

Primary Malignant Melanoma at Base of the Tongue

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Abstract

Primary malignant melanoma is rarely seen in the oral cavity, especially in the tongue. However, the base of the tongue is an extremely rare location for primary malignant melanoma. A 68-year-old male attended the otorhinolaryngology clinic with complaint of foreign-body sensation in the throat for 1 year. Intraoral examination showed a painless and black-colored mass on the right side of the base of the tongue. Histopathology report showed the diagnosis of a malignant melanoma. He underwent composite resection of the tumor and right-sided functional neck dissection. Early diagnosis should be made by proper examination of the oral cavity and oropharynx and early biopsy of the pigmented and nonpigmented mass. Early detection and treatment is required for better prognosis of the malignant melanoma at the base of tongue.

Keywords: Base of tongue, malignant melanoma, melanocyte

INTRODUCTION

Malignant melanoma is a tumor of the melanocytes at the basal layer of the mucosa. During developmental period, melanocytes arise from the neural crest precursor cells. These cells migrate and differentiate into mature melanocytes, which are found in the basal and parabasal layers of the skin and mucous membrane.^[1] It may present in two patterns such as rapid enlargement of the pigmented lesions, and it is preceded with pigmentation with variable duration of time. The incidence of the malignant melanoma is rapidly increasing every year, and it accounts approximately 5% per year, which is more than any other cancer of the body.^[2] In comparison to the cutaneous melanoma, the mucous counterpart is very rare and represents 0.5%–2% of all types of the melanomas among Caucasian patients.^[3] Mucosal melanomas arising from the oral cavity and pharynx constitute 30%–50% of all types of the mucosal melanomas in the body.^[4] The melanoma of the mucous membrane of the oral cavity and oropharynx is often aggressive and invasive in nature and common at the palate, alveolus, and lips. The mucosal melanoma has an aggressive clinicopathological behavior and poor prognosis, with a 5-year survival rate <25%.^[4] The tongue, specifically the base of the tongue, is an extremely rare location for malignant melanoma, so definitive diagnostic tools and treatment have not yet been established. Here, we present a case of primary malignant melanoma at the base of the tongue of a 68-year-old male.

CASE REPORT

A 68-year-old male attended the outpatient department of otorhinolaryngology with complaints of foreign-body sensation in the throat for 6 months. He also had mild dysphagia to solid foods. There was no associated pain or bleeding from the mouth. There was no past history of trauma and systemic illness. He had no addiction to smoking and alcohol. On examination, a black-colored mass measuring approximately 2.5 cm × 3 cm was seen on the right side of the base of the tongue [Figure 1]. The mass at the base of the tongue was not pedunculated with smooth surface and a well-delineated margin. There were no skin lesions over the rest of the body favoring the diagnosis of primary malignant melanoma. Based on the above clinical findings, a provisional diagnosis of primary malignant melanoma at the base of the tongue was made along with keeping in mind certain differential diagnoses such as hemangioma, melanotic macule, and melanoacanthoma. Computed tomography (CT) scan and magnetic resonance imaging (MRI) of the neck showed a mass at the right side of the base of the tongue [Figure 2].

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Figure 1: Intraoral examination showing a black-colored mass of malignant melanoma at the right side of the base of the tongue

There was no cervical lymphadenopathy on CT scan of the neck. The patient underwent excisional biopsy under general anesthesia, and the histopathological report confirmed malignant melanoma. The histopathological findings showed neoplastic proliferation of epithelial-to-spindle melanocytes along with a deposition of melanin [Figure 3]. There were also scattered neoplastic cell nests present in the overlying squamous epithelium, which suggest that the tumor was a primary rather than a metastatic mass. Chest X-ray, whole-body scan, and ultrasound of the abdomen showed no definite distant metastatic lesions anywhere in the body. Metastatic workup revealed no evidence of distant metastasis. He received composite resection of the tumor mass on the right side of the base of the tongue and right functional neck dissection. The complete tumor mass was removed with healthy margin and no evidence of the metastasis was seen in the tissue of the functional neck dissection. The patient had an uneventful recovery. He has been disease free for >2 years with no clinical or biochemical evidence of metastasis.

DISCUSSION

The mucosal membrane of the oral cavity and oropharynx is an uncommon location for the origin of primary malignant melanoma. Presence of the melanocytes in the mucosal linings of the respiratory tract, gastrointestinal tract, and urogenital parts explains the evidence of the malignant melanoma in these sites.^[3] Primary malignant melanoma is an extremely rare clinical entity at the base of the tongue. It occurs in an equal frequency among males and females.^[3] It is common in palate, maxillary gingiva, and lips of the oral cavity and specifically uncommon in the tongue.^[3] Although certain irritant materials and carcinogenic compounds such as tobacco smoke, chewing form of tobacco, and formaldehyde are implicated for malignant melanoma, the potentiality of these materials is still not clear.^[5] Our patient had addiction to smoking, alcohol, and tobacco chewing. Mucosal malignant melanoma in the oral cavity is classified into four types on the basis of the



Figure 2: Computed tomography scan of the neck showing a mass at the right side of the base of the tongue

clinical appearance such as pigmented nodular, nonpigmented nodular, pigmented mixed, and nonpigmented mixed.^[5] Oral cavity and oropharyngeal mucosal malignant melanoma have wide range of clinicopathological presentations, which can be seen as black, gray, purple, and even red. Some lesions appear as uniform in color, whereas some show variations. The lesions are usually irregular and asymmetric in outline and sometimes multiple. The surface of the lesion appears macular to ulcerated and nodular in nature.^[6] The clinical presentations of the primary malignant melanoma at the base of the tongue are often nonspecific. The clinical features are usually painless, dark brown or black-colored nodules or macules seen at the base of the tongue. As this malignancy progresses, it can lead to bony erosion. Clinicians should think about the possibility of the metastasis from a cutaneous melanoma because the metastasis plays an important role in deciding the goals and methods of treatment. Clinically, the malignant melanoma of the base of the tongue has a differential diagnosis of melanocytic nevus, melanotic macules, Laugier's disease, drug intake, vascular lesions, and associated endocrine diseases or different syndromes.

The diagnosis of primary malignant melanoma of the base of the tongue may be difficult due to several causes such as nonrepresentative sampling, small biopsy size, late-stage lesions, and absence of clinical data. Histopathologically, malignant melanoma has three patterns such as *in situ* pattern (15%), where the tumor is limited to the epithelium and epithelial-connective tissue interface (junctional); an invasive pattern or nodular pattern (30%), where the tumor is seen within the underlying connective tissue; and a combined pattern (55%), which is an invasive melanoma along with an *in situ* component which is typical in majority of advanced lesions.^[1] Immunohistochemistry of mucosal malignant melanoma in the oral cavity is often similar to that of cutaneous melanomas, but malignant melanoma with no oral cavity involvement is positive for cytokeratin.^[7] HMB-45 shows a greater specificity to melanoma than

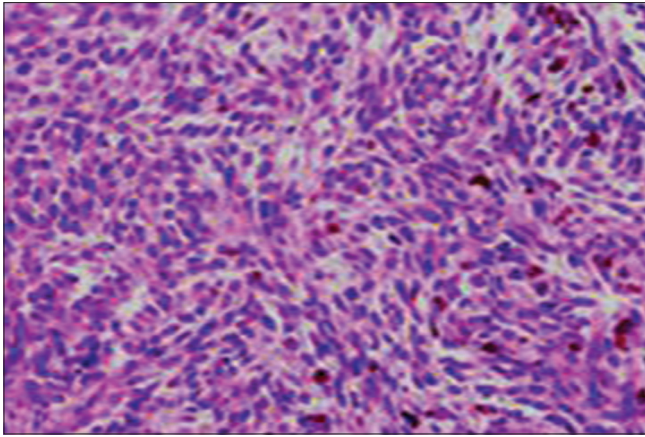


Figure 3: Histopathological findings of the malignant melanoma showing neoplastic proliferation of epithelial-to-spindle melanocytes along with deposition of melanin ($\times 200$, H and E)

S-100 protein.^[7] Immunoperoxidase stains may be positive toward S-100 and HMB-45 stains. CT scan of the head and neck shows the metastasis. MRI is helpful to assess the invasion of the malignant lesion to the surrounding soft tissues. If the diagnosis of mucosal malignant melanoma is done early, the malignant cells are confined to the epithelium or with minimal invasion. This early stage of malignant melanoma is 100% curable by complete excision (*in situ* lesion) or with a 5-year survival rate of 95%.^[8]

Surgery is considered the most effective treatment option for malignant melanoma. Although surgery is the primary treatment for malignant melanoma, radiotherapy and chemotherapy are considered adjuvant treatment because of its grave prognosis.^[9] Wide resection of the tumor with a margin of 2–5 cm is required for treating malignant melanoma in the skin; however, it is difficult to perform such surgical excision in the oral cavity and pharynx because of the anatomical limitations. Our patient underwent complete excision of the mass on the right side of the base of the tongue and right-sided functional neck dissection. The histopathological report revealed clear margin of the resection and no evidence of the metastasis. Several tests or investigations showed no evidence of the distant metastasis. The role of radiotherapy in this malignancy is controversial as several authors presume that this neoplasm is radioresistant and it is used in the case of palliation. Radiotherapy and chemotherapy are helpful as primary treatment options for unresectable malignant melanoma. At present, immunological treatment options are utilized. The widely used cytokines are interferons and interleukin-2. However, immunotherapy has never improved the survival or local regional control rates in the case of the malignant melanoma arising from the mucosal lining of the oral cavity and pharynx.^[10]

Because of the hidden site and rich vascularization of the mucosal melanoma at the base of the tongue, it usually presents in a more advanced stage and so causes higher mortality. The prognosis of mucosal malignant melanoma is worse than that of dermatological malignant melanoma. The 5-year survival

rate is approximately 6.6%–20.0%.^[5] Several factors have been associated with poor prognosis such as lack of the symptoms in early period of the disease, difficulty in getting wide radical excision due to its anatomical limitations, and rich blood supply which enhances the hematogenous spread.

CONCLUSION

Primary malignant melanoma at the base of the tongue is a rare neoplasm. Primary malignant melanoma found in the base of the tongue is notorious for its unpredictable and widespread metastasis. Its diagnosis is usually based on the clinical presentations of the patient and histopathological examination. Early diagnosis can be promoted by careful examination of the base of the tongue and early biopsy of the pigmented and nonpigmented masses. Early diagnosis and treatment helps improve the prognosis of patients with primary malignant melanoma at the base of the tongue. More efforts should be undertaken to create public awareness regarding early detection of malignant melanoma.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Thlooe MM, Khammissa RA, Bouckaert M, Altini M, Lemmer J, Feller L. Oral mucosal melanoma: Some pathobiological considerations and an illustrative report of a case. *Head Neck Pathol* 2015;9:127-34.
2. Boring CC, Squires TS, Tong T. Cancer statistics, 1993. *CA Cancer J Clin* 1993;43:7-26.
3. Gutman M, Inbar M, Chaitchik S, Merhav A, Pausner D, Skoznik Y, et al. Malignant melanoma of the mucous membranes. *Eur J Surg Oncol* 1992;18:307-12.
4. Chiu TT, Lin HC, Su CY, Huang CC. Primary malignant melanoma of the tongue. *Chang Gung Med J* 2002;25:764-8.
5. Chaitanya YC, Chaitanya PV, Reddy MV, Bhavya B. Oral malignant melanoma. *J Indian Acad Oral Med Radiol* 2018;30:158-60.
6. Hashemi PM. Malignant melanoma of the oral cavity. *J Dent Tehran Univ Med Sci* 2007;4:44-51.
7. Barrett AW, Bennett JH, Speight PM. A clinicopathological and immunohistochemical analysis of primary oral mucosal melanoma. *Oral Oncol Eur J Cancer* 1995;31:100-6.
8. Auluck A, Zhang L, Desai R, Rosin MP. Primary malignant melanoma of maxillary gingiva-A case report and review of the literature. *J Can Dent Assoc* 2008;74:367-71.
9. Goel A, Sreenivasan V, Patil P. Oral malignant melanoma – A review. *Int Dent J Stud Res* 2013;1:74-7.
10. Nandapalan V, Roland NJ, Helliwell TR, Williams EM, Hamilton JW, Jones AS. Mucosal melanoma of the head and neck. *Clin Otolaryngol Allied Sci* 1998;23:107-16.