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Primary malignant melanoma of the maxillary gingiva: a case report

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SUMMARY

Malignant melanoma of the oral cavity is extremely rare, accounting for 0.2% to 8% of all melanomas. Primary gingival malignant melanoma is associated with poor prognosis. We present the clinopathological findings of a case. A 64-year-old woman presented with a hyperplastic-pigmented lesion which was located on the right vestibular maxillary gingiva adjacent to the first molar-canine area. Under local anesthesia an incisional biopsy was taken from the lesion. The pathologic diagnosis of primary malignant melanoma of the gingiva was established after microscopic and immunohistochemical examination, which revealed the neoplastic cells to be positive for HMB-45. A computerized tomography scan on the neck, liver, and lungs revealed no further evidence of disease. A partial right maxillectomy with radical neck dissection was planned. The patient refused the treatment and died after 4 months. In malignant melanoma of the gingiva, survival rates may be increased by early diagnosis and treatment. The dentist must carefully examine periodontal tissues, and pigmented lesions should be biopsied.

Key words: *Diagnosis, gingival disease, mucosal melanoma, oral melanoma, pigmented lesions*

ÖZET

Maksiller diş etinde primer malign melanoma: olgu sunumu

Oral kavitedeki malign melanomlar bütün melanomların %0.2-8'sini oluşturan çok nadir vakalardır. Primer gingival malign melanom kötü prognoza sahiptir. Bu çalışmada bir vakanın klinikopatolojik bulgularının sunulması amaçlanmıştır. Altmış dört yaşındaki kadın hastanın sağ maksiller vestibul diş etinde, birinci molar ve kanin dişe komşu hiperplastik pigmente lezyon mevcuttu. Lokal anestezi altında lezyondan insizyonel biyopsi alındı. Diş etinin primer malign melanomunun tanısı; mikroskobik inceleme ve immünohistokimyasal olarak HMB-45 pozitifliğinin saptanması ile konuldu. Boyun, akciğer ve karaciğerin tomografik incelemesinde hastalıkla ilgili bir bulguya rastlanmadı. Radikal boyun diseksiyonu ile birlikte sağ parsiyel maksillektomi planlandı, ancak hasta tedaviyi reddetti ve dört ay sonra öldü. Diş etinin malign melanomlarında sağ kalım süresi erken tanı ve tedaviyle artabilir. Diş hekimleri periodontal dokuları dikkatli muayene etmeli ve pigmente lezyonlardan biopsi almalıdırlar.

Anahtar kelimeler: *Tanı, diş eti hastalıkları, mukozal melanom, oral melanom, pigmente lezyonlar*

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Introduction

Malign melanoma is a rare, life threatening disease. It constitutes only 3% to 5% of all cutaneous malignancies and oral malign melanoma accounts for about 0.2-8% of all melanomas (1-5).

Oral melanoma is seen as 11-14% of all cases of melanomas among Japanese which is more than any other population (6). Barker et al. have declared from the Western Society of Teachers of Oral Pathology (WESTOP) Banff workshop on primary oral mucosal melanomas that the average age for oral mucosal melanoma is 56 years and the range is 22-83 years in a large sample study (7). A predilection for male has been reported in many studies (4,5,8). Up to 80% of all cases, oral malignant melanomas occur on the hard palate and maxillary gingival (7,9). Buccal mucosa, mandibular gingiva, lips, tongue and the base of the oral cavity follow them in decreasing frequency (7). Mucosal melanoma has a relatively poor prognosis in oral cavity, with 5-year survival rates of 12% (10). It has a distinct tendency for both regional and distant metastasis to sites such as the lungs, liver, brain and bones (4).

The clinical presentation of oral melanoma has a wide range. It can be seen as pigmented maculae, pigmented nodule, a large pigmented exophytic lesion or amelonotic with the varying colors of black, gray, purple, or reddish. The melanomas mostly grow rapidly with or without ulceration or an erythematous border. It may also appear as a swelling on a pigmented area several years later. Pain is an uncommon symptom of malignant melanoma, generally found in the advanced stages (1-5,7). Destruction of the underlying bone is present in 78% of cases (11).

The difficulty of applying cutaneous melanoma classification (nodular, superficial spreading, lentigo maligna, acral lentiginous) to oral melanomas has been noted by several investigators (8,12,13).

Whether oral melanomas are biologically different from cutaneous melanomas is yet to be determined.

The differential diagnosis of oral mucosal melanomas can include melanotic macule, smoking-associated melanosis, pigmented and blue nevus, melanoacanthoma, hemangioma, amalgam tatoo, other heavy metal deposits, thrombus or hematoma associated with trauma, Addison's disease, Peutz-Jeghers syndrome, and Kaposi's sarcoma (4,7,14-16). The surface architecture of mucosal melonomas ranged from macular (in situ melanomas) to ulcerated and nodular (invasive melanomas and invasive with in situ component).

The aim of this paper is to present a life threatening case of primary malignant melanoma affecting the maxillary gingiva.

Case Report

A 64-year-old female patient was admitted to the Department of Periodontology of Gulhane Military Medicine Academy with a complaint of rapidly growing pigmented mass in the maxillary premolar region. The patient was aware of the lesions over the past 3 to 4 months. There was no history of pain associated with it. There was no significant finding in the patient's past medical history. A tender submandibular lymph node was palpated on the related side.

Intraoral findings revealed an elastic, grey red exophytic tumor (25×20 mm) with well-defined margins which was buccal to the first molar, premolars and canine and bluish-black pigmentation surrounding the swelling on the labial attached gingiva was extending to the central incisor and midline (Figure 1). The lesion showed no extension to palatal mucosa. On palpation, there was no tenderness or bleeding. Plaque control was not bad. The premolars had Miller grade II mobility.

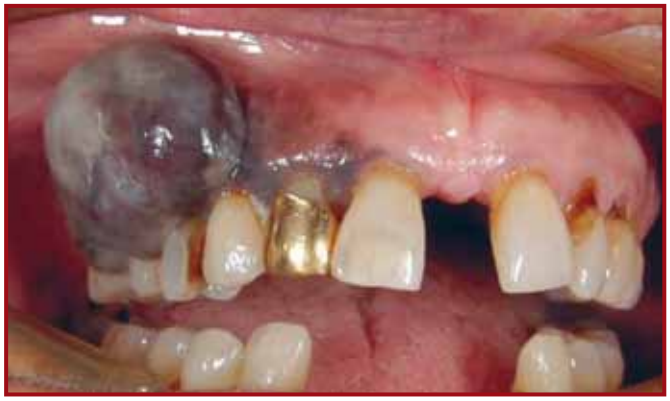

Figure 1. Intraoral photograph showing an elastic, grey red exophytic tumor bluish-black pigmentation surrounding the swelling on the labial attached gingiva was extending to the central incisor and midline

A panoramic radiograph showed smooth alveolar bone adjacent to the gingival tumor and no obviously abnormal bone resorption. A computerized tomography scan on the neck, liver, and lungs revealed no further evidence of disease and distant metastasis was found. An incisional biopsy was performed under local anesthesia.

The diagnosis of primary malignant melanoma of the gingiva was established with microscopic and immunohistochemical studies, which revealed the neoplastic cells to be positive for HMB-45. Histopathological examination revealed mucosal ulceration and subepithelial malignant tumor infiltrations (Figures 2, 3). Tumor was composed of islands of atypical polygonal cells having large nucleol and frequent mitosis. There was melanin pigmentation on tumor cells positively stained with Fontana. Tumor cells show positive reaction with HMB-45 immunostaining (Figure 4).

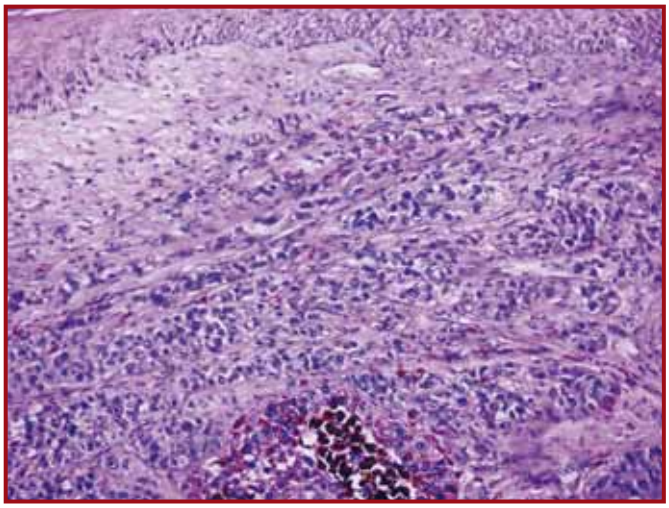

Figure 2. Photomicrographs showing infiltration of malignant melanocytes into the connective tissue (Hematoxylin and eosin stain, x 200)

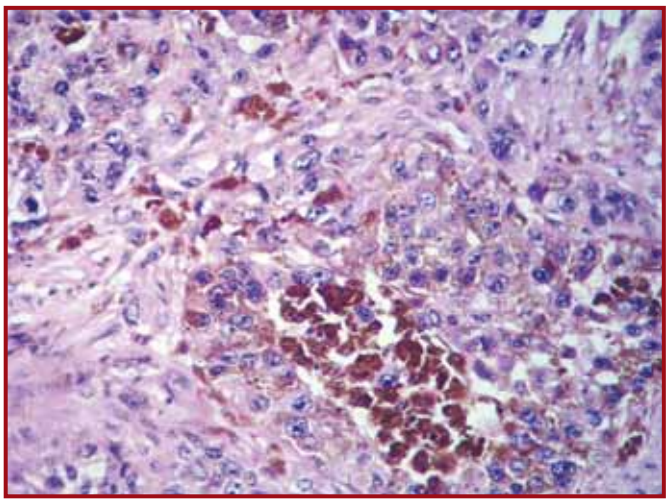

Figure 3. Atypical melanocyte groups with big vesicular nucleus and prominent nucleolus are seen with high magnification. Dark brown colored melanin pigment exists in the melanocyte cytoplasms (Hematoxylin and eosin stain, X 400)

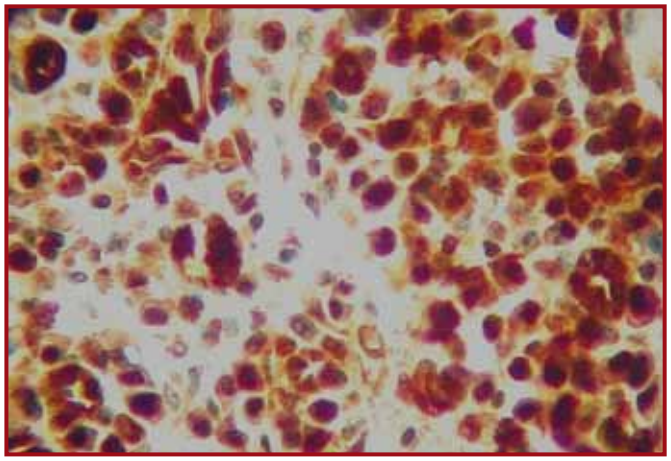

Figure 4. With immunohistochemical examination, strong HMB-45 positivity in tumor cells is seen (Avidin-biotin peroxidase, X 400)

A partial right maxillectomy with radical neck dissection was planned. In spite of our all informative persuasion efforts, the patient refused further treatment. The patient died after four months of her refusal.

Discussion

Mucosal melanoma may be primary or metastatic from other locations of the body (3). According to Greene et al. the criteria for the diagnosis of a primary oral melanoma are the following: 1) demonstration of clinical and microscopic tumor in the oral mucosa, 2) presence of junctional activity in the lesion, and 3) inability to show any other primary site. Our patient fulfilled all these criteria (14).

The etiology of oral melanoma is unknown. Several risk factors have been proposed including human papillomavirus, denture irritation as a chronic irritant, carcinogenic compounds, tobacco smoking, and chewing (8,17,18). In addition, it was speculated in the WESTOP Banff workshop that oral melanomas could be due to genetic abnormalities occurring in a clone of melanocytes, or to the effects of an abnormal regional production of cytokines and growth factors on melanocytes (7). However, there has been no evidence to support these risk factors (10,19).

Oral melanomas are usually diagnosed later in the course of the disease than the ones presenting on the skin, mainly due to anatomic reasons (19). At the time of diagnosis, most oral melanomas have already progressed to the vertical growth phase (vertical invasion of the tumor cells into the underlying tissues) and have invaded the underlying submucosal tissues (20).

Differential diagnosis includes oral melanotic macule, smoking-associated melanosis, medication-induced melanosis (antimalarial drugs and Minocycline), melanoplakia, pituitary-based Cushing's syndrome, postinflammatory pigmentation, melanoacanthoma, melanocyctic nevi of the oral mucosa, blue nevi, nevi of Spitz, Addison's disease, Peutz-Jeghers syndrome, amalgam tattoo, Kaposi's sarcoma, physiologic pigmentation, pigmentation related with the use of heavy metals, and many other conditions sharing some macroscopic characteristics (21,22,23).

Morover, it is necessary that oral malignant melanoma should be under differential diagnosis than other malignant entities, such as poorly differentiated carcinoma and large cell anaplastic lymphoma (21).

Immunohistochemical studies may help distinguish mucosal melanomas from other malignancies. They are likely to stain positively for S-100, vimentin, and HMB-45 (20). Diagnostic evaluation should include computerized tomography to evaluate the primary tumor and cervical lymph nodes, as well as a chest radiogram to screen for lung metastasis and additional studies to detect distant metastasis include bone scan, and positron emission tomography (18).

Treatment modalities for oral melanoma include surgical resection with or without neck dissection, immunochemotherapy, and radiation therapy (7,19,24). It has been reported that vascular invasion, clinical stage, gender, postoperative radiotherapy and response to treatment are significant prognostic factors (25-27).

The reported prognosis of oral melanoma is quite poor. While Rapidis et al. found the survival range of five primer oral melonama patients under treatment with vertical invasion as 14 months to 38 months (mean 25.6 months), Ardekian et al. declared the survival of two treated patients with primer gingival malign melanoma as 2 and 3 years. Meleti et al. reported the survival rate as 30% in a 5-year follow up, however, all the patients died at the end of 10 years (4,19,28).

According to Batsakis, "there is no evidence that a preliminary biopsy of the primary lesion increases the risk of metastatic dissemination or unfavorably affects the prognosis" (29). However, Liversedge reported that patients with oral melanoma frequently had pigmented areas for a long time before melanoma developed (30). The natural history of some oral mucosal in situ melanomas may include interface or intraepithelial spread that is particularly prolonged (as long as 10 years) (7). In situ oral mucosal melanomas may be microscopically subtle and deceptive. These lesions may be misinterpreted as benign proliferations. It is generally agreed that the clinician should be suspicious of irregular or heterogeneous macules (even those less than 1 cm in greatest dimension) occurring in high risk sites (palate and gingiva)

as potentially representing in situ melanomas (7). In malignant melanoma of the gingiva, survival rates may be increased by early diagnosis and treatment. Dentists must carefully examine oral cavity, and pigmented lesions should be biopsied.

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