conservative resection of the diseased bone with adequate clearance in all cases except in cases of osteomyelitis due to osteoradionecrosis where resection has to be more radical. (6) Our patient had crossed the stage of non-invasive conservative approach with antibiotics alone. CT scan revealed necrosis of the maxillary bone on left side which indicates a vascular & ischemic nature of the affected region. Hence surgical resection of the involved necrotic maxilla was performed along with oroantral closure and complete disease clearance was obtained. Patient had uneventful healing and follow up period.

Figure-1 Pre-Op figure -2 Panoramic View



Figure-3 Intra-Op figure-4 Post-Op



#### **IV. Conclusion**

Osteomyelitis of the craniofacial skeleton is a complex problem requiring rapid and thorough diagnosis and treatment [9-10]. Failure to do so can result in a host of complications and consequences. The cause of this disease is multi-factorial and its presentation varies. Whatever the cause may be, complete resolution of the infection must be obtained to decrease the morbidity and mortality of the patient [10,11]. Literature has been flooded with articles highlighting the treatment of Osteomyelitis which ranges from simple non-invasive to surgical treatment [10-12]. Antibiotics are considered to be the treatment of choice in the initial stages. As suggested in literature, the duration of the process, the formation of granulation tissue and the presence of sequestra in almost all cases make surgery mandatory with simultaneous antimicrobial therapy in the management of osteomyelitis. Our patient has crossed the non-invasive approach hence resection of the necrotic part of maxilla was performed. Similar cases must be differentiated from osteoradionecrosis. Osteomyelitis of maxilla is rare in the modern antibiotic era, it should still be suspected especially in a patient with diabetes and associated focus of infection such as carious tooth. The treatment protocol consists of a combination of surgery and antimicrobial treatment.

#### **References**

- [1]. Gomes D, Pereira M. Osteomyelitis: An overview of antimicrobial therapy. *Braz J Pharm Sci* 2013;49:13-27.
- [2]. Topazian RG. Osteomyelitis of the jaws. In: *Oral and Maxillofacial Infections*. Ch. 10. Philadelphia, PA: WB Saunders; 2002.
- [3]. Manimaran K, Suresh Kannan P, Kannan R. Osteomyelitis of maxilla bilateral involvement. A case report.
- [4]. *JIADS*. April-June 2011;2[2]:57-8
- [5]. David J Pincus, Milton B Armstrong, Seth R Thaller. Osteomyelitis of The craniofacial skeleton. *Semin Plast Surg*. May 2009;23[2]:73-9
- [6]. S P Lumba, A Nirola, B S Grewal. Healed osteomyelitis of Maxilla with tooth in the floor of nose. *The Journal of Laryngology & Otology*. August 1971;85[08]:877-9
- [7]. Prasad K C, Prasad S C, Mouli N, Agarwal S. Osteomyelitis in the head and neck. *Acta Otolaryngol*. 2007;127:194-205
- [8]. Hudson JW. Osteomyelitis of the jaws: A 50-year perspective. *J Oral Maxillofac Surg* 1993;51:1294-301.
- [9]. Baltensperger M and Eyrich G. "Osteomyelitis of the jaws" Chapter 2: Definition and Classification. *Springer book on Osteomyelitis of the Jaws*.
- [10]. Nezafati S., et al. "Localized osteomyelitis of the mandible secondary to dental treatment: report of a case". *Journal of Dental Research, Dental Clinics, Dental Prospects* 3.2 (2009): 67-69.
- [11]. Fogarty C., et al. "Invasive fungal infection of the maxilla following dental extractions in a patient with chronic obstructive pulmonary disease". *Journal (Canadian Dental Association)* 72.2 (2006): 149-152.
- [12]. Yeoh SC., et al. "Chronic suppurative osteomyelitis of the mandible: case report". *Australian Dental Journal* 50.3 (2005): 200-203.
- [13]. Sheno R., et al. "Recurrent chronic suppurative osteomyelitis: review of literature and report of a case". *Indian Journal of Multidisciplinary Dentistry* 1.1 (2010): 29-32.