

Fungal Osteomyelitis: Case Report

Deval Mehta*, Urvi Shah**

* Dean And HOD Department of Oral And Maxillofacial Surgery, **3rd Year P.G Student, Department of Oral And Maxillofacial Surgery, College of Dental Sciences And Research Centre, Manipur , Ahmadabad, Gujarat, India

Abstract: Fungal osteomyelitis are uncommon but when they occur, they are devastating to patients. Predisposing factors includes immunocompromised patients, IV drug abusers, patients on chemotherapy, HIV infection and most commonly diabetes. A high index of suspicion must be maintained for infections by fungi in diabetic patients with no growth on bacterial culture, AFB negativity, ill defined granulomas and no response to antibacterial therapy. Here we report a case of chronic extensive fungal osteomyelitis (mucormycosis) in maxilla along with draining sinus from outer canthus of eye in diabetic patient. [D Mehta, Natl J Integr Res Med, 2018; 9(3):79-81]

Key Words: Fungal Osteomyelitis

Author for correspondence: Urvi Shah, Department Of Oral And Maxillofacial Surgery, College Of Dental Sciences And Research Centre, Manipur , Ahmadabad, Gujarat, India E-Mail: urvishah2128@gmail.com

Introduction: Osteomyelitis involving maxilla is quite rare compared to that of mandible because of the extensive vascularity and strut like nature seen in maxilla.⁰¹ Mucormycosis is frequently fatal, such fungal infection rarely arises in otherwise healthy people.⁰² An underlying disease, frequently diabetes mellitus, is almost always present. It appears stereotypically in different anatomic sites: paranasal, rhinoorbital, rhinocerebral, cerebral, pulmonary, and gastrointestinal areas; and in the soft tissue of the extremities. culture of specimen is required to identify the fungal species involved.⁰³ Here, we highlight case of fungal osteomyelitis presenting with diverse clinical presentation, diagnosis , medical and surgical management.

Case History: A 40 year old male patient presented with the chief complain of halitosis and loosening of teeth before approx 1 month then gradual increase in mobility with associated loss of sensation in the affected side. He had Gradual increase difficulty in breathing and heaviness of nose with Painful eyes and draining sinus from the outer canthus of eye on right side was noted since last 10 days. On examination there was no gross swelling on face except draining sinus at outer canthus of right eye. On palpation there was tenderness present in buccal vestibule of both sides and cheek region. No abnormality present in tmj movements and regional lymphnodes were non tender, non palpable.

Figure 1 preoperative clinical



Ct scan done for the patient which revealed bony destruction on bilateral body and alveolus of maxilla, bony palate and antral floor of both side, anterior inferior orbital rim, medial pterygoid plate and zygomatico maxillary junction and body of zygoma on right side. Polypoidal mucosal thickening in bilateral maxillary sinus without definitive mass was suggestive of aggressive osteomyelitis of facial bone and bilateral maxillary sinusitis with blocked osteomeatal complex. Biopsy report revealed Fungal hyphae predominantly mucor species, suggestive of fungal osteomyelitis of maxilla. Pre operative medical work up done for the patient and according to infectious disease specialist I.V amphotericin B(1.5mg/kg/day) started along with I.V antibiotics. After three days of medical treatment aggressive resection of maxilla (extensive surgical debridement) under general anesthesia was done via intraoral approach. zygomaticomaxillary complex was Exposed via extraoral extended preauricular incision . Debridement done using betadine and H2 O2 and outer table was removed. Inferior meatus nasal antrostomy was performed and roller gauze pack placed. Intraoral and extraoral suturing done. Ryle's tube was kept and i.v antifungal continued till 7th postoperative day. 3 months postoperative ct scan and MRI showed significant improvement and regression of disease.

Figure 2: 3d CT scan showing extensive destruction

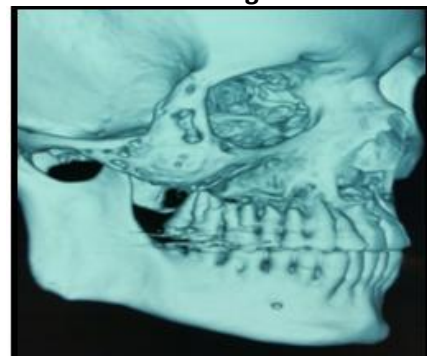


Figure 3: Histopathological Slide Showing Fungal Hyphe with Right Angle Branching

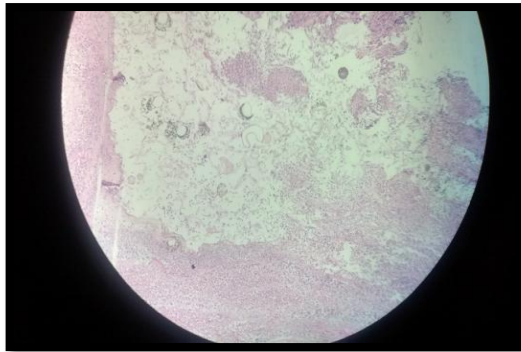


Figure 4: Extensive debridement of maxilla



Figure 5: Specimen



Figure 6: Intraoral Closure

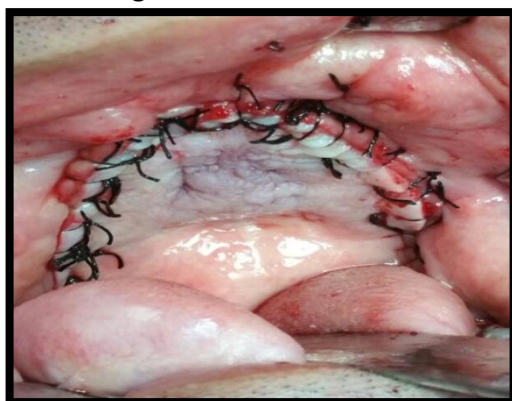


Figure 7: Extraoral Closure



Figure 8: Postoperative After 1 Year



Discussion: Since fungal infections involving bone occur infrequently, it can pose a diagnostic and therapeutic dilemma for those who are not familiar with its clinical presentation, hence leading to ineffective treatment or resolution. Candidal infection is more often encountered when compared to other fungal infection, i.e. mucormycosis, aspergillosis etc.⁰¹ Ketoacidosis in diabetes offers an added advantage to this fungal invasion, as is seen in half of our patients. The acidic milieu reduces the binding of iron to transferrin, thereby more free iron and lack of a dialysable inhibitory factor in patients with diabetes offer favourable conditions for fungal multiplication.⁰²

An incidence of 45.1% of maxillary osteomyelitis has been reported by Koorbusch et al. among UDM patients in a rural Indian population.⁰⁴ Computed tomography or magnetic resonance imaging are useful modalities to assess the extent of the disease.⁰² The diagnosis of mucormycosis can be made by direct microscopy or histopathological examination, or by culture on Sabroud's agar. The detection of aseptate hyphae with right angled branching is pathognomonic.⁰⁵ Cultures are often negative and positive results alone are not sufficient to make the diagnosis as mucorales can be grown from specimens taken from an uninfected with mucosal and skin surfaces. Mucormycosis which belongs to

zygomycetes family typically shows broad aseptate hyphae of size 6–20 µm branching at > 90°. Histopathological identification can be considered as the gold standard in such cases.⁰⁶ Amphotericin B is partially effective therefore surgical debridement becomes essential. Appropriate treatment of antifungal regime needs to be initiated as the culture sensitivity results could take up to 6 weeks. Early identification and prompt treatment with the identification of underlying systemic disease would lead to successful outcome.

Conclusion: There is a Increasing trend of Mucormycosis in immuno-compromised patients. Beside systemic factors, Local factors (chronic infection / trauma) may predispose an otherwise healthy individual to mucormycosis . so we Need to follow up patients even after extraction and minor surgical procedures for Immediate and prompt therapy .

Summary: Fungal osteomyelitis in maxillofacial region is usually a rare presentation. It is more commonly seen in diabetic and immunocompromised patient. Behaviour of fungal osteomyelitis is not much different than bacterial osteomyelitis but they do not improve only with antibiotics. prompt diagnosis of such case are needed in terms of radiological and histopathological examination. Control of underlying systemic condition, long term antifungal therapy along with surgical debridement of wound are indicated. Maintaining aseptic sterilization techniques and regular follow up of patient even after minor surgical procedure allows early diagnosis and prevention of such disease.

References:

1. Fungal osteomyelitis of maxillofacial bones: Rare presentation J Oral Maxillofac Pathol. 2016 Sep-Dec; 20(3): 546. Aadithya B U r s, Hanspal Singh, Sujata Mohanty, 1 and Pankaj Sharma 1
2. Presentation and outcome of rhino-orbital-cerebral mucormycosis in patients with diabetes. A Bhansali, S Bhadada, A Sharma, V Suresh, A Gupta, P Singh, A Chakrabarti, R J Dash. Postgrad Med J. 2004
3. Improved diagnosis and prognosis of mucormycosis. A clinicopathologic study of 33 cases. Parfrey NA. Medicine (Baltimore) 1986 Mar; 65(2):113-23

4. Koorbusch GF, Fotos P, Goll KT. Retrospective assessment of osteomyelitis. Etiology, demographics, risk factors, and management in 35 cases. Oral Surg Oral Med Oral Pathol. 1992;74:149–54.
5. Yohai RA, Bullock JD, Aziz AA, et al. Survival factors in rhino-orbital-cerebral mucormycosis: major review. Surv Ophthalmol 1994;39:322. CrossRef PubMed Web of Science Google Scholar
6. Ferry AP, Abedi S. Diagnosis and management of rhino-orbitocerebral mucormycosis (phycomycosis). A report of 16 personally observed cases. Ophthalmology. 1983;90:1096–104. [PubMed]

Conflict of interest: None
Funding: None
Cite this Article as: D Mehta, U Shah, Mankar S. Fungal Osteomyelitis : Case Report. Natl J Integr Res Med 2018; 9(3):79-81