Acral Lentiginous Melanoma of the Palate: Report of a case

Siew-Tin Ong, Chen-Kiong Shim and Chong Huat Siar
Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, University of Malaya, Kuala Lumpur, Malaysia


The melanoma is a malignant neoplasm of melanocytic origin, and four clinicopathologic types are recognized: lentigo maligna melanoma, superficial spreading melanoma, nodular melanoma and acral lentiginous melanoma (ALM). The latter differs from ordinary malignant melanoma in exhibiting a predominant radial growth phase. ALM of the oral mucosa is rare. Although the prognosis of such lesions is reportedly poor, some studies show encouraging results with early diagnosis and adequate treatment. The present case highlights the potential role of a dental surgeon in early detection and recognition of signs of malignancy in melanotic lesions. A loose denture may be the only complaint of such a lesion. The need for biopsy at multiple sites to ensure accurate diagnosis is also highlighted. The management of oral ALM is discussed.

Key words: acral lentiginous melanoma, palate, histology

Correspondence: Ong Siw-Tin, Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, University of Malaya, 50603, Kuala Lumpur, Malaysia
Phone: +603-79674807, Fax: +603-79674534, E-mail: ongst@um.edu.my

Introduction

Malignant melanoma (MM) is a lesion arising from neoplastic transformation of either melanocytes or nevus cells. Although malignant melanoma accounts for about 3% of skin cancers, it results in the majority of deaths from such cancers (1). Cutaneous MM is divided into subvariants based on clinicopathological correlations, the three most common ones being superficial spreading, nodular, and lentigo maligna. Superficial spreading has a predominantly radial growth while the nodular variant exhibits solely a vertical growth. Lentigo maligna melanoma or melanotic freckle of Hutchinson is by definition a lesion arising from sun-damaged skin, and there is strictly no oral counterpart. These lesions exhibit radial and vertical growths. Another subvariant, the acral lentiginous melanoma (ALM), characteristically occurs on the palms or soles or beneath the nail beds. Salient histological features include a lentiginous radial and deep vertical growth phase, psoriasiform epidermal hyperplasia, an intense host-cell response and a predominant desmoplasia associated with the vertical growth phase (2, 3).

Primary oral MM is uncommon, usually with a relatively short evolution, ranging from a few months to a few years. It is most often diagnosed in older people and is reportedly almost twice as common in men as in women (1, 3, 4), although other studies showed that it occurs equally in men and women or even with a slight predominance in women (5). The most common sites are the hard palate and maxillary alveolar ridge/gingivae.

Oral MM is especially rare in the Caucasian population, with reported rates of occurrence ranging from 0.2% to 8% (4, 6-8). In contrast, it accounts for a substantially higher proportion (35% to 60%) of dark-skinned patients such as blacks (3), and Orientals, in particular the Japanese (5, 9, 10).

The clinicopathological variation and aetiological factors of oral lesions are not well defined. In the oral cavity, melanotic lesions exhibiting radial and vertical growth phases have also been reported. Their features are reportedly indistinguishable from / similar to lesions on the palmar and plantar skin and on the nail beds (subungual), and these lesions are thus referred to as acral lentiginous melanoma (ALM) (2, 5, 9, 11). These lesions are reportedly much more aggressive than lentigo melanotic melanomas and are more likely to metastasize. Intraoral differentiation of ALM from the superficial spreading type is only academic as treatment is the same. The literature is vague as to whether either type will be of more favourable prognosis.

The authors would like to present a case of ALM and discuss its management.
Case report

A 79-year-old Chinese man was referred from a private dental clinic with an extensive pigmented lesion of the hard palate. His chief complaint then was that his denture of many years was loose. He was unaware of the lesion, which was hidden under his denture, as there was no discomfort or other symptoms. The lesion presented as a soft black swelling at the anterior part of the hard palate with multiple macular, pigmented areas on the adjacent gingivae (Fig. 1). Computerised tomogram (CT) did not show bony erosion of the palate or antral walls, but the right antrum was cloudy (Fig. 2) and the radiologist queried whether that could be a case of sinusitis. No cervical lymphadenopathy was evident clinically or on CT scan. Other investigations, including postero-anterior chest radiograph, liver function test and haematological investigations, did not show abnormalities. No bone scan was done.

An incisional biopsy specimen taken from the pigmented periphery was reported as probably not representative of the lesion, given that there was a provisional diagnosis of malignant melanoma. The second biopsy taken from the soft central raised region confirmed the suspicion of the lesion being a malignant melanoma.

Management

Despite his age, the patient was in good health and he opted for surgical excision of the lesion. At operation, it was found that the lesion has spread to the right antrum via a bony defect in the right alveolus. The lesion was excised in the subperiosteal plane with a 1 cm margin, leaving the hard palate intact while a partial right maxillectomy was done. The resultant defect was packed with Whitehead varnish pack and secured with an acrylic plate. The patient was followed up until the defect epithelialised satisfactorily and a new denture was to be issued. However, he failed to attend subsequent follow up and was out of contact.

Pathological findings

The gross specimens submitted for histopathological examination consisted of the following:

- a. resected right maxilla and antrum, dimensions 3.5 × 2.5 × 2.0 cm
- b. palatal mucosa with tumour in toto, dimensions 5.5 × 3.5 × 1.7 cm
c. soft tissues from right soft palate, dimensions 1.2 × 0.7 × 0.5 cm
d. soft tissues from left soft palate, dimensions 1.3 × 1.3 × 0.8 cm
e. dark soft tissues from tooth 17 and 26 regions, measuring 1.2 × 1.0 × 0.5 cm and 1.5 × 0.9 × 0.6 cm respectively.

Microscopic examination of the excised tumour mass showed a malignant melanoma with a predominant radial growth phase. The tumour mass consisted of epithelioid cells admixed with polygonal and multinucleated forms (Fig. 3). There was frequent mitotic activity. Melanin production was mild (Fig. 3) to moderate (Fig. 4). The melanoma appeared to arise from the melanocytes of the overlying epithelium. Adjacent to the area of invasive tumour, a radial lentiginous component characterized by presence of nests of atypical melanocytes associated with acanthosis and rete process hyperplasia of the overlying epithelium was observed (Figs. 5a and 5b). In other areas the surface of the main tumour mass was extensively ulcerated. Sections from the margins of the right and left soft palates and the resected maxilla were cleared of tumours.

Based on the above mentioned findings, a diagnosis of acral lentiginous melanoma of the palate was made.

Discussion

A review of the literature showed that acral lentiginous melanoma is rare. Its occurrence is reportedly higher in Orientals than Caucasians. Umeda (5), in a study on cases of oral malignant melanoma in a Japanese population, reported the macroscopic and microscopic findings of 13 melanomas as corresponding to those of acral lentiginous melanoma of the skin. In these patients, the lesions exhibited three phases: a nodular phase consisting of spindle-shaped or epithelioid tumour cells in the submucosa, a pigmented plaque phase consisting of preinvasive tumour cell nests in the lower epithelial layers, and a macular phase consisting of proliferation of dendritic melanocytes without apparent atypia or simple hyperpigmentation in the basal cell layer. These features were also exhibited in the present case (Figs. 3–7).

The lesion occurred in the palate, the most common site of presentation. The patient’s main complaint was that his denture of many years was loose and that was the reason for him to visit the dentist. One of the signs of oral malignant melanoma (MM) is the loosening of dentures (4, 7). Since most melanomas are painless for many years, dentists are often the first to discover the lesion. If the patient had been more regular with his dental visits, the lesion might have been discovered at an earlier stage. His occupation as a nighttime porridge hawker suggests that the predisposing factors of oral MM may not be the same as their cutaneous counterparts. Although the aetiology is unknown, the fact that he was a heavy cigarette smoker could have had a bearing on the occurrence of the lesion. It would be interesting if the patient could remember whether he had a period of time in which there was pigmentation or melanosis.

Efforts were made to determine if the oral MM was
a primary or a metastasis from a distant primary. Tests performed included CT scan, chest radiographs, haematological investigations and liver function test. A bone scan could have been done but was not. The treatment could have been different if the oral lesion was a metastasis from a distant primary. Todahl and Sprague (14) reported 8 cases of metastatic oral MM out of 42 cases examined.

This case also illustrates the need for multiple biopsies to get the most representative picture of the lesion. The biopsies should include both surrounding areas as well as the central raised area. The interval between biopsy and definitive treatment should be as short as possible. In this case, it was within two weeks. Even though no lesion was found on the nail bed and palmar plantar regions, the distinctive histological features highly indicate a diagnosis of acral lentiginous melanoma. The presence of satellite lesions around the main lesion could have been embolic spread of the tumour along the lymphatic with the development of secondary tumours. This could be an indication of poor prognosis for the patient.

There are a few options for treatment of malignant melanoma. Complete excision with a wide margin is the treatment of choice whenever possible. In the case of malignant melanoma affecting the palate, subperiosteal excision sparing the hard palate is recommended, thus limiting mutilation, especially in light of a very poor overall prognosis (6, 15). In the present case, a more radical approach including right maxillectomy had to be taken due to the extension of the lesion into the maxillary sinus. Although the fullness in the maxillary sinus in CT scan was reported as being consistent with maxillary sinusitis, the likelihood of this being an invasion of the lesion into the maxillary sinus should be considered and confirmed prior to undertaking the definitive treatment.

If the patient’s health did not permit surgical intervention, radiotherapy would be an option. Curran and Whittaker (16) reported cases of temporary regression after radiotherapy while Pearson (17) reported cases of apparent cure. Berthelson et al. (18) and Harwood and Cummings (19) showed some favourable responses with highly fractionated radiotherapy. Smyth et al. (15) supplemented surgery with irradiation in cases where the melanoma has been resected with a clear margin, and they alleged better success. One of their patients was still alive after 5 years even though the original lesion was very advanced. Chemotherapy was also used in the palliative treatment of some incurable cases (6).

Oral lesions have been found to have a worse prognosis than their skin counterparts. This could be due to the inherently more aggressive nature of the lesions of the oral MM or simply to the fact that they are discovered or biopsied at a more advanced stage. Another factor could be the more confirming, limiting and more difficult treatment area of the oral cavity. Umeda (5) however reported favourable results with his treatment regime consisting of conservative excision, followed by radiotherapy and immunotherapy. He reported that out of the 11 patients treated in this manner, nine had a good outcome without major cosmetic and functional morbidity. This suggests that the prognosis of oral melanoma is not as poor as previously reported if adequate therapy is
provided. Kato et al. (13) noted a remarkable improvement in the prognosis of ALM at their institution and postulated that it could possibly be explained by early detection including melanoma in situ.

The tendency for metastasis to regional lymph nodes is high in MM. Clinical and CT examination of the present case showed no involvement of cervical lymph nodes. The role of prophylactic radical neck dissection is still controversial (20). Regional lymph node metastases seem to be of less importance for persistence of the melanoma than incomplete excision. In his series, Umeda (5) did not include prophylactic neck dissection in the treatment protocol.

It was unfortunate that this patient was lost to follow up, as it is not uncommon for oral MM to recur even though the lesion has been excised with a clear margin. Ideally, the patient should be regularly reviewed for life.

Conclusion
This case highlighted the potential role of a dental surgeon in early diagnosis of an oral malignant melanoma. The biopsy of a widespread lesion should be carried out at multiple sites to ensure an accurate diagnosis, as malignant changes may not occur uniformly across the lesion. Although the lesion was excised, the potential for local recurrence and regional or even distant metastasis could not be dismissed.

References

(Accepted for publication August 1, 2003)