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CASE REPORT - OTORHINOLARYGOLOGY

ORO-NASAL FISTULA - A RARE PRESENTATION OF MAXILLARY OSTEOMYELITIS IN THE MODERN ERA OF ANTIBIOTICS

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Abstract

ABSTRACT : Maxillary osteomyelitis is rare disease since maxilla is a cancellous bone with more collateral blood supply and meagre medullary tissue. Mandible is more commonly involved site than maxilla. We hereby report a case of maxillary osteomyelitis which is extremely rare presentation with different symptomatology & its management. The patient had an uneventful recovery. When Maxillary osteomyelitis is present, there is possibility of malignancy or granulomatous disease and it should be ruled out.

KEYWORDS :
Maxillary osteomyelitis, Weber Fergusson, sequestrum, maxillectomy, diabetes mellitus, micro motor drill.

INTRODUCTION

Osteomyelitis a dreadful disease long ago has now become easier to treat due to advances in diagnostic and treatment modalaties1. However the disease still holds interest among clinicians because of its varied symptomatology and mode of presentation1.

Osteomyelitis primarily involves the medullary cavity and the adjacent cortex. The odontogenic origin is the major source of infection in maxilla-facial osteomyelitis1.

Rees in 1947 described this condition. All three components of bone: periosteum, cortex and marrow2 are involved in Suppurative Osteomyelitis. Because of the more extensive maxillary blood supply and thin cortex and meagre medullary tissue makes maxilla impossible for infection within bone making the oedema and pus spread into the nearby soft tissue and paranasal sinuses5.

CASE REPORT

A 45 year old female, with known case of uncontrolled diabetes mellitus for the past 5 years and no habits, presented with history of regurgitation of food particles and foul smelling discharge through the right nasal cavity for the past 10 days and swelling over the right cheek for the past 40 days. The patient had undergone dental extraction 2 months ago and was treated with oral antibiotics, she responded well initially later developed the above symptoms over a period of 40 days.

On examination of this patient, a firm tender swelling over the right maxilla was palpable with smooth surface. Skin over the swelling was normal. Unhealthy sequestrum (Figure 1) seen over the right half of the hard palate. There was an oro-nasal fistula through which foul smelling inspissated food material were extruding.

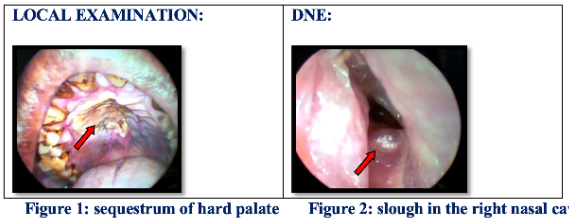

Figure 1: sequestrum of hard palate

Figure 2: slough in the right nasal cavity With foul smelling inspissated food particles

Nasal endoscopy revealed slough with mucopurulent discharge over the floor and lateral wall of right nasal cavity. Turbinates could not be made out. (Figure 2)

CT PNS revealed extensive bony destruction and osteolysis of medial, anterior, postero lateral wall of right maxilla and right orbital floor with right maxillary sinus soft tissue opacification (Figure 3).

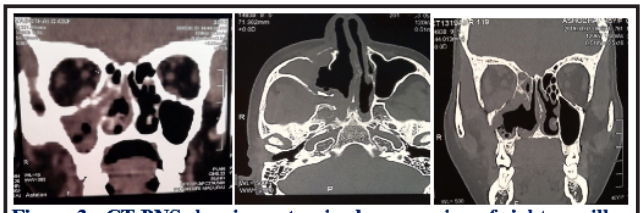

Figure 3: CT PNS showing extensive bony erosion of right maxilla with evident oro-nasal fistula

Figure 3: CT PNS showing extensive bony erosion of right maxilla with evident oro-nasal fistula

Biopsies were taken from the hard palate and the existing oro-nasal fistula. Histopathology showed

"Evidence of necrotic bone with marked chronic inflammatory infiltrates";

No evidence of malignancy or granulomatous disease" (figure 4)

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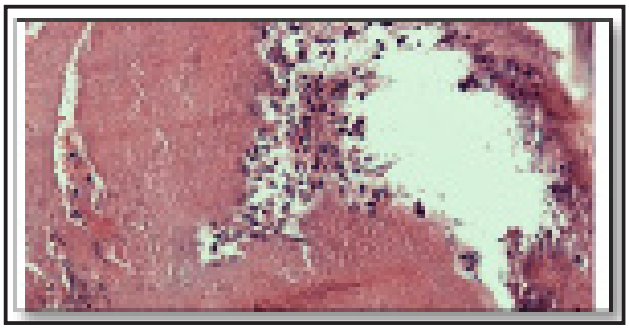

Figure 4: necrotic bone with chronic inflammatory infiltrates

Patient was taken for subtotal maxillectomy by weber Fergusson's approach (figure 5), periosteum over anterior aspect of maxilla was raised laterally up to zygomatic process. (Figure 6) Palatal flap was raised using periosteal elevator. On pressure, anterior bony wall of maxilla was necrosed and broke easily. Bony cuts and fissure burr over anterior wall and medial wall of maxilla, incisor and hard palate were taken using micro motor drill. (Figure 7) Rest of the subtotal maxillectomy was done with the help of round body cutting and diamond burr (6mm). The round burrs excise dead bone in a controlled manner until fresh bleed is seen. This prevented removal of unnecessary bone. A thorough wash using diluted betadiene was given. Gutta percha was inserted to maintain the facial contour. Nasal packing done. Nasogastric tube feeds for 7 days was given following which oral feeds were started. Obturator inserted and the patient recovered uneventfully (Figure 8).

(Figure 5)Step 1: Weber Fergusson incision

(Figure 6) Step 2: sub periosteal flap

(Figure 7) Step 3: Bony cuts & maxillectomy

Figure 8: Post operative period before and after obturator insertion

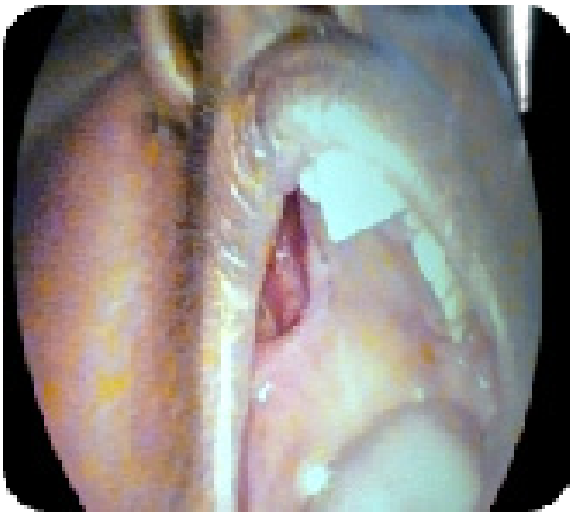

Figure 9: Post operative period before and after obturator insertion

DISCUSSION

Osteomyelitis is a rare entity in today's era and maxillofacial involvement is extremely rare2. The term osteomyelitis is a pathology of inflammation and infection involving bone. Maxillofacial Osteomyelitis more commonly involves mandible2 as a result of haematogenous spread and contiguous spread from infective focus, or direct inoculation due to trauma3. Diabetes mellitus, autoimmune conditions, malignancies and malnutrition are some immune compromised status which are major predisposing factors along with diminished host defences. 85% of Haematogenous osteomyelitis occur in paediatric age group and in adults it is post traumatic involving 50% cases. Maxillary osteomyelitis can be classified

a) Traumatic - following accidental or iatrogenic trauma. The primary site of infection is antrum, teeth, or lacrimal sac

b) Rhino-genic - spontaneous spread of infection from the antrum and postoperative rhino-genic cases

c) Odontogenic - dental-root sepsis may progress to osteomyelitis.

The most common source of infection in maxilla facial osteomyelitis is the local periodontal infection. In one study, the source of infection in 74% was identified as odontogenic component, 16% had maxillary sinusitis and 6.4%1had trauma.

In another study, among uncontrolled diabetic patients, 45.1% had maxillary osteomyelitis 2

In another study, 51% patients of maxillary facial osteomyelitis patients were found to have pre-existing periodontal disease.

Our patient who had a poor glycaemic control also had local odonatological infection1.

Clinical, radiological and histological investigations makes diagnosis easy. Leucocytosis and neutrophilia are observed in acute infections with elevation in ESR and CRP and helps in course of treatment. Histological analysis of soft tissue and bone sequestra by Biopsy to rule out neoplasm is essential2.

The goals of successful management involves accurate diagnosis with complete removal of underlying disease. Accurate localization of bone involvement, effective culture-directed broad spectrum high end antimicrobial therapy, surgical dead tissue debridement, rehabilitation and improving the host's defence are the mainstay treatment2.

CONCLUSION

The most difficult to treat infectious disease is maxillary osteomyelitis and remains to be a challenge. Good clinical knowledge is critical to initiate proper and accurate investigation1. The key to successful management is vigilant medical management with appropriate intervention by surgery. In our case subtotal maxillectomy-weber Fergusson's approach along with use of round burrs micro motor drill for clearing full disease and remains conservative to prevent disfigurement of face and oro- nasal fistula post-surgically.

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