

CASE REPORT



Malignant melanoma of the mandibular gingiva

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Abstract

Malignant melanoma is a perilous tumor originating from melanocytes. Malignant melanoma of the oral cavity has a sporadic occurrence and accounts for about <1% of all oral malignancies. The tumor most commonly occurs in the palate and the maxillary gingiva in the oral cavity, and seldom involves the mandibular gingiva. In this article, we report a 41-year-old man with primary oral malignant melanoma, which presented as a pedunculated pigmented growth involving the mandibular ridge associated with the lower front teeth. Focus is laid on early identification and reporting of such cases. Appropriate knowledge coupled with a high index of clinical suspicion about melanotic lesions may help in early diagnosis of this rare pathology.

Keywords: Differential diagnosis, gingiva, mandible, melanoma, mouth mucosa

Introduction

Malignant melanoma is a perilous tumor originating from melanocytes.^[1] Primary malignant melanoma seldom involves the oral cavity.^[2] Oral malignant melanoma (OMM) accounts for <1% of all oral malignancies. The sites frequently involved are the palate and the maxillary gingiva in the oral cavity. The involvement of mandibular gingiva is uncommon. The tumor usually affects individuals beyond their second decade of life.^[1,2] It can be easily diagnosed clinically as it usually presents as a pigmented growth with irregular outline. However, malignant melanoma can be ominously asymptomatic and be noticed by the patient at a late stage when there is bleeding and mobility of associated teeth. In this article, we report a 41-year-old man with primary malignant melanoma involving the mandibular gingiva.

Case Report

A 41-year-old man reported to the department of oral medicine in a dental hospital, with the chief complaints of bleeding gums associated with pain in the gums of the lower front teeth. The patient was apparently asymptomatic 3 weeks before the presentation. He noticed a growth in the gums of the lower front teeth. The growth was non-progressive, painful on applying digital pressure and was associated with spontaneous bleeding. The patient had consulted a private practitioner for

the same complaints, who referred him to our institution. The previous medical and family history of the patient was non-contributory. Tobacco chewing habit was present for the past 2 years, and he admitted of placing the tobacco in the lower labial vestibule.

The extraoral examination revealed a single submandibular lymph node which was enlarged in the left side, measuring approximately 1 × 1 cm in diameter, soft mobile, and tender on palpation. In the right side, two enlarged submandibular nodes were present; one was 2 × 2 cm in size firm, mobile, and tender on palpation and another 1 × 1 cm in size, soft, and mobile.

The intraoral examination revealed a single exophytic sessile growth which measured 2.5 cm in diameter. The lesion was dark purple to black in color located in the lower labial gingiva associated with the teeth 41, 42, 43, and 44 extending till the depth of the labial vestibule [Figure 1]. Deep discoloration was present in the lingual aspect of the gingiva in relation to the teeth 42, 43, and 44. The surface appeared normal without any secondary surface change.

On palpation, the growth was soft to firm in consistency, tender with bleeding tendency, and the teeth-associated exhibited Grade II mobility. A deep periodontal pocket was present in relation to the teeth 41 and 42. It was provisionally diagnosed as malignant melanoma, and incisional biopsy was performed. The given section consisted of highly cellular pigmented cells distributed throughout the connective tissue mostly spindle in nature suggestive of malignant melanoma [Figure 2].



Figure 1: Intraoral photograph showing a sessile pigmented growth

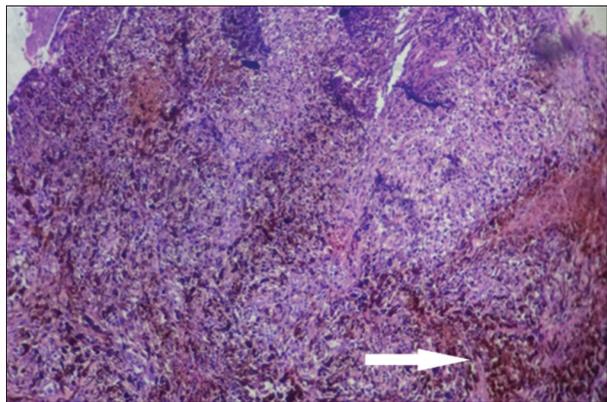


Figure 2: High power view of the lesion showing pigmented cells in connective tissue

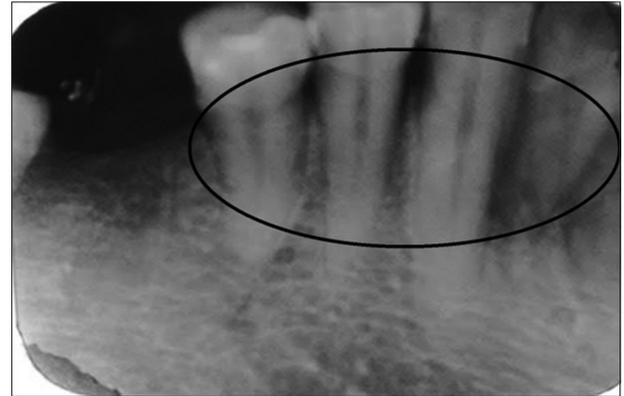


Figure 3: Intra oral peri-apical radiographs showing mild horizontal bone loss

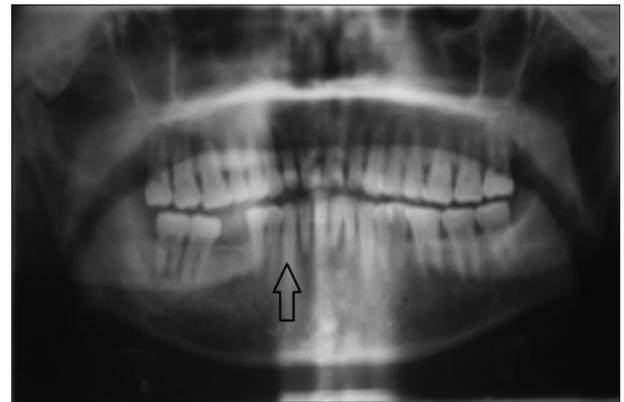


Figure 4: Panoramic radiograph reveals no bony involvement

The differential diagnosis of this case included oral melanotic macule, oral melanoacanthoma, oral nevi, Addison's disease, Peutz-Jeghers syndrome, Cushing's syndrome, graphite tattoo, Kaposi's sarcoma, amalgam tattoo, and physiologic pigmentation.^[3] The intraoral periapical radiograph revealed mild horizontal bone loss and the lamina dura appeared intact [Figure 3]. The panoramic radiograph did not reveal any bony involvement [Figure 4]. Chest radiograph did not reveal any metastatic focus [Figure 5]. Blood picture (complete blood count, bleeding time, and clotting time) was normal. The patient was referred to the regional cancer center for further management where he underwent complete excision of the lesion. The patient had been followed up at regular intervals till 1 year, and there was no evidence of recurrence or distant metastasis.

Discussion

Mucosal melanomas of head and neck origin comprise over 1% of all melanomas and of this 50% arise in the oral cavity.^[1,2] They mostly arise in adults with an average age of 56 though there is an erratic occurrence in children. In most cases, there is a male predominance in a ratio of 2.8:1.^[4] The 1995

Westop Banff workshop endorsed to classify OMM separately from cutaneous lesions and to include terminologies such as melanoma in situ and invasive melanoma.^[5] The criteria for the diagnosis of primary oral melanoma described by Greene *et al.* are confirmation of oral mucosal melanoma, presence of junctional activity, and inability to identify any other primary site.^[6] According to Green's criteria, we diagnosed our case to be a primary oral melanoma.

The etiology of oral melanoma remains obscure. The use of tobacco and chronic irritation from ill-fitting dentures has been considered as possible factors of risk but not supported with adequate scientific evidence.^[1] In this case, the patient gives a history of tobacco chewing and lodging it in the lower labial vestibule, hence tobacco may be a likely etiologic factor.

Clinically, oral melanomas are classified as pigmented nodular, non-pigmented nodular, pigmented macular, pigmented mixed, and non-pigmented mixed, and our case had a pigmented nodular appearance.^[5] Clinical classification of oral melanoma suggested by Westbury is shown below:^[7]

- 1 - Presence of only the primary tumor
- 2a - Metastasis with adjacent skin involvement



Figure 5: Chest radiograph reveals no metastatic foci

2b - Metastasis with involvement of adjacent lymph nodes

2c - Metastasis with involvement of both adjacent skin and lymph nodes.

This patient falls into Stage I because the adjacent skin was not involved.

A biopsy is mandatory for an oral pigmentation with an inconclusive clinical diagnosis for fear of it being malignant melanoma. For small lesions, excisional biopsy with 1-2 mm margin is recommended. However, for large lesions, incisional biopsy should be done through the thickest or the most suspected part of the tumor.^[8] In our case, an incisional biopsy was done to confirm the diagnosis. Malignant cells of oral melanoma exhibit varied morphology such as spindle, plasmacytoid, clear cell, and epithelioid. In this case, the cells were predominantly spindle shaped. Histopathologically, oral melanomas can be classified as *in situ* melanoma, melanoma with invasive pattern, or melanomas with a combined pattern.^[7] In our case, the histopathology revealed a combined pattern of invasive melanoma with *in situ* component.

The tumor node metastasis staging in association with histopathological microstaging is a beneficial factor in the prognosis of OMM. A recent histopathological microstaging for Stage I with three sublevels as follows:^[1,9,10]

Stage I: Tumor present only in the primary site.

Level 1 - Pure *in situ* melanoma without invasion or with microinvasion

Level 2 - Denotes invasion up to the lamina propria

Level 3 - Spread into skeletal muscle, cartilage, or bone.

Stage II: Regional lymph node metastasis.

Stage III: Distant metastasis.

The tumor frequently metastasizes to the lung, liver, bone, and brain with extensive involvement occurring in the advanced stage of the disease. In this case, it is Stage I, Level 2, as the histopathological diagnosis showed the presence of abnormal melanocytes invading the connective tissue. The OMMs are usually diagnosed at an advanced stage due to the less noticed

anatomic location both by the clinician and the patient, leading to poor survival rate when compared with their cutaneous counterparts. They remain asymptomatic for a long time. Mucosal melanomas are rarer than cutaneous melanomas, and they represent only about 1.4% of all melanomas. The incidence of mucosal melanoma is believed to remain stable, unlike cutaneous melanoma.^[4] The most important task after diagnosis is identifying if the lesion is a primary tumor or metastatic. The most common sites of occurrence of metastatic melanoma are the mandible, buccal mucosa, and tongue. Surgical resection is the preferred mode of treatment while certain patients may require adjuvant radiotherapy and chemotherapy. The melanomas affecting the gingiva as in our case are found to have a better prognosis than those affecting the palate. Cases with vascular invasion, presence of necrosis, and polymorphous tumor cell population warrant poor prognosis.^[1]

Conclusion

The fear of malignant melanoma being masked in a focal pigmented lesion is the reason for concern associated with a pigmented lesion. Hence, it is mandatory for all pigmented oral lesions which are not clinically diagnostic to be biopsied. Appropriate knowledge coupled with a high index of clinical suspicion about melanotic lesions may help in early diagnosis of this rare and deadly disease.

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