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Osteomyelitis Of Left Maxilla- A Clinical Case Report

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ABSTRACT

Osteomyelitis is an acute or chronic inflammation that affects both the cortical and trabecular structures of bone or bone marrow. The maxilla is less susceptible to osteomyelitis than the mandible due to its thin cortical bone and high vascularity.It is associated with systemic diseases such as autoimmune, diabetes, leukaemia, anaemia, and nutritional deficits. Risk factors include deficiencies, syphilis, agranulocytosis, cancer, chemotherapy, and radiation, as well as alcohol or tobacco. New antibiotics, better knowledge of pathophysiology, and advancements in medicine have all contributed to improved outcomes. Here we present a rare caseof maxillary osteomyelitis involving the left maxilla.

Key words: Osteomyelitis, cortical bone, high vascularity ,autoimmune diseases

INTRODUCTION

Osteomyelitis is a bone infection that begins in the medullary cavity, rapidly spreads to the haversian canal and can lead to further involvement of the periosteum of the affected area. Prior to medications, this sickness was life-threatening. The maxilla seldom develops osteomyelitis or necrosis. [1] The maxilla's unique characteristics include high vascularity, collateral blood flow, porousness, paucity of medullary tissues, thin cortices, and bone marrow with struts. These traits prevent infection from being confined to bone and allow oedema and pus to spread to soft tissue and paranasal sinuses, preventing bacterial colonisation. Osteomyelitis most commonly seen in the 5th and 6th decade of life. It is linked to systemic disorders such as autoimmunity, diabetes, leukaemia, anaemia, and nutritional deficiencies. [2] Risk factors include deficiencies, syphilis, agranulocytosis, cancer, chemotherapy, and radiation, as well as alcohol or tobacco use. Osteomyelitis is diagnosed using a patient's history, clinical examination, and radiographic or surgical results.Histopathological study can help with diagnosis. [3] Here we present the case of osteomyelitis of maxilla.

CASE REPORT

A 41-year-old patient, reported to our department with a chief complaint of pain in the upper left back tooth region for past 7 months.History revealed pain which was followed by extraction in the upper back tooth region which was chronic in nature, intermittent in type, radiating towards left side of face and aggravated during mastication with no relieving factors, history also revealed discharge from the extraction site for past 1 month. Extraoral examination revealed mild diffuse swelling over the left malar region which was not clinically evident and tender on palpation was present.

Figure 1: Frontalview

Intra oral examination revealed missing 26, 27. On palpation, tenderness was present, evidence of bony step deformity with depression over buccal cortex in relation to 26, 27 and maxillary tuberosity region was also present, discharge evident over 26 region.

Figure 2: Depression seen over the buccal cortex in relation to 26,27

CBCT of maxilla done which revealed oro-antral fistula in relation to 26, 27regions with left maxillary sinusitis.CECTrevealed chronic osteomyelitis of left maxillary alveolus with thinning of floor of left maxillary antrum.Treatment involved the sequestration of the involved left maxilla which was then sent for biopsy.

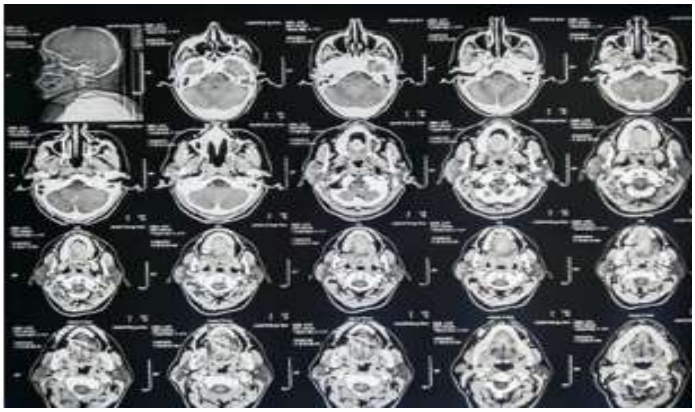

Figure 3: CT OF Maxilla

Histopathologicalexamination shows fragments of bony trabeculae with some of them showingempty lacunae devoid of osteocytes.The attached fibrocollagenous tissue show chronic lymphoplasmacytic infiltrate and areas of hemorrhage along with one of the fragments showing ulcerated stratified squamous epithelial lining. Also,focal areas with evidence of new bone formation rimmed by osteoblasts and separated by fibrovascular connective tissue is present.

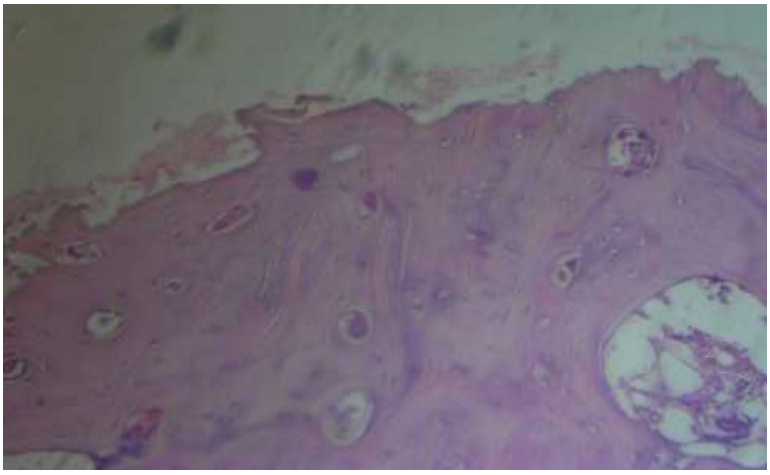

Figure 4a: Hand E section showing bony trabeculae with scattered osteocytes (x10magnification

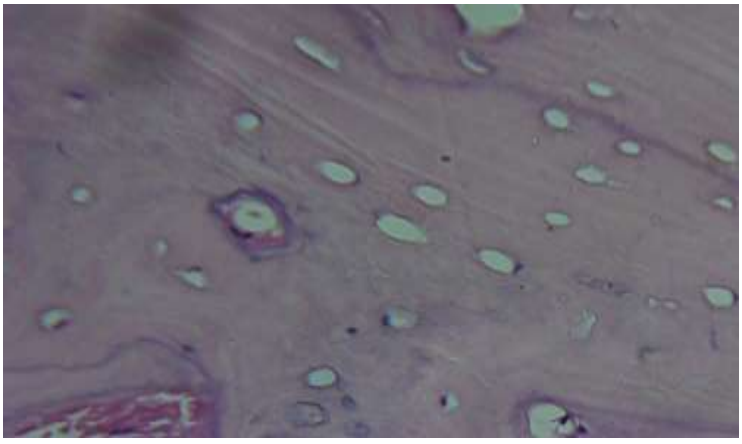

Figure 4b: H and E section shows bony trabeculae with empty lacunae devoid of osteocytes (x40 magnification)

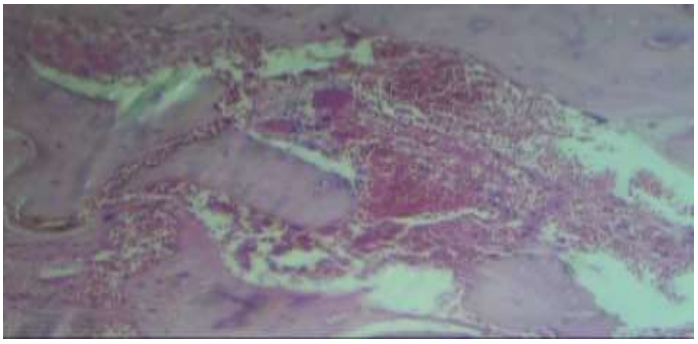

Figure 4c: H and E Sections showing fibrocollagenous stroma with areas of haemorrhage (x10 magnification)

DISCUSSION

Osteomyelitis is an inflammation of the bone involving the haversian system that starts in the medullary cavity and ends in the periosteum. [5] Reduced host defences and immunocompromised states, such as immunodeficiency syndrome, diabetes, autoimmune diseases, carcinomas, and malnutrition, are the main causes of osteomyelitis. [5] According to Ranjith Kumar Peravali et al., the odontogenic component (74%), maxillary sinusitis (16%), and trauma (6.4%) are the main sources of infection. [6]. Due to the extensive use of antibiotics, early diagnosis, and treatment guided by innovative imaging modalities, maxillary osteomyelitis is a rare condition.Sinusitis and tooth infections are the two primary reasons. [7]Because of its thin bone structure and relatively well-established vascular supply, the maxilla is rarely affected by sinusitis, which is more common to affect the frontal bone. [7].Peravali et al. report that 68% of cases of maxillary osteomyelitis are associated with diabetes mellitus,as hyperglycemia impairs the immune system by changing the blood flow distribution to the maxilla.[6]According to Kinnman et al., from their study of 13 patients, eight

patients had previous dental caries and extraction as causative agents.[9]Some common symptoms of acute osteomyelitis of the jaws include fever, malaise, trismus, facial cellulitis, and significant leucocytosis, whereas clinical manifestations of chronic jaw osteomyelitis include swelling, discomfort, purulence, extraoral or intraoral draining fistulae, and nonhealing soft tissue lesions.[8]Histopathologicalfeatures of Osteomyelitis shows an increase in osteoblasts, thick bone trabeculae, and fibrous marrow. Chronic osteomyelitis leads to abnormal bone remodelling. Chronic inflammatory cells are also seen. [9]The above case shows fragments of bony trabeculae with some of them showing empty lacunae devoid of osteocytes. The fibrocollagenous tissue show chronic lymphoplasmacytic infiltrate and areas of hemorrhage along with one of the fragments showing ulcerated stratified squamous epithelial lining.[4]Based on the findings we came the diagnosis of osteomyelitis - left maxilla. Treatment for osteomyelitis involves a combination of antibiotics, surgery, and ongoing follow-up.

CONCLUSION

Osteomyelitis is a relatively rare condition among medically well people.Prompt and strong treatment is recommended for widespread forms, particularly in young healthy females. Aesthetics become extremely important. [3] Infection of the maxilla can lead to significant consequences, including infections of the cranial cavity and brain. Any maxillary osteomyelitis should be aggressively treated to prevent negative outcomes.[2]

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