

# Oral melanoma

## Relevance to the dental team members

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The incidence of cutaneous melanoma has been rising. The annual incidence per 100,000 people went from 7.9 in 1975 to 24.0 in 2013. During this time, the age-, race-, and sex-adjusted death rate only slightly increased (2.1 to 2.7 cases per 100,000 per year). The estimated number of new cases in 2016 was 76,380.<sup>1</sup> The 2006 to 2012, 5-year survival rate was 91.5%.<sup>1</sup>

A primary oral melanoma is rare, accounting for approximately 0.2% to 8.0% of all melanomas.<sup>2</sup> The 5-year survival rate is approximately 15%; mean survival with nodal involvement is estimated to be 18 months. At the time of diagnosis, 70% of stage I, localized oral melanomas are larger than or equal to 4 millimeters in thickness compared with 10% of stage I localized cutaneous melanomas.<sup>3</sup> One plausible reason for this disparity in survival between primary cutaneous and oral mucosal melanomas is delayed diagnosis of oral mucosal melanomas.

Dental team members are in a privileged position to identify early oral melanomas. Early diagnosis is associated with improved survival. In this article, we present a case of a primary oral melanoma with nodal metastasis. We discuss differential diagnosis as well as factors for a poor outcome.

### CASE REPORT

A 64-year-old white man was referred by his primary dentist to a periodontist (H.S.B.) for replacement of a missing mandibular left second molar with an implant-based prosthesis in June 2015. The patient was a nonsmoker and practiced good oral care at home. The findings of a comprehensive oral evaluation were within normal limits. The periodontist placed the patient's implant fixture in August 2015, followed by once weekly visits until the end of August and, thereafter, monthly follow-up visits. The postoperative course of healing was

### ABSTRACT

**Background and Overview.** Oral melanomas vary in color and morphology and resemble myriad other reactive, benign, or malignant conditions. The authors describe a case report of a patient with a primary oral melanoma that presented as a nonspecific ulcer, which showed nodal metastasis during resection.

**Case Description.** A 64-year-old man who was examined by his periodontist to assess implant healing had a reddish-purple ulcer of the maxillary mucosa of 3 to 4 weeks duration. The implant was placed 19 weeks earlier in the mandible. The provisional diagnosis was that this ulcer was a traumatic or inflammatory lesion. The clinician biopsied the tissue at the 1-week follow-up appointment, which was identified as melanoma. The patient had a partial maxillectomy and ipsilateral neck dissection. Tissue examination showed nodal metastasis. Two months later, contralateral neck node metastasis was diagnosed and treated.

**Conclusions and Practical Implications.** In contrast to cutaneous melanoma, oral melanoma has a poor prognosis because of delayed diagnosis. Thorough oral examination at each dental visit may improve the outcome of this fatal condition.

**Key Words.** Melanoma; oral; mucosal; metastasis; dental; examination.

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uneventful. At the November follow-up visit, the findings during the patient's oral examination were within normal limits.

At the end of December at a scheduled appointment for an osseointegration check of the implant so that the patient could be referred back to his general dentist for an implant-supported crown, the surgical site appeared healed. The dental implant was osseointegrated. At that time, however, the patient reported a "sore on my gums on the last tooth on upper left side" that had been present for 3 to 4 weeks.

The periodontist noted a reddish purple ulceration with rolled borders along the palatal attached gingiva of the maxillary left second molar and extended proximally onto the maxillary tuberosity mucosa (Figure 1). The provisional diagnosis was a traumatic or inflammatory ulcer. The maxillary left posterior alveolus showed fine bone trabeculae and a radiopacity thought to be a piece of tooth root (Figure 2). The periodontist debrided the area.

At the 1-week follow-up visit, the periodontist noted a persistent lesion with no change in size. The periodontist executed an incisional biopsy and submitted the tissue for histopathologic examination by an oral and maxillofacial pathologist.

**Histologic findings.** Hematoxylin-eosin stained sections of formalin-fixed tissue showed a nodular proliferation of malignant epithelioid cells. Higher magnification showed traces of fine intracytoplasmic brown pigment within some of the cells. Mitotic figures were easily identified (Figure 3). Foci of necrosis were present at the center of tumor cell nodules. Perineural tumor cell invasion were also present. The tumor cells were intensely S100-protein and melan-A positive (Figure 4). Immunohistochemical stains for epithelial, lymphoid, and muscle markers were negative. Presence or absence of junctional activity is an unreliable differentiator of a primary or a metastatic melanoma and, therefore, a diagnosis of a nodular, epithelioid malignant melanoma was given. The patient was referred for appropriate management. The possibility that this could represent a metastatic lesion was suggested, but ruled out during his oncologic evaluation.

The patient underwent a left partial maxillectomy and a left neck dissection in February 2016. Melanoma was identified in one of the level IA nodes and one of the level IIA nodes. The nodes measured 2.0 centimeters and 2.5 cm, respectively. No extracapsular extension was seen (Figure 5). Fifteen level IIB nodes were negative. No lymph node was identified at level III. The resected submandibular salivary gland was unaffected. Given these findings, the clinical staging was stage II.

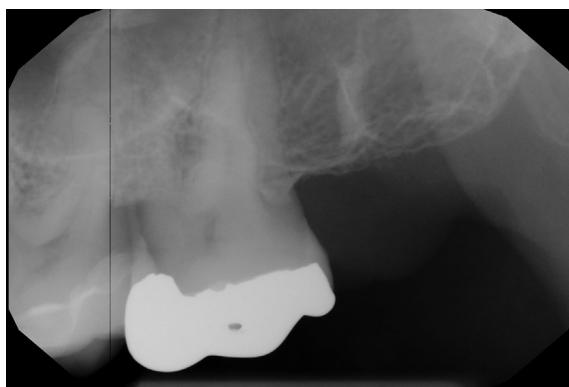
Two months after the initial operation, a right neck mass was noted by the surgeon who performed the jaw and neck resection. A right neck partial dissection showed melanoma involving 3 of 13 level II nodes. The largest node was 3.5 cm. The tumor cells resembled those comprising the primary lesion. A single level III node was negative for tumor. At the 7-month follow-up examination, the patient had no clinical evidence of disease.

## DISCUSSION

Mucosal melanomas of the head and neck constitute 0.7% of malignant melanomas arising in all sites, and involve the sinonasal cavity, oral cavity, pharynx, larynx, and upper esophagus in decreasing order of frequency.<sup>4,5</sup> Oral mucosal melanomas comprise 0.2% to 8% of all melanomas.<sup>2</sup> This range is because some populations have a



**Figure 1.** Area of apparent ulceration and granulation-type tissue surrounding the palatal and distal aspect of the maxillary left second molar.



**Figure 2.** Periapical radiograph showing a normal trabecular pattern. A section of tooth root-like opacity is seen in the alveolus.

higher incidence of oral melanomas and correspondingly also have a much lower incidence of cutaneous melanomas. They include black Africans, Native Americans, Hispanics, and Asians of Japanese and Taiwanese descent.<sup>6,7</sup> The relative inaccessibility of the mucosa to self-examination and the cavitory nature of the anatomic structures involved often delay the diagnosis, resulting in late detection and poor prognosis.<sup>8</sup> Mucosal melanomas tend to appear as higher-stage lesions that are more aggressive and in the vertical (nodular) growth phase.<sup>3</sup> When first seen, approximately 13% to 19% of patients have lymph node metastasis and another 16% to 20% are likely to develop nodal metastasis subsequently. The 5-year survival rate is approximately 15% with mean survival with nodal involvement at approximately 18 months.<sup>3</sup> The role played by sun exposure in the development of cutaneous melanoma has been extensively studied. Familial factors, associations with syndromes,

**ABBREVIATION KEY.** GI: Gastrointestinal. HIV: Human immunodeficiency virus.

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