

Case Report
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Utilizing Nasolabial Local Flap in Management Proliferative MRONJ: A Case Report

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ABSTRACT

This case report demonstrates utilization of nasolabial flap for reconstruction a large soft tissue defect associated with osteo-necrotic anterior mandible in highly infiltrative aggressive MRONJ. Immediately after the operation, healing of the lesion was optimized and patient become symptom free.

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Abbreviations

GIST: Gastrointestinal Stromal Tumor, RCC: Renal Cell Carcinoma, PNET: Pancreatic Neuroendocrine Tumor, HCC: Hepatocellular Carcinoma, MCRC: Metastatic Colorectal Carcinoma, NSCLC: Non-Squamous (or) Non-Small Cell Lung Carcinoma, Glio: Glioblastoma, MRCC: Metastatic Renal Cell Carcinoma

Introduction

Medication-related osteonecrosis of the jaw (MRONJ) is dehiscence of maxillofacial bone resulted as a consequence of drug therapy [1]. The exact pathophysiology of MRONJ is not clearly understood and. Prevention of its occurrence is universally accepted to be the best option which however requires comprehensive awareness of MRONJ in doctors treating the 'at risk' patients with cooperation between multiple health specialties. If MRONJ is progressed to a late stage, then its management is found to be challenging and frustrating

In 2003, medication-related osteonecrosis of the jaw was first reported, with the demonstration of 36 bone lesions of the mandible and/or maxilla in patients on pamidronate or zoledronate [2]. The variety of clinical signs and symptoms of medication-related osteonecrosis of the jaw, its etiology, preventive measures, effects of drug holidays, and indicators of prognosis remain undefined. MRONJ appears more frequently in the mandible (73%) compared to maxilla (22.5%); it involves both jaws in 4.5% of the cases [3]. The exact pathophysiology as to why the Maxillofacial bones especially the mandible and maxilla are affected is not very clear. Many factors such as Poor Oral hygiene, Dental extractions, Chronic inflammation, Dental infections, Traumatic injuries, Immunosuppression, Centripetal blood supply of the IA artery within a bony mandibular canal in addition to deficiency of Vitamin D are all believed to play a role [4, 5]. Diagnostic criteria

in patients affected by MRONJ are met if all the following clinical manifestations are demonstrated:

1. Ongoing or antecedent treatment with antiangiogenic or antiresorptive drugs
2. No patient history of radiation therapy or manifest metastasis to the jaw
3. Exposed bone or presence of an intraoral or extra oral fistula in the maxillofacial region persisting for more than 8 weeks [6].

The effectiveness and efficacy of the treatment for medication-related osteonecrosis of the jaw are numerous, both conservative and surgical but have not been properly characterized. In severe stages (Table 1) of MRONJ, the management is challenging and often, the results are frustrating [7].

Table 1: MRONJ Staging System

Stage	AAOMSs system – 2009
At Risk	No evidence of exposed or necrotic bone in patients who have been treated with bisphosphonates
0	Nonspecific clinical findings and symptoms such as jaw pain or osteosclerosis but no clinical evidence of exposed bone
1	Exposed/Necrotic bone in patients who are asymptomatic and who have no evidence of infection
2	Exposed/Necrotic bone associated with infection as evidenced by pain and erythema in the region of the exposed bone with or without purulent drainage
3	Exposed/Necrotic bone in patients with pain, infection, and one or more of the following: Pathologic fracture, extraoral fistula, or osteolysis extending to the inferior border or sinus floor

The following report shows the successful management of soft tissue defect associated with non-healing persistent dehiscence wound after resection the osteonecrotic anterior segment of the mandible.

Case Report

A 75-year-old male patient presented to the department of Oral and Maxillofacial Surgery with a complaint of exposed bone, numbness of lower lip and electrical pain in the anterior segment of the mandible since 6 months. He has several operations for curettage the necrotic bone and mucoperiosteal flap primary closure that went uneventful.

Patient was diagnosed with hyperplasia of the prostate 2 years ago and chronic kidney disease, otherwise the patient is medically fit

Patient underwent conservative management for prostate hyperplasia with zoedronic acid 4 mg IM. Once a week.

On examination, no gross facial asymmetry was seen. Left submandibular solitary lymph node was palpable, mobile, nontender and approximately less than a cm in diameter. Intra oral examination reveals exposed buccal cortical plate in relation to 41, 42, 31, 32, and 33. The mental nerve and foramen were exposed and sensitive to touch. CT scan shows osteolytic bone sequestration extending from right mandibular canine to second mandibular premolar in transverse section and from alveolar process to inferior border of the mandible, which may lead to pathological fracture (Figure 1).



Figure 1: Axial Ct Shows Osteolytic Lesion that Perforate both Lingual and Buccal Cortex

Based on History, clinical and radiological findings, a diagnosis of medication-related osteonecrosis of mandible was made. Patient was then referred to the department of nephrologist regarding kidney function and as he has chronic kidney disease. Patient was declared fit from the department of urologist and general anaesthesia for surgical resection of the necrotic bone as en-block and reconstruction with reconstruction plate (Figure 2). Inferiorly based Nasolabial flap was mobilized from left side for reconstruction of soft tissue defect without tension (Figure 3, 4).

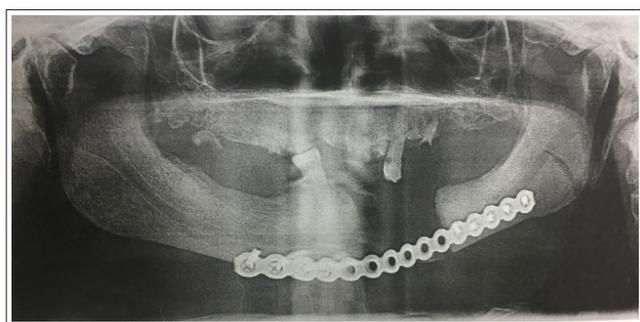


Figure 2: Shows Resection of the Osteonecrotic Bone with Reconstruction the Discontinuity by Recon Plate 2.7 mm



Figure 3: Shows Primary Closure of Donor Site



Figure 4: Shows Nasolabial Flap in Rotated to Cover the Intra Oral Defect

Patient was recalled at interval of 7 days, 15 days, 1 month, 6 months, 12 months, and 18 months. Patient was relieved of symptoms, and he discontinued the use of analgesics after 2 months.

Discussion

Surgical debridement is fraught with difficulty since finding viable bone margins is impossible given the global effect bisphosphonates have on the skeleton and as a result, the development of an enlarged necrotic area has reported [8]. Equally ineffective is the use of tissue flaps to cover painful exposed bone. In these situations, fistulae tend to develop around the flap edges, with complete dehiscence a secondary complication [8].

So the option for surgical resection of the total necrotic bone with safety margin with good soft tissue coverage is an ideal option as demonstrated in this reported case, Nasolabial flap is myocutaneous pedicled flap with good blood supply derived from the facial artery. It is simple easy surgical intervention that does not cause high morbidity or aesthetic disfigurement [1].

In conclusion, this report is additive evidence to the literature that confirm the Nasolabial flap is a good less aggressive option that worth to be incorporated in the management of soft tissue pathology in the area of vestibule and floor of the mouth [1]. In condition that be placed on healthy bone for successful result.

Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient

consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil

Conflicts of Interest

There are no conflicts of interest.

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