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CLINICAL SCENARIO OF NON HEALING ULCER IN MANDIBLE

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ABSTRACT

Osteomyelitis is a localized destruction and inflammation of bone that occurs frequently in immunocompromised patients. Osteomyelitis in the jaws is commonly associated with odontogenic infections, dental extraction and fractures. In this case report, we discuss a non healing ulcer in the mandible of a female patient after the extraction of a tooth.

KEYWORDS: *Osteomyelitis, Sequestrum*

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INTRODUCTION

Apposition of new bone before necrosis and destruction of bone occurs due to infectious conditions which might be a result of inflammation of bone and bone marrow. They are frequently associated with immunocompromised patients [1,2,3]. Here a clinical scenario of a non healing ulcer in relation to the mandible has been reported.

CASE REPORT

A geriatric female of 75 years of age came with discomfort on the left side of her face. After a few days, the patient experienced excruciating pain in relation to the extraction socket region. After two weeks of extraction, discomfort led to the formation of swelling which gradually increased in size. The patient underwent extraction of the mandibular second molar before one month. Medical complaints accounted for diabetes mellitus and hypertension for which the patient took medication for 21 years. Extraoral findings included swelling on the face localising on the left side which was tender on palpation, soft consistency, warmth and a measurement of about 2x3 cm (Figure 1). Necrosis of the gingiva, alveolar mucosa and sequestrum were observed intraorally in relation to the submandibular region of the left side. Gingival bleeding followed by oedema, and erythema features were observed (Figure 2). The presence of maxillary and mandibular anterior teeth was seen along with chronic periodontitis with grade II mobility. Orthopantomograph depicted generalised necrosis of bone localising in the mandible on the involved side (Figure 3). Increased C reactive protein and albumin levels were noted in urine. This non healing ulcer reminded of osteomyelitis. Antibiotic therapy was followed first followed by incision and drainage. Curettage and irrigation were preferred in the removal of exposed bone. After follow-up for 10 days, nil postoperative complications were seen.

DISCUSSION

The oral microbiome serves as an important source of infection in immunocompromised patients via saliva and plaque.

Classification

Pathogenesis and etiology play an important role in the Zurich classification system which is as follows, 3

- Acute
- Secondary chronic
- Primary chronic

Sequestration, fistula and suppuration might result in acute and secondary types. Etiology targets odontogenic infection, periodontitis, pulpal infection, fractures, extraction and foreign bodies resulting in the appearance of clinical symptoms within 4 weeks. Nonsuppurative nature accounts for primary chronic osteomyelitis. Suei classification system depends on the suppuration, etiology, radiology, histopathology, antibiotic therapy, prognosis and complications. Osteomyelitis of bacterial nature is suppurative and intraosseous, which can be either acute or chronic, with species of Peptostreptococcus, Pseudomonas and Staphylococcus. SAPHO syndrome constitutes of Peptostreptococcus, Actinomyces and Propionibacterium species. Suppurative osteomyelitis can be classified into periostitic osteomyelitis, tuberculous osteomyelitis and sclerosing osteomyelitis which is of focal and diffuse. Antibiotic therapy plays a positive role in the suppurative type whereas a negative role in the non-suppurative type[4,5]

Etiopathogenesis

Streptococcus and Staphylococcus are primary microbes in the causative etiology. The spread of infection via the medullary cavity occurs and extends up to the haversian system and periosteum, which might be with a vascular counterpart or without a vascular counterpart.[7]

The Secondary role of trauma and surgery is seen in osteomyelitis without vascular counterpart via direct inoculation or extension to the bone. Diabetic foot infections are a classical example of osteomyelitis with vascular counterpert [8,9,10]. Medically compromised conditions such as sickle cell anaemia, intravenous drug abuse, alcohol, tobacco, Acquired Immune Deficiency Syndrome and malignancy exhibit osteomyelitis[11,12,13]. Recent trends include the occurrence of polymorphonuclear cells in infected implant cases, invasion of cortical bone submicron channels by Staphylococcus aureus and immune cell recruitment with osteocyte involvement[14]

Clinical examination includes pus discharge, limited mouth opening, lip paresthesia, pathological fractures and hypoesthesia of the inferior alveolar nerve, febrile, pain, swelling, erythema and fistula[10]. Radiologically, orthopantomogram depicts sclerosis in relation to the maxilla and mandible, osteoclasia and an increase in lamina dura thickness. Perisoteal reaction, periosteal elevation and well circumscribed bony radiolucency are seen in acute osteomyelitis [15,17].

Histopathological Features

Acute inflammatory cell infiltrate, >5 polymorphonuclear cells x400 magnification, fibrin exudate, and fragmented trabeculae are seen in acute osteomyelitis whereas in chronic cases, macrophages, plasma cells, lymphocytes, neutrophilic granulocytes, fibrosed medullary spaces and osteoblasts [18,19,20,21]. Laboratory diagnostic features include increased leukocytes. Staining includes Gram - Ziehl Neelsen[22,23,24,25,26]

Management

The management sector includes antibiotic therapy, incision-drainage, resection of the jaw, sequestrectomy, decortication, hyperbaric oxygen therapy and saucerization leading to an improved quality of life for the patients[27, 28,29,30,31]

CONCLUSIONS

Microbial infection such as osteomyelitis is of utmost importance which may occur with and without vascular compartments thereby affecting the quality of life of the patient. Advanced research pertaining to diagnosis, investigations and treatment segments is to be done for better patient outcomes and survival.

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Figure 1

Figure 2