Case Report

Oral Amelanotic Melanoma of the Maxilla

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Received: 13 March 2014
Accepted: 31 July 2014

Abstract

Amelanotic melanoma is a variant of malignant melanoma comprising 2% to 8% of all malignant melanomas. The amelanotic presentation of melanoma in the oral cavity is extremely rare and has been reported only occasionally in the literature. Moreover, the lack of melanin makes these tumors difficult to diagnose than that of pigmented lesions and the prognosis tends to be poorer. Herein, we report an amelanotic melanoma involving the oral mucosa of the maxilla in a 27 year-old male.

Key words: Amelanotic; Melanoma; Maxilla; Oral

Journal of Dentistry, Tehran University of Medical Sciences, Tehran, Iran (2014; Vol. 11, No. 6)

INTRODUCTION

Primary melanomas of the oral mucosa are extremely rare [1, 2]. The oral amelanotic melanoma accounts for only 1% of all reported primary melanomas of the oral cavity [3]. It has an appearance that presents a great diagnostic challenge to clinicians [1, 3]. In contrast to skin melanomas, the etiologic factors of oral melanomas are not well known. However, tobacco use and chronic irritation may play a role. The hard palate, soft palate, and the gingiva, are the most common sites of oral mucosal melanomas [4]; in the amelanotic type pigmentation is absent [5]. The amelanotic melanoma can be primary, recurrent, or metastatic.

The primary tumor normally presents as a vascular or ulcerated nodule. However, most are metastatic lesions from a primary site [3, 6]. Oral amelanotic melanomas are highly malignant tumors with a low 5-year survival rate [7]. Unfortunately, the lack of melanin makes these tumors difficult to diagnose, especially in the oral region due to the rarity of this tumor [6].

However, the prognosis may improve with early detection and wide local excision [5]. Herein, we report an amelanotic melanoma of the oral mucosa in a 27 year-old male.

CASE REPORT

On September 2012, a 27 year-old, apparently healthy male was admitted to the Department of Oral and Maxillofacial Pathology, with a 2-month history of a progressively enlarging mass and gingival bleeding of the right maxilla; it was stated that it had recently increased rapidly in size and was accompanied by severe constant pain. His past medical history was noncontributory.

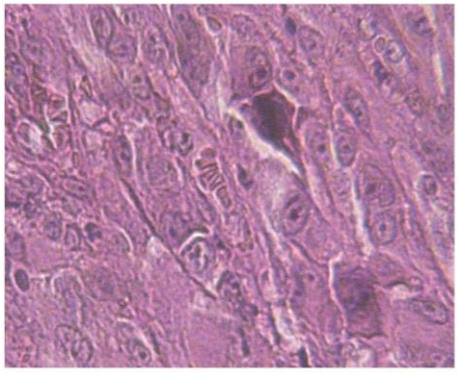
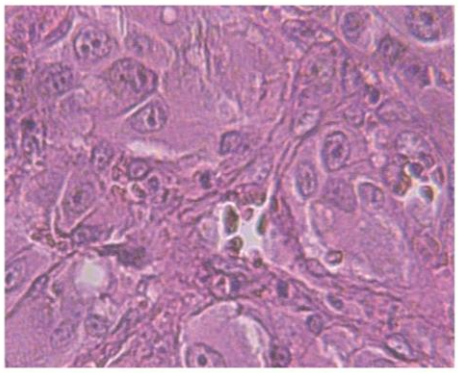

Fig 1. Malignant neoplastic proliferation of polygonal and atypical cells with eosinophilic cytoplasm arranged in sheets with deep invasion. Cytoplasmic melanin pigmentation is absent (H&E stain, ×200)

Intra-oral examination revealed a pink pedunculated non- pigmented nodular mass extending from the right maxillary central incisor to the right maxillary canine, with swollen mucosa which was ulcerated in some areas. The gingiva bled when probed, and the teeth tested vital. There was no anesthesia or paresthesia and no pigmentation of the oral mucosa or the face. No enlarged cervical lymph node was palpable. Laboratory tests suggested no significant abnormality. Radiographic investigation did not show any resorption or radiolucency of the underlying alveolar bone, suggesting that the bone was not involved.

According to his past history and the appearance of the lesion, a diagnosis of pyogenic granuloma was suspected and the lesion was excised. Multiple excised tissues were sent for histopathological examination. Gross examination of the specimen showed multiple gray-white, soft and firm fragments, measuring 22 x 18 x8 mm.

Histological examination of the specimen showed that the specimen was covered by parakeratinized stratified squamous epithelium. Nests and sheets composed of neoplastic epithelioid and spindle-shaped cells having prominent eosinophilic, hyperchromatic nuclei and frequent atypical mitotic figures scattered throughout the submucosal connective tissue. No melanin pigment was identified in the cells (Figures 1 and 2).

Histological differential diagnoses included malignant lymphoma, amelanotic melanoma, spindle cell malignancies of mesenchymal tissues, and undifferentiated carcinoma. Immunohistochemistry was used to establish the final diagnosis. The tumor cells were strongly positive for S100 and HMB-45, but were negative for LCA, CD 68, and desmin. On the basis of the histopathological and immunohistochemical findings, the lesion was diagnosed as amelanotic melanoma (Figure 3).

There were no signs of the disease elsewhere in the body.

Chest X-ray, ultrasound of abdomen, bone scan and magnetic resonance imaging of his brain did not reveal any abnormality and confirmed the lesion to be localized. The patient was referred to an oral and maxillofacial surgeon and partial maxillectomy with wide margins was performed. The patient was referred to an oncologist for chemotherapy. As the patient did not keep his appointment with the dental school, no additional follow-up information is available.

DISCUSSION

Although malignant melanomas mainly occur in the skin, they may develop at any site where melanocytes are present.

Primary mucosal melanomas of the head and neck are fortunately rare, accounting for less than 1% of all melanomas [1].

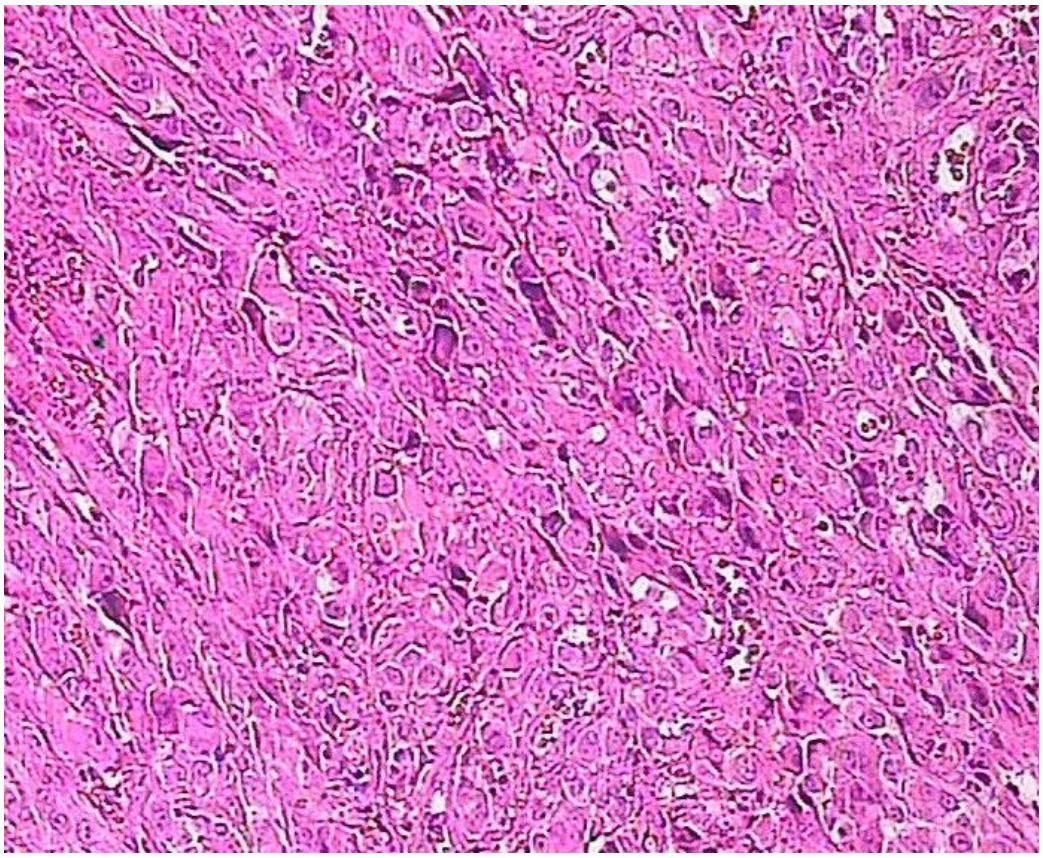

Fig 2. The tumor cells showing positive immunohistochemical staining for S-100 and HMB45 but negative for LCA, CD68, and Desmin.

Half of such melanomas occur in the oral cavity, and the most frequently affected sites are the palate and the maxillary gingiva [8].

The etiology of oral mucosal melanoma is essentially unknown.

Unlike cutaneous melanoma, mucosal melanoma is not directly related to ultra- violet radiation, which is known as a major cause of cutaneous melanoma [9].

However, some important promoter factors are tobacco, ill fitting dentures, betel nuts, amalgam tattoo and the presence of pre-existing precursor melanocytic lesions in the region of the tumor in about one third of the patients [4, 10, 11].

Oral melanomas may be presented with a variety of morphological characteristics.

In most instances, lesions appear as asymmetric pigmented maculae of irregular shape; but rarely, melanoma may present itself without clinically evident pigmentation (amelanotic melanoma) [3]. A lack of pigmentation may cause diagnostic confusion and delay the initiation of treatment [5]. In our patient, the lesion was hyperemic in appearance and had no pigmentation. Pain, superficial ulceration, and bleeding were additional signs and symptoms seen in our patient. Melanomas especially when amelanotic, can histologically mimic a variety of undifferentiated or poorly differentiated neoplasms [6]. In such cases, immunohistochemistry provides a valuable tool for distinguishing such melanomas from other malignancies.

Three reliable markers that react with proteins expressed by melanomas are HMB45, MART-1, and S-100 protein [5-7]. However, MART-1 has been shown to be expressed only in pigmented tumors but not in amelanotic tumors [3]. In the present case, we were able to make a correct diagnosis of amelanotic melanoma only after the results of immunohistochemical analysis were obtained.

Mucosal amelanotic melanomas are usually treated according to the guidelines for pigmented melanomas [3]. A combination of radical surgery with tumor-free margins and adjuvant chemotherapy is an appropriate approach for the management of malignant melanoma [5, 8]. Systemic immunotherapy with IL-2 and other cytokines has been also used as an adjunct or for palliation in the treatment of disseminated disease [12].

Radiotherapy has not been fully explored as a primary treatment method, but it can be used palliatively for metastatic disease [2, 9].

The prognosis for oral melanoma is extremely poor, with a 5-year-survival rate after resection of 13 to 22%. The prognosis of amelanotic melanoma is much worse than that of pigmented lesions because of delayed recognition and subsequent treatment. The poor prognosis for oral melanoma appears to be related to the inability to adequately resect the lesion with negative margins due to the anatomy of the region and a tendency to hematogenous metastasis [5-7, 9, 13]. Additionally, in contrast to cutaneous counterparts, most oral melanomas have been found to be of considerably greater thickness (larger than 4 mm) at the time of diagnosis [6, 14]. This factor, together with the late recognition of oral lesions, may contribute to the discrepancy in the 5-year survival rates between cutaneous melanomas (65%) and oral melanomas [13].

CONCLUSION

Although the occurrence of amelanotic melanoma is very rare, due to the poor prognosis of this entity, obtaining an early biopsy specimen and special staining and immunological studies of different surface markers in a suspected lesion are necessary to establish an accurate diagnosis of amelanotic melanoma. The prognosis may improve with early diagnosis by immunohistochemical examination with S100 and HMB-45 and wide local excision.

REFERENCES

1- Gondivkar SM, Indurkar A, Degwekar S, Bhowate R. Primary oral malignant melanoma-a case report and review of the literature. Quintessence Int. 2009 Jan;40(1):41-6.

2- Aguas SC, Quarracino MC, Lence AN, Lanfranchi-Tizeira HE. Primary melanoma of the oral cavity: ten cases and review of 177 cases from literature. Med Oral Patol Oral Cir Bucal. 2009 Jun 1;14(6):E265-71.

3- Tanaka N, Mimura M, Kimijima Y, Amagasa T. Clinical investigation of amelanotic malignant melanoma in the oral region. J Oral Maxillofac Surg. 2004 Aug;62(8):933-7.

4- Meleti M, Leemans CR, Mooi WJ, Vescovi P, van der Waal I. Oral malignant melanoma: a review of the literature. Oral Oncol. 2007 Feb;43(2):116-21. Epub 2006 Aug 23.

5- Notani K, Shindoh M, Yamazaki Y, Nakamura H, Watanabe M, Kogoh T, et al. Amelanotic malignant melanomas of the oral mucosa. Br J Oral Maxillofac Surg. 2002 Jun;40(3):195-200.

6- Kao SY, Yang JC, Li WY, Chang RC. Maxillary amelanotic melanoma: a case report. J Oral Maxillofac Surg. 2001 Jun;59(6):700-3.

7- Ducic Y, Pulsipher DA. Amelanotic melanoma of the palate: report of case. J Oral Maxillofac Surg. 2001 May;59(5):580-3.

8- Femiano F, Lanza A, Buonaiuto C, Gombos F, Di Spirito F, Cirillo N. J Oral Pathol Med. 2008 Aug;37(7):383-8. doi: 10.1111/j.1600-0714.2008.00660.x. Epub 2008 Feb 17.

9- Boulaadas M, Benazzou S, Mourtada F, Sefiani S, Nazih N, Essakalli L, et al. Primary oral malignant melanoma. J Craniofac Surg. 2007 Sep;18(5):1059-61.

10- Hashemi Pour MS. Malignant melanoma of the oral cavity: a review of literature. Indian J Dent Res. 2008 Jan-Mar;19(1):47-51
11- Mendenhall WM, Amdur RJ, Hinerman RW, Werning JW, Villaret DB, Mendenhall NP. Head and neck mucosal melanoma. Am J Clin Oncol. 2005 Dec;28(6):626-30.
12- Meleti M, Leemans CR, de Bree R, Vescovi P, Sesenna E, van der Waal I.Head and neck mucosal melanoma: experience with 42 patients, with emphasis on the role of postoperative radiotherapy. Head Neck. 2008 Dec;30(12):1543-51. doi: 10.1002/hed.20901.
13- Symvoulakis EK, Kyrmizakis DE, Drivas EI, Koutsopoulos AV, Malandrakis SG, Skoulakis CE, et al. Oral mucosal melanoma: a malignant trap. Head Face Med. 2006 Mar 28;2:7.
14- Gonzalez-Garcia R, Naval-Gias L, Martos PL, Nam-Cha SH, Rodriguez-Campo FJ, Munoz-Guerra MF, et al. Melanoma of the oral mucosa. Clinical cases and review of the literature. Med Oral Patol Oral Cir Bucal. 2005 May-Jul;10(3):264-71.