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POSTOPERATIVE COMPLICATION AND TREATMENT OF THE CHRONIC OSTEOMYELITIS: A CASE REPORT

KRONİK OSTEOMYELİTİN POSTOPERATİF KOMPLİKASYONU VE TEDAVİSİ: VAKA RAPORU

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ABSTRACT

Osteomyelitis is an inflammatory condition of bone that involves the medullar cavity and has a tendency to progress along these spaces. The isolation of the oral fluids and prevention of contamination is extremely important in the reconstruction of the mandibular defects that are caused by the resistant infections as in osteomyelitis. The purpose of this paper was to describe a case of a 43 years old man having pathologic fracture of the mandible and partial necrosis of inferior alveolar nerve related chronic suppurative osteomyelitis and to report a postoperative complication that was successfully treated. Use of acrylic prosthesis in patients in whom no graft materials are used may be helpful in the healing by partially isolating the wound site from the oral medium.

Key words: Osteomyelitis, jaw fracture, postoperative complication, acrylic prosthesis

ÖZET

Osteomyelit, medullar kaviteyi kapsayan ve bu alan boyunca ilerleme eğiliminde olan kemiğin bir inflamasyonlu halidir. Ağız sıvılarının izolasyonu ve kontaminasyonun önlenmesi osteomyelit gibi dirençli enfeksiyonların neden olduğu mandibular defektlerin rekonstrüksiyonunda oldukça önemlidir. Bu makalenin amacı kronik süpüratif osteomyelitin neden olduğu inferior alveolar sinirin kısmi nekrozuna ve mandibulanın patolojik fraktürüne sahip 43 yaşındaki bir hastayı betimlemek ve başarılı bir şekilde tedavi edilen postoperative komplikasyonu rapor etmekti. Greft materyalleri tercih edilmeyen hastalarda akrilik protezlerin kullanılması yara bölgesinin ağız ortamından kısmen izolasyonunu sağlayarak iyileşmede katkı sağlayabilir.

Anahtar kelimeler: Osteomyelit, çene fraktürü, postopertaif komplikasyon, akrilik protez.

INTRODUCTION

Osteomyelitis is an inflammatory condition of bone that involves the medullary cavity and has a tendency to progress along this space.[1-5] Osteomyelitis, if left untreated or got not treated enough, the infection can become chronic and causes a loss of blood supply to the affected bone. The devitalized bone acts as a foreign body, perpetuating infection despite a long-term antimicrobial therapy.[2,6]

If necrotic or ischemic bone area is large, it will remain as sequestrum.[2,3] In chronic suppurative osteomyelitis, sinus forms, where intra or extra oral pus drains, after intermittent fever associated with abscess. The patient starts to feel comfort after closure of the sinus and relief of severe symptoms.[2]

The major factors contributing to osteomyelitis of the mandible are odontogenic infections and maxillofacial traumas.[1-4] Additionally, exposure of the head and neck region to radiotherapy, uncontrolled diabetes, and immunosuppressive therapies as well as heavy smoking and drinking increase risk for mandible

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osteomyelitis development.[5,7] Treatment protocol covers combination of surgical intervention and antibiotic administration.[1,2,7] The purpose of this paper was to describe a case of a 43 years old man having pathologic fracture of the mandible and partial necrosis of inferior alveolar nerve related chronic suppurative osteomyelitis and to report a postoperative complication which was successfully treated.

CASE REPORT

A 43 years old man was referred to our oral and maxillofacial surgery clinic with complaining of numbness in right mandible, intraoral purulent leakage, limited mouth opening, and swelling in mouth. Patient had had mandibular right third molar (48) extracted 6 months ago. Thereafter, he had felt occasional swelling and purulent leakage, whereas there had been an increasing numbness similar to an anaesthesia state. Patient was free of any systemic infection, but had lower facial asymmetry in extra-oral examination. Intra-oral examination revealed trismus, purulent leakage where mandibular right third molar was pulled, and unhealthy soft tissue in its surroundings. All teeth in the lower right jaw were unresponsive to the electrical pulp test. Computerized tomography revealed pathological fracture below lower edge of the mandible and bone islet was isolated by demarcation line that was independent from fracture (Figs. 1A and 1B). Bacterial examination of the pus was positive for methicillin-susceptible *Staphylococcus aureus* (MSSA).

After administration of nafcillin 2g/day intravenously and thiocolchicoside 8mg/day intramuscularly, the patient underwent surgery under general anaesthesia upon diagnosis of chronic suppurative osteomyelitis. Yellowish sequestered bone tissue, mandibular right second premolar, and second molar as well as necrotic soft tissue were removed intraorally. Partial necrosis-related osteomyelitis of inferior alveolar nerve was confirmed. To ensure healthiness remaining bone, very small areas were curetted out for bleeding. The mandibular segment was fixed totally by a straight reconstruction plate (in 2.4 mm thickness) that was placed an intra-orally via screwing it transorally upon an incision. A drainage tube was inserted through an extraoral incision and left for two days while primarily closing the operation area. A partial dehiscence at the intraoral incision site was observed on the postoperative second day. This was sutured but found out to be persisting on the postoperative third day hence a loose packing was inserted into the cavity through the slit and the surgical site was partially isolated from the oral medium by using an acrylic prosthesis (Fig. 2). We prescribed nafcillin (Nafcil, Bristol - Myers Squibb, İstanbul, Turkey) 2g / day intravenously for one week. Then, the patient was discharged taking amoxicillin plus clavulanate potassium (Klavunat, Atabay, İstanbul, Turkey) 2g / day orally for three weeks. The packing was renewed daily for the first week and then once in three days for a month until the dead space at the surgical site was replaced by the soft tissue. Samples collected during surgery were subjected to histopathological examination which ascertained diagnosis of osteomyelitis (Fig. 3). Culture of removed tissue also corroborated presence of MSSA. Complete bony union was shown with no signs of recurrence of osteomyelitis after 12 months following the operation (Figs. 4A and 4B). However, the numbness of the mandible was not improved.

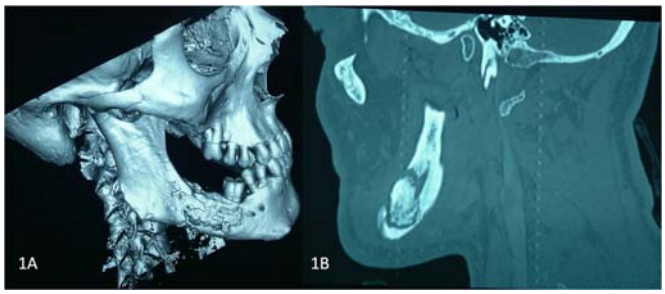

Figure 1. (A) Three-dimensional CT scan of lesion on right mandibular molar. (B) CT scan of pathological fracture at the lower edge of right mandible.

Figure 2. The view of the acrylic prosthetic that was applied to the surgical site.

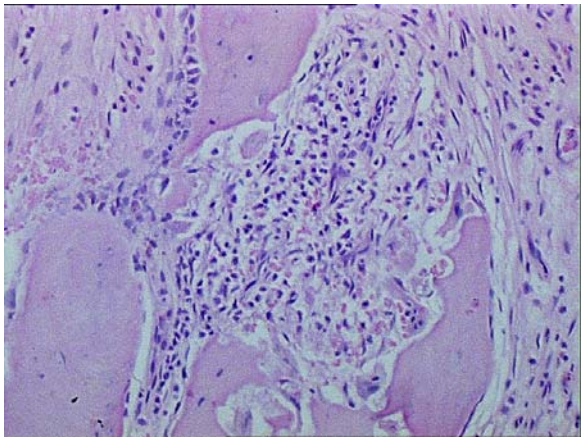

Figure 3. Osteomyelitis in right mandible (HEx200) with mononuclear cell infiltration, degenerations, and minimal-free haemorrhage in bone trabeculae.

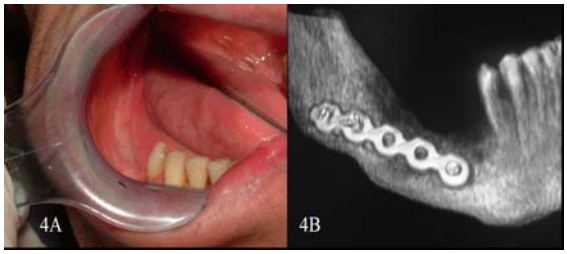

Figure 4. (A) Intraoral appearance of the patient 12 months after the surgery. (B) A three- dimensional CT scan after 12 months following the operation displaying complete bone union and no signs of recurrence of osteomyelitis.

DISCUSSION

Chronic osteomyelitis of the mandible is rare and difficult to treat.[7] The current general consensus about the treatment for chronic osteomyelitis of the mandible is surgical debridement which is the removal of the affected tissues, and if necessary, reconstruction of structures supported by antimicrobials parenterally for one week followed by oral penicillin for three weeks postsurgery.[2,4,7] The main objective of surgical treatment is to remove all affected tissues and debris. Meanwhile, pulling affected teeth out and supportive replacement therapy may benefit.[1] The isolation of the oral fluids and prevention of contamination is extremely important in the reconstruction of the mandibular defects that are caused by the resistant infections as in osteomyelitis.[7] Local flaps or vascularized free flaps are commonly being used in order to achieve these conditions depending on the magnitude of the defects.[8,9] However in our case in which no soft tissue flap was used the healing of the osteomyelitis and the replacement of the dead space by the healthy bone, despite mucosal discontinuity, is quite interesting. Without employing bone graft, using a straight reconstruction plate to fix the mandible was reliable because it supported bone reunion rapidly. Although having not achieved a primary closure, none of the complications associated with placement of reconstruction plate,[10] such as immediate orocervical fistula, late plate exposure, and plate fracture and/or screw loosening was noted in our patient.

CONCLUSION

Primary closure of the wound edges in the reconstruction of moderate defects of the mandible caused by osteomyelitis may not always be possible. Use of acrylic prosthesis in patients in whom no graft materials are used may be helpful in the healing by partially isolating the wound site from the oral medium. However, definite opinion concerning this approach can only be obtained by the conduction of more detailed studies.

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