Palatal Malignant Melanoma: Presenting as a Diagnostic Dilema
Nisheeth Sawarn, Sana Noor Siddiqui, Preeti P Nair, Christopher Vinay Shinde

Abstract
Malignant melanoma is a highly aggressive lesion with the tendency to metastasize and invade the surrounding tissues more readily than other oral malignancies. Oral melanoma is initially asymptomatic, developing as a slowly growing mass and may be present for months or years before being noticed. The color varies from bluish black to tan-brown. In this case report we present a case of a 45-year-old male patient who presented with a large asymptomatic grayish patch of 20 days' duration on the anterior palate. He had discontinued smoking beedi one year back. Though it did not seem to be rapidly increasing in size, the lesion was histopathologically examined and the report was suggestive of malignant melanoma. This paper is being presented to reemphasize the fact that any pigmented lesion in the oral cavity should be viewed with suspicion and properly investigated.

Key Words: Malignant melanoma; Gingiva; Palate; Melanocytes; Pigmentation.

Introduction
Malignant melanoma is a neoplasm of epidermal melanocytes, the dendritic cells located in basal layers of the skin and oral mucosa. Of all the human neoplasms it has the highest mortality rate.1 The incidence has been reported to be between 0.2 and 8% of all melanomas and 0.5% of all oral malignancies.2 In India around 20.41% to 34.4% melanomas are of mucosal origin and upto 16% of these are intraoral.3 It is a lesion of adulthood, and is rarely seen below 20 years of age.2

The mean age of occurrence is 56 years, and male to female ratio is 2:1.4 Clinically it may present as pigmented macule, nodule, large exophytic lesion, ulceration, swelling, bleeding nodular mass, and rarely with loosening of the teeth.5 The etiology of the mucosal malignant melanoma is unknown; risk factors include a fair complexion and light hair. Sunburn, outdoor recreational habits, dysplastic or congenital nevus.5 It shows a highly aggressive behavior which may be because of the invasion into the bone due to its vertical mode of growth and the rich vascular supply in the oral cavity leading to quick and easy dissemination.7 They may be confused with various pigmented lesions such as physiologic pigmentation, smoker’s melanosis, melanotic macule, and amalgam tattoo which show close resemblance with the lesion and pose great challenge for its diagnosis.8 Hence a methodical approach is necessary to establish a proper differential diagnosis and differentiate the aggressive lesions from the more innocuous ones. This paper reemphasizes the fact that any pigmented lesion in the oral cavity should be viewed with suspicion and properly investigated.

Case Report
A 45 year old moderately built and nourished male patient reported with a complaint of brownish-black pigmented area over maxillary labial gingiva and palate with a small swelling over palate since 20 days. Patient had consulted a physician 15 days back for the same complaint who prescribed chlorhexidine mouthwash and antibiotics; however the swelling had increased in size. His medical, past dental and family history was not contributory. He was a ‘beedi’ smoker, smoking about 12-13 beedi/day for five years; however, he had discontinued smoking a year back.

On clinical examination a diffuse greyish-pigmented area with interspersed white areas was present on the maxillary labial gingiva and involving entire width of gingiva, extending from distal aspect of 12 to mesial aspect of 23 with an irregular and grainy surface on the right half. A nodule of about 0.3 cm with smooth pink surface was present over the attached gingiva between 11 and 12 (Figure 1a). On palate a grayish-brown-pigmented area was present extending from 13 to 18; at some areas it...
was confined to the marginal gingiva whereas at few places it was extending till the midline. The central portion of the palate showed a roughly oval shaped pigmented flat area darker in color measuring approximately 1x1.5 cm with well-defined irregular margins and no surface changes. A well-defined swelling was present over palatal gingiva in relation to 11 & 12 measuring approximately 0.5 x 0.5 cm, red-bluish in color it was soft and edematous and non-tender on palpation (Figure 1b). Periodontal pockets were present in relation to 11 & 12 with gingival recession in relation to 23, 31 and 41. Hard tissue examination showed generalized stains and attrition. For the pigmented lesion a provisional diagnosis of malignant melanoma was made, as the lesion appeared to be fulfilling the criteria of so-called ABCD checklist (asymmetry, border irregularities, color variation and diameter >6 mm). The differential diagnoses listed were intra oral nevus, oral melanotic macule, racial pigmentation and smoker's melanosis. Periodontal abscess and pyogenic granuloma were considered as differential diagnosis for the swelling on palate.

Intraoral periapical radiograph did not reveal any significant bony alteration (Figure 1c). Incisional biopsy of the darker macule was done under local anesthesia. The histopathological examination revealed presence of parakeratinized stratified squamous epithelium with rete-ridges showing marked presence of ovoid and spindle shaped melanocytes (nevoid cells) in basal and spinous cell layers. Underlying connective tissue was fibro-cellular showing presence of small clusters of melanocytes (Figure 1d) suggestive of a compound nevus.

Patient was recalled after 14 days for follow up. The clinical picture, patient presented with (Figure 1e), was alarming which compelled us to repeat the biopsy. This time the histopathological picture was different, revealing ulcerated mucosa showing solid nests and trabeculae of large round pleomorphic cells with high nuclear cytoplasmic ratio. Prominent nucleoli with one to two mitotic figures were seen; adjacent mucosa showed pseudo-epitheliomatous hyperplasia with pagetoid infiltration in epithelium and melanin incontinence was seen at places (Figure 6). This picture was suggestive of superficially spreading malignant melanoma. Patient was referred to an oncology center, however due to financial constraints he was unable to commence treatment and we lost the patient after two months, as his life could not be saved due to lack of medical intervention.

Discussion
Malignant melanoma of oral cavity was first described by Weber in 1859.8 Melanoma is a malignant neoplasm of melanocytic origin that arises from a benign melanocytic lesion or de novo from melanocytes within otherwise normal skin or mucosa.9 Although some role of inhaled and ingested carcinogens such as from tobacco use and chronic irritation from ill-fitting dentures in pathogenesis have also been suggested.8 Ingested and inhaled environmental carcinogens at high body temperature are reported to play some role.9 In present case, patient had a history of habit of beedi smoking for about five years.

Melanoma may present itself in two patterns; in the first pattern there is rapid appearance and enlargement of pigmented lesion, as seen in our case and in second, the tumor is preceded by pigmented area for a variable period. Most lesions appear as asymmetric pigmented maculae of irregular shape, which may grow in horizontal direction for some years prior to a phase of vertical growth and sub mucosal invasion.9 The progress of melanoma may go through three phases; a nodular phase usually affecting the center, a flat or slightly elevated deep brownish black pigmented plaque phase and a non-elevated light-brown macular phase.9 In the present case the lesion was a mixture of slightly elevated mucosa along with deep brownish black pigmented plaque phase.

At presentation, approximately 13% to 19% of patients have lymph node metastasis and another 16% to 20% are likely to develop metastasis subsequently.9 Hence, regional lymph node involvement represents controversial issue.10 According to Umeda and Shimada, chance of cervical node involvement increases when the thickness of an oral melanoma reaches 5 mm or more. Conley and Pack in 1974 found lymph node metastases from mucous membrane melanomas to be less frequent than cutaneous lesions.9 This patient did not reveal any lymph node involvement. The so-called ABCD checklist (asymmetry, border irregularities, color variation and diameter >6 mm) that is commonly used in identification process of cutaneous melanoma could also

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be of some help in diagnosis of oral melanoma.\textsuperscript{9} Tanaka et al classified oral melanomas into five types based on their clinical appearance as pigmented nodular, pigmented macular, non-pigmented nodular, pigmented mixed and non-pigmented mixed type. Among these, the present case was of pigmented mixed type and also fulfilled ABCD checklist. Involvement of jawbones by primary and secondary melanoma is rarely revealed radiographically. However, when they do involve the bone they are usually indistinguishable from osteomyelitis, and sometimes have appearance like any other lytic malignant tumor.\textsuperscript{5} They show ill-defined radiolucency with invasive borders and floating teeth appearance.\textsuperscript{11,12} The present case did not show any bony involvement on radiographs. However, CT scans depict malignant melanoma as an expansible, homogeneously enhancing mass.

Figure 1: The clinical intraoral photograph showing pigmented lesion over Maxillary Labial Gingiva (a) and over palatal mucosa (b). The intraoral periapical radiograph of maxillary anterior region showing no significant bony alteration (c). The photomicrograph of initial biopsy showing prominent melanocytes at the basal layer of parakeratinized stratified squamous epithelium representing compound nevus (d). The clinical appearance 15 days after first presentation (e). The photomicrograph of second biopsy revealing ulcerated mucosa showing solid nests and trabeculae of large round pleomorphic cells suggestive of superficially spreading malignant melanoma (f).

A nomenclature was proposed at the 1995 WESTOP Banff workshop to classify oral melanomas by histological pattern as in situ, invasive and combined in situ and invasive type.\textsuperscript{9} Upon incisonal biopsy both in-situ and invasive type of histological pattern was seen in the present case. Microscopically, in-situ type melanomas show an increase in atypical melanocytes with angular and hyperchromatic nuclei, they may be irregularly distributed or form aggregates at the junctional location. Whereas in invasive type melanocytes show a variety of cell types, including spindle, epithelioid and plasmacytoid, and they have typically large vesicular nuclei with prominent nucleoli. Mitoses may be present which are usually aggregated into sheets or alveolar groups, but not in large numbers usually.\textsuperscript{13} Radical surgery is the treatment of choice for oral melanoma, elective neck dissection has also been advocated.\textsuperscript{14} Adjuvant chemotherapy with Decarbazine, Platinum analogs, Nitrosureas and Microtubular toxins have been used for palliative purposes or for therapy of metastatic melanoma, but does not seem to influence survival. Systemic immunotherapy has been used as adjuvant or for palliation in the treatment of disseminated disease.\textsuperscript{9} Radical surgery in combination with radiotherapy and chemotherapy or radiotherapy alone is preferred in inoperable tumors or in elderly.\textsuperscript{14}
Prognosis although poor, is highly variable with oral melanomas; 5-year survival is 15% with a median survival of 25 months. Gingival melanoma (18%) has slightly greater 5-year survival than for palatal melanoma (11%) with a considerably longer median survival period (46 months to 22 months). Prevention and screening for mucosal melanomas of head and neck involve annual evaluation for pigmented lesions in the oro-nasal and upper respiratory tract. Oral malignant melanoma may demonstrate significant heterogeneity in morphological features, developmental process and biological behavior. Hence early diagnosis is essential for successful treatment.

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Author Affiliations

1. Dr. Nisheeth Saawarn, Reader, 2. Dr. Sana Noor Siddiqui, Lecturer, 3. Dr. Preeti P Nair, Professor and Head, 4. Dr. Christopher Vinay Shinde, Lecturer, Department of Oral Medicine & Radiology, People’s College of Dental Sciences & Research Centre, Bhopal.

References


Corresponding Author
Dr. Nisheeth Saawarn, Department of Oral Medicine & Radiology, People’s College of Dental Sciences & Research Centre, Bhanpur Bypass Road, Bhopal; Madhya Pradesh; India-462037. Ph: +91-9039380088; +91-7697130106 E-mail: drnisheethsaawarn@gmail.com

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