

# Osteomyelitis of Maxilla: A Rare Case

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## Abstract :

Osteomyelitis was relatively common before the era of antibiotic therapy. Today osteomyelitis of facial bones is a rare condition. Maxillary osteomyelitis is rare compared to mandible osteomyelitis because extensive blood supply & strut like bone of the maxilla make it less prone to chronic infection. We report a rare case of Osteomyelitis involving whole of the Maxilla in a 50 year old male patient, diabetic and hypertensive for the past 10 years. He presented to us with an oro-antral fistula following dental extraction with offensive odour from the nose. Examination revealed a necrotic maxilla and hard palate on right side. A computerized tomography scan confirmed Osteomyelitis of right Maxilla with Klebsiella species isolated on culture. Patient underwent complete surgical excision with prosthesis reconstruction. Excellent results were obtained with appropriate antibiotics, strict diabetic control followed by complete surgical excision and prosthesis reconstruction.

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

## Introduction:

Osteomyelitis represents an inflammation of the medullary cavity, Haversian system and adjacent cortex of bone.<sup>1</sup> 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.<sup>2</sup>

Osteomyelitis of maxilla was originally described by Rees in 1847.<sup>3</sup> Osteomyelitis of the jaws was relatively common before the era of antibiotic therapy. Today osteomyelitis of facial bones is a rare condition. Maxillary osteomyelitis is rare compared to mandible osteomyelitis because extensive blood supply & strut like bone of the maxilla make it less prone to chronic infection.<sup>1</sup>

Macbeth in 1952 classified the etiology of osteomyelitis of maxilla into traumatic, rhinogenic and odontogenic.<sup>4</sup> This case belongs to the last group.

## Case Report

A 50 year old male patient, Porter by occupation, came with loosening of right upper teeth since 4 months which were extracted. He also had nasal regurgitation since 4months, initially for liquids & later for solid. He also complained of bilateral foul smelling, non-blood stained

nasal discharge, more on right side. He was diagnosed to have diabetes mellitus and hypertension 10 years back, however his glycemic control was poor due to irregular medications. On examination, there was swelling over the right eyelids and cheek (figure 1a & 1b) with offensive odour from the nose. Anterior rhinoscopy revealed mucopurulent foul smelling and non blood stained nasal discharge with atrophied inferior turbinate on right side. The left nasal cavity was normal. Right maxillary sinus tenderness was present. He had poor oral hygiene, with halitosis, multiple absent teeth with poorly maintained remaining teeth. An ulcerated area about 2 X 4 cm was visible in the upper jaw exposing the necrotic hard palate and maxilla (Figure 2). A fistulous tract about 0.5 cm X 0.5 cm suggestive of oro-antral fistula was seen in the posterior aspect of the hard palate.

Investigation revealed changes of nephropathy with elevated potassium, blood urea and creatinine levels and uncontrolled diabetes. Culture and sensitivity of the discharge demonstrated Klebsiella species sensitive to routine antibiotics. Plain Radiograph of paranasal sinuses (Water's view) showed Right maxillary sinusitis with bony erosion. Computerized tomography scan confirmed our diagnosis of osteomyelitis of right maxilla with the peculiarity that the whole of the maxilla was involved (Figure 3).

The patient was treated with appropriate antibiotics; his diabetic status was brought under control and pre-operative dental consultation for prosthesis was obtained. Patient underwent complete surgical excision per orally with endoscopic clearance of the remnant

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sequestrum from the zygomatic region followed by prosthesis reconstruction of the oro-nasal defect (Figure 4).

Excellent results were obtained with complete surgical excision (figure 5) and prosthesis reconstruction, appropriate antibiotics and strict glyceemic control.

### Discussion

With the present era of advanced antibiotics, osteomyelitis presents as a sub-chronic condition and is more commonly associated with debilitated, immunosuppressed or medically compromised patients and the pattern of events does pose a diagnostic dilemma.<sup>1</sup> In our case, the patient is a chronic diabetic with poor glyceemic control. With the clinical features and history, we provisionally diagnosed the condition as chronic suppurative osteomyelitis of maxilla. But the dilemma was regarding the etiology of osteomyelitis.

The case presented here represents osteomyelitis following odontogenic infection for the following reasons:

1. Necrotic bone, pus discharge and foul odour are typical features of bacterial infection.
2. Patient is a chronic diabetic and not under proper medication and control, leading to immunosuppressed condition.
3. He gives typical history of necrosis and ulceration following dental extraction.

The treatment of osteomyelitis varies from a range of simple non-invasive approach to more invasive radical treatment.<sup>1</sup> Treatment can be conservative resection of the diseased bone with adequate clearance in all cases except in cases of osteoradionecrosis (ORN) where resection has to be more radical.<sup>5</sup> Nasal endoscope can be used to clear the disease inside the maxillary sinus and also to clear the dead and unhealthy bone over the zygoma. Advantage of using nasal endoscope is small incision and complete disease clearance with minimal depression and asymptomatic mild ectropion.<sup>6</sup> Our patient had crossed the stage of non-invasive conservative approach with antibiotics alone. CT scan revealed extensive necrosis of the maxillary bone, which indicates avascular & ischemic nature of the affected region. Hence, radical resection of the necrotic maxilla and mucosa was performed and complete disease clearance was obtained with the help of endoscope. Patient had uneventful healing and no recurrence present in the six months follow up period. The communication between the oral and nasal cavity was closed with a pre-designed prosthesis, so that the patient can take food orally and speak normally.

### Conclusion

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 caries tooth. Adult Osteomyelitis remains one of the most difficult-to-treat infectious diseases, with considerable morbidity and costs to the health care system. Although osteomyelitis involving alveolar process of maxilla is common due to dental causes, osteomyelitis involving the entire maxilla is very rare. The nasal endoscopy is a non invasive approach which helps in achieving complete clearance of the necrotic remnants from the cavity.

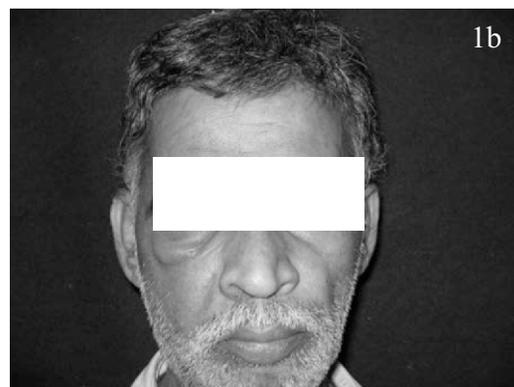


Figure 1a & 1b: shows swelling over right eyelid and cheek

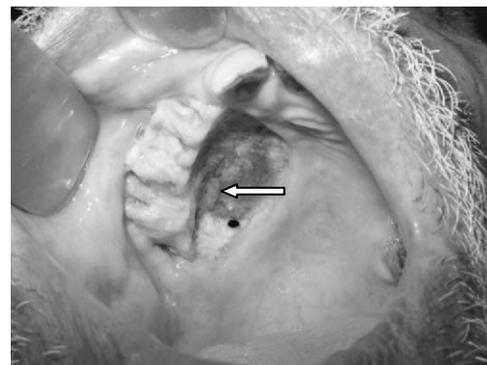


Figure 2: necrotic hard palate with oro-antral fistula (arrow)



Figure 3: CT Scan Nose & PNS showing osteomyelitis involving the whole of right maxilla.

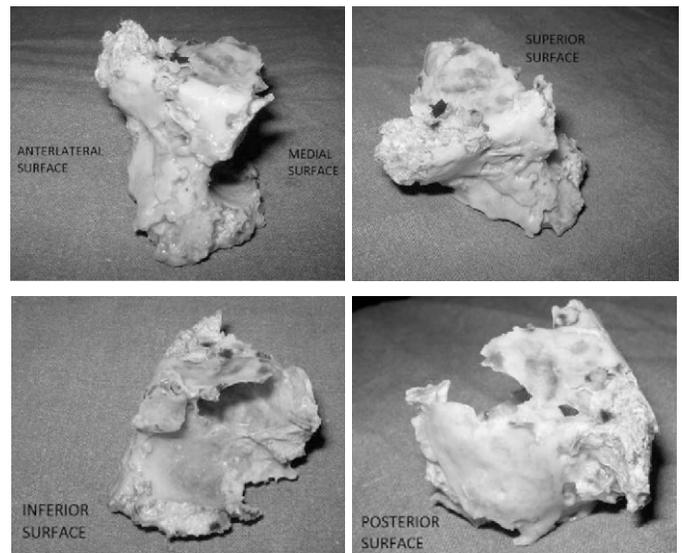


Figure 4: Intra-oral removal of the necrotic maxilla, Cavity seen after endoscopic clearance of remnant sequestrum and reconstruction of defect with prosthesis.

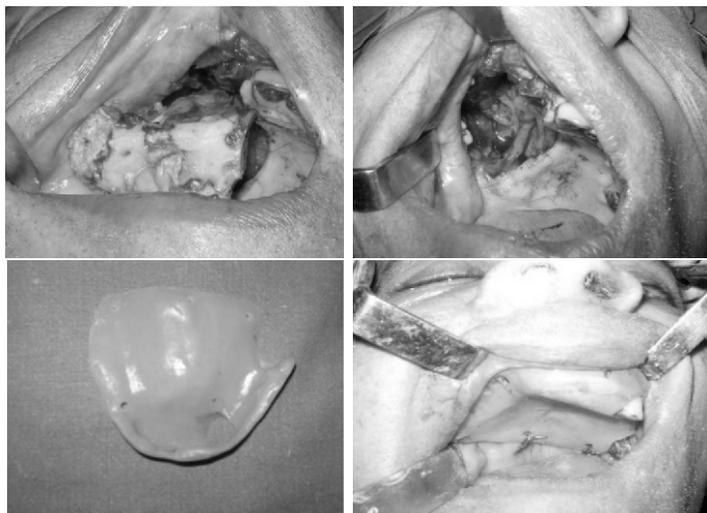


Figure 5: 3-Dimensional view of the excised specimen of whole of right maxilla.

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