

Multidisciplinary Approach for Management of a Patient with Oral Mucosal Malignant Melanoma

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ABSTRACT

Oral mucosal melanoma is rare and more aggressive than cutaneous melanoma. Hard palate and maxillary alveolar crest are most commonly involved. Multidisciplinary team approach is necessary for successful management of this tumor. The main treatment modality is surgical resection, which usually results in impaired mastication, deglutition, speech, oral competence and significant cosmetic deformity. Here, a rare case of oral mucosal melanoma of mandibular gingiva in a 44-year man is reported, who was treated by en-block mandibular resection followed by adjuvant therapy with high dose interferons (IFN) - $\alpha 2b$. Following two weeks of healing period, prosthetic rehabilitation of the patient was done with an interim removable denture prosthesis, which effectively limited the unfavourable effects of surgery and helped him in resocialisation.

Key Words: Malignant melanoma. Mandibular resection. Surgery. Prosthesis.

INTRODUCTION

Malignant melanoma is a relatively rare neoplasm. About 10% of the melanomas occur in the extradermal sites, which include the uveal tract in the eye and mucous membranes of the mouth, anus and genital tract. Depending on the staging of the disease, primary treatment for the malignant melanoma includes resection of the involved site and in advanced stages, adjuvant therapy.¹ Oral mucosal melanoma is an uncommon disease and is more aggressive as compared to cutaneous melanoma.² Its incidence peaks from fourth to sixth decade of life, with males affected twice as compared to females (2:1).² Hard palate and maxillary alveolar crest are most commonly involved.² However, its occurrence is not limited only to maxilla and may rarely involve the mandible. When it occurs in the oral mucosa adjacent to the mandible, surgical resection of segments of the mandible is mandatory for tumor control.

Various pretreatment considerations include tumor prognosis, size of the defect, soft tissue involvement, decreased mandibular opening, and patient motivation. Mandibular resections result in defects that either preserve

mandibular continuity or result in discontinuity defects. The amount of dysfunction depends upon whether the mandibular continuity is preserved or not. In discontinuity defects, without reconstruction, the function is severely compromised because of the loss of coordinated bilateral muscular action, functioning across a bilateral joint.³ The extent of mandibular resection is directly related to the diminished masticatory ability.⁴ On the contrary, patients having mandibular resections that result in little soft tissue loss suffer from less mandibular deviation.⁵

To limit detrimental effects following surgical treatment, various implants such as osseointegrated implants after surgical reconstruction of the mandible, resection prosthesis made of cast metal and an interim acrylic resin partial denture have been advocated. To date, the emphasis has been on osseous reconstruction of the mandible with primary/delayed placement of osseointegrated implants,⁶ followed by functional stomatognathic rehabilitation with dentures supported by implants, which provide improved benefit in mastication on the defect side compared to conventional dentures.⁷ However, the decision making process and patient selection for implant placement is complex with increased financial burden and demanding surgical expertise. Moreover, this treatment can be considered only after a year of surgery in cases of notorious neoplasms such as malignant melanoma, which are known to have high rates of recurrence/metastasis.⁸

Multidisciplinary team management involving oral pathologists, oral and maxillofacial surgeons, oral medicine/radiologist experts, and maxillofacial prosthetists are required for successful treatment and rehabilitation of such patients. This report describes comprehensive management of a patient with malignant melanoma of mandibular gingiva by such an integrated approach.

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Figure 1: Malignant melanoma originating from mandibular gingiva.



Figure 2: Class I mandibular defect after healing.



Figure 3: Prosthesis *in-situ*.

CASE REPORT

A 44-year male patient with a complaint of a blackish growth with bleeding tendency in the lower left front jaw region was referred to the Department of Oral Surgery. Clinical examination revealed a pigmented mass on the gingiva between the mandibular left canine and premolar region which exhibited bleeding on probing. Due to high suspicion of malignancy, biopsy of the lesion was performed and was diagnosed by oral pathologist as Stage IIB malignant melanoma originating in the gingiva (Figure 1). En-block resection of the mandible from mandibular right central incisor to the left molar region was performed. Postsurgically, adjuvant therapy with high dose interferons (IFN) - $\alpha 2b$ was initiated.

After a 2-week healing period, definitive rehabilitation was initiated. The patient was referred to the Department of Prosthodontics for prosthetic rehabilitation and restoration of stomatognathic function. Examination of the patient revealed a Class 1 mandibular defect according to Cantor and Curtis classification for prosthetic rehabilitation of patients with mandibular defects on the left side with missing mandibular first and third molars on the right side (Figure 2). Different prosthetic reconstruction modalities were discussed with the patient. Due to financial constraints, the patient indicated a wish for an economical solution. Therefore, treatment plan was formulated to fabricate an interim acrylic partial denture, and the expectations of the prosthesis were explained to the patient.

Preliminary impressions were made with irreversible hydrocolloid and poured in Type III dental stone. Mandibular custom tray was fabricated with auto-polymerising acrylic resin. The custom tray was extended to cover available mandibular body. Soft tissues were scrutinised because they usually move when the tongue moves or when the patient opens the mouth.

A dual impression technique was used to equalise as much as possible the support derived from the edentulous ridge and that received from the abutment teeth. Light body hydrophilic vinyl polysiloxane (Reprosil®;

Dentsply International Inc, Millford, DE, USA) was used to make an impression only over the resected area and this functional impression was related to remainder of the arch by making putty impression (Reprosil®; Dentsply International Inc, Millford, DE, USA) with the first impression held in its functional position with finger pressure. Definitive cast was poured in Type III dental stone, surveyed (Paraline; Dentaureum, Postfach 440, Germany) and the interim partial denture framework for the mandible was designed. Making maxillo-mandibular relationship records for this patient was challenging as the patient presented with incompetent lips, lack of bony support, and drooling of saliva. Jaw relation was recorded in maximum intercuspation position and casts were articulated in a semi-adjustable articulator (Hanau Wide Vue; Water Pik Technologies, Inc. Fort Collins, CO, USA) and teeth arrangement with monoplane occlusion which allows freedom to function was done.

The denture was processed in heat polymerising acrylic resin, finished and polished after trial. The prosthesis was then inserted and evaluated (Figure 3). The patient was instructed on home care and prosthesis maintenance. A liquid or soft diet was prescribed initially to the patient because of lack of masticatory power and to change gradually to normal dietary pattern. The patient was recalled 24 hours after denture insertion for post-insertion adjustment and observation of the resected area.

Follow up evaluation of the prosthesis revealed that the patient was psychologically and functionally satisfied with the prosthesis. A review appointment was done every 2 months for evaluation of existing prosthesis and for surveillance of any recurrent lesion. Following 1 year of follow-up period, no recurrence was seen and patient reported that the prosthesis helped him immensely in resocialisation, thereby improving his quality of life.

DISCUSSION

As oral mucosal melanomas are highly malignant tumors with certain typical factors associated with them such as the chameleonic presentation, rare occurrence,

poor prognosis, need of a highly specialised treatment and high risk of recurrence, every aspect related to this disease entity should be seriously considered by the involved healthcare provider.⁹⁻¹¹ In most of the cases, the disease is usually advanced at the time of diagnosis with both radial and vertical extensions. Even for patients with presumed early-stage disease, the outcome is generally poor, possibly because of occult metastases at presentation.¹²

As most people do not inspect their oral cavity closely, until significant swelling, tooth mobility, bleeding or other problems arise, regular dental check-ups are of paramount importance for early recognition of such silent lesions. At the same time, regular follow-up is also needed to evaluate for recurrence of disease.¹³ Early recognition, aggressive multimodal therapy, multidisciplinary team management involving oral pathologists, oral and maxillofacial surgeons, oral medicine/radiology experts for treatment, maxillofacial prosthetists for stomatognathic rehabilitation, and a strict follow-up regimen are essential to improve the disease outcome. Regular oral examinations and imaging must be performed by the dental personnel to rule out recurrence; and recognise and treat other potential problems such as masticatory, swallowing and speech difficulties associated with the prostheses.

This case highlights the need for a multidisciplinary team approach in the appropriate management of this deadly tumor.

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