

**Chronic Osteomyelitis of the mandible- A case report**

<sup>1</sup>Dr. Nishant Kumar, Postgraduate 2<sup>nd</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

<sup>2</sup>Dr. Smriti Kumari, Postgraduate 2<sup>nd</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

<sup>3</sup>Dr. Shashank Narasimhan, Postgraduate 1<sup>st</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

<sup>4</sup>Dr. Shradha Tiwari, Postgraduate 1<sup>st</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

<sup>5</sup>Dr. Riddhi Datri Mishra, Postgraduate 1<sup>st</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

<sup>6</sup>Dr. Bibhu Prasad Mishra, Postgraduate 3<sup>rd</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

**Corresponding Author:** Dr. Nishant Kumar, Postgraduate 2<sup>nd</sup> year, Department of Oral and maxillofacial surgery, ITS Dental College, Hospital and research center, 201308, Uttar Pradesh.

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**Abstract**

Osteomyelitis is an inflammatory bone disease that typically begins as a medullary cavity infection, quickly affects the haversian system, and gradually spreads to the periosteum of the area. This occurs in the jaws after a chronic odontogenic infection, or for a number of other causes such as trauma, insufficient fracture care or mandible irradiation. When antimicrobial agents or drainage prove unsuccessful, acute osteomyelitis may become chronic. We present a case of chronic suppurative

osteomyelitis which was successfully treated with surgical debridement, sequestrectomy and saucerization.

**Keywords:** Osteomyelitis, Mandible, Localized osteomyelitis, Osteomyelitis of mandible.

**Introduction**

osteonecrosis of the jaws is characterized by the presence of exposed bone in the mouth, which fails to heal for a duration of six to eight weeks after sufficient treatment <sup>[1]</sup>. Osteomyelitis is an inflammation of the bone cortex and the marrow which typically develops after a chronic

infection in the jaw. Since the introduction of antibiotics, the incidence of osteomyelitis has decreased dramatically. In addition, osteomyelitis of the skeleton of the head and neck is rare particularly in the jaws.

The osteomyelitis-related drugs are hormones, chemotherapeutic agents, bisphosphonates and other toxic therapeutic agents. Local conditions that adversely affect the blood supply or cause tissue necrosis and can also predispose the host to bone infection or localized osteomyelitis. Osteomyelitis has a number of clinical symptoms depending on the infecting organisms' virulence, host resistance, and the periosteum's response to inflammation [2].

Acute osteomyelitis can become chronic when antimicrobial agents or drainage prove ineffective. For its treatment, traditional radiography, biology, bone biopsy, radioisotope bone scan, Doppler laser flowmetry, computed tomography, and magnetic resonance imaging are used [3].

In this article we report a case of a patient developing chronic suppurative osteomyelitis of the lower jaw.

### Case Report

A 41-year-old female with asthma who takes beta agonist inhaler occasionally reported to the Department of oral and Maxillofacial Surgery, I.T.S Dental college, Hospital and Research Centre in October, 2018 due to pain and swelling in the right lower back jaw for 1 month. Patient had a history of undergoing root canal treatment with respect to 46 and 37 one month back and was prescribed with antibiotics.

Clinical examination revealed localised tenderness in right angle region appearing nodular, non-fluctuant, non-compressive mass extending from posterior border of mandible to angle region and subsiding at the body of mandible. Orthopantomogram was done for the patient

which revealed a periapical radiolucency with moth eaten appearance (Figure 1).



Figure 1

The hematologic profile showed an increase in white blood cell count; however, the red blood cell count was normal. With the provisional diagnosis of chronic suppurative osteomyelitis, the patient was given intravenously Augmentin 1.2gm every 12 hours and Metronidazole 100 ml every 8 hours and was scheduled to an operating room for surgical removal of 48, debridement, sequestrectomy and saucerization. Impacted 48 was extracted, thorough curettage was done followed by betadine and saline irrigation. Buccal sequestrum was removed and saucerization was done using acrylic trimming bur (Figure 2).



Figure 2

The cavity created was packed with abgel and closure was done. The postoperative period was uneventful and the patient was discharged from the hospital with oral

augmentin 625 mg 3 times a day for the next two weeks. The patient was symptom-free in the first postoperative follow-up one month after the surgery. The patient refused to undergo postoperative control x-rays.

#### Discussion

Osteomyelitis of the jaws is an uncommon condition, that has been related with different systemic conditions like diabetes, autoimmune conditions, malignancies, lack of healthy sustenance, and AIDS. The bone metabolism is affected by many therapeutic materials. Some are traditionally used in dentistry. Arsenic-based compounds are one such example. These materials are common among practitioners who are not familiar with modern contemporary dental anesthesia techniques<sup>[2]</sup>.

The diagnosis of osteomyelitis is based on the appearance of painful sequestra and suppurative areas in the tooth-bearing Jawbone which is non-responsive and conservative care. For the presence of micro-organisms, tissue specimens should be cultured<sup>[4]</sup>. When soft tissue and bone specimens have been collected, they must be sent directly to the microbiology laboratory to classify the stroma with empty lacunae with the necrotic bony trabeculae. Chronic osteomyelitis was confirmed by thick fibrous tissue with inflammatory cells including lymphocytes and plasma cells.

Differential diagnosis of such lesions includes paget disease, hypercementosis, fibrous dysplasia, early stage bone tumor, fibrous dysplasia and osteogenic sarcoma<sup>[5]</sup>.

The treatment for chronic mandibular osteomyelitis includes comprehensive surgical and sustained antimicrobial debridement therapy as in our case. In addition, sufficient fluid therapy, nutrient consumption, antibiotics, microvascular grafts, and adequate rest can be helpful<sup>[6]</sup>.

#### Conclusion

This case shows that surgical debridement followed by sequestrectomy and saucerization is a definitive method of treating suppurative chronic osteomyelitis, with good clinical / radiological results and postoperative activity.

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