A Rare Case of Locally Advanced Malignant Melanoma of the Oral Tongue

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ABSTRACT

Introduction: The oral cavity is a rare location for the development of primary malignant melanoma. The most common primary lesion sites are the palate and gingiva. Cutaneous malignant melanomas constitute the majority of cases. Non cutaneous malignant melanomas are mainly seen in choroidal layer of the eye, mucosal surface of the upper respiratory tract, gastro-intestinal & genito- urinary tract.. Primary malignant melanoma originating in the oral cavity is a very rare entity ranging from 0.2% to 8.0% of all malignant melanoma cases. **Case Presentation:** A 60 year old female hindu patient from a rural background presented to our hospital with the complain of a dark coloured lesion in the tongue for 3-4 months. There were no cutaneous lesions suggestive of malignant melanoma over the rest of her body. The biopsy of the tongue lesion revealed a histopathology consistent with primary malignant melanoma which was further confirmed by immunohistochemistry.MR scan of tongue and neck was performed. Chest radiograph, abdominal sonography and computed tomography of chest and whole abdomen revealed no definite distal metastatic lesions. She received composite resection of the tumor on the right side of the tongue and right functional neck dissection followed by radiotherapy. **Conclusion:** The principle treatment for primary tongue melanoma is wide surgical excision. Early diagnosis will be promoted by careful oral examination and early biopsy of pigmented and non-pigmented masses. We reviewed the published reports in the English literature since 1970 and fewer than 30 cases of primary tongue melanoma were presented. We present a case report and a review of the relevant literature.

Keywords: Oral Cavity, Mucosal Melanoma, Tongue

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Conflict of interest: None

INTRODUCTION

Primary malignant melanoma of the oral cavity is an extremely rare entity. In the oral cavity they mainly arise from maxillary, gingival, palate followed by lips. A review of literature since 1970 revealed only 30 cases of primary malignant melanoma of tongue. Review of recent Indian journals revealed a soliatary case that too of Amelanotic malignant melanoma. Therefore primary malignant melanoma of the tongue is an extremely novel and rare case which we are presenting here.

CASE PRESENTATION

A 60 year old female patient presented to our outpatient department with the complain of painless black coloured mass on the right lateral side of tongue since 3 months (FIGURE 1), however she had a history of a black coloured patch on that area since 6 months. She was from a rural background, hindu by religion, non alcoholic, non smoker, non tobacco chewer. She did not have any other co-morbidities. She had been referred to our hospital from a rural health centre and had received no specific treatment till she presented to our hospital.

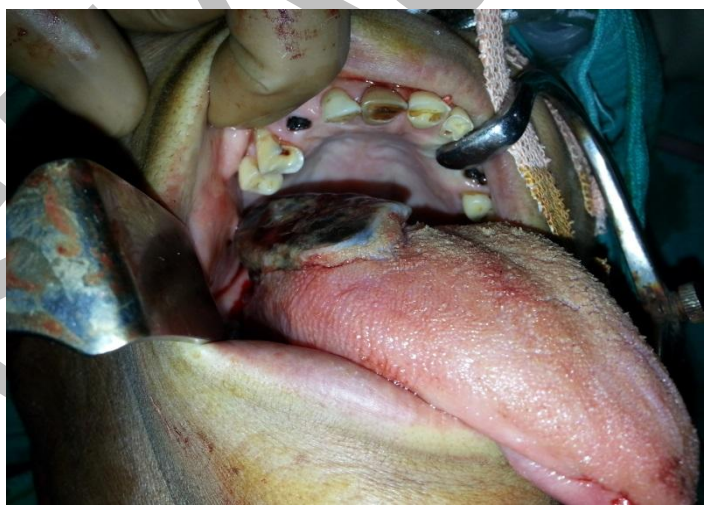

Figure 1: Clinical photograph showing black coloured lesion in right lateral surface of tongue.

On examination the black pigmented and proliferative mass was seen in right lateral border tongue which measures around 4×4 cm. On palpation the growth seemed not to cross the midline of the tongue. No neck nodes were palpable (cT3N0Mx) and there were no cutaneous lesions suggestive of malignant melanoma over the rest of her body.

A punch biopsy was taken and sent for histopathological examination which revealed Primary Malignant Melanoma Grade-3. MRI of the oral cavity and neck was done which revealed an abnormal soft tissue lesion appearing hyperintense on T1(Figure 2a) weighted and hypointense on T2 and STIR images, in right half of the tongue involving the posterosuperior tongue parenchyma along the right lateral margin. The lesion did not cross the midline. The base of tongue, pre epiglottic space and valeculla was normal. No sublingual extension was seen. The lesion measures approximately 3.5(AP) × 1.3(HT) ×1.7(T) cms. No significantly enlarged nodes were seen on either side. A metastatic workup was performed which included contrast enhanced CT Chest and Abdomen and they revealed no definite distant metastatic lesion. This case was taken up in our tumour board meeting and our unanimous decision was posting the patient for surgery.

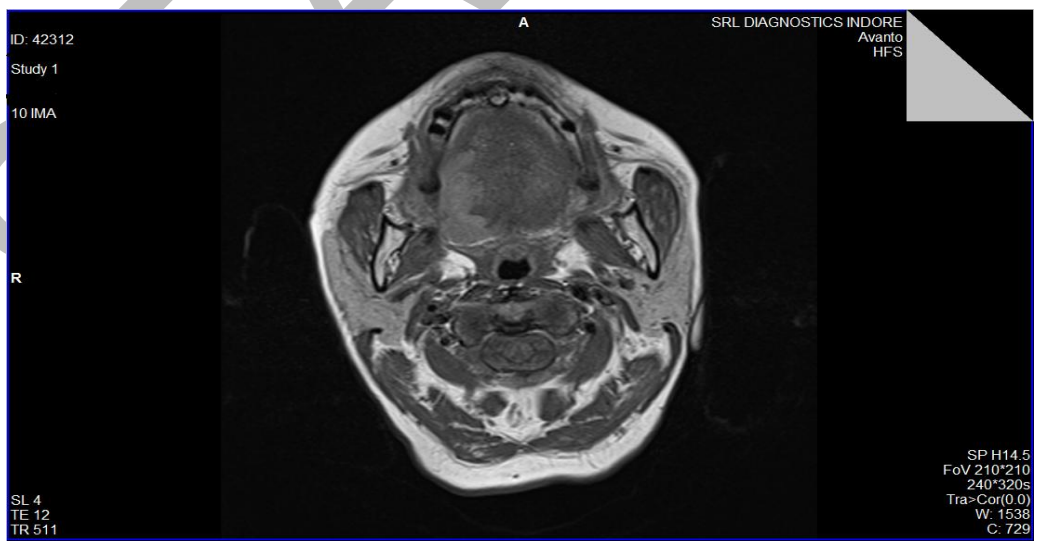

Figure 2a: Hyper intense Mass on T1 weighted MR Scan

The head neck onco-surgeon performed a hemiglossectomy and right sided modified radical neck dissection. Intra operatively the growth was found to the extent of the base of the tongue and there were multiple black pin head sized scattered nodules posterior to the lesion near the base of the tongue which were superficially shaven and sent separately for histopathological examination. During neck dissection few neck nodes were identified and separated which were black in colour. She was discharged on the 15 th post operative day, her recovery was uneventful.

The post operative histopathological finding revealed Invasive Malignant Melanoma characterized by markedly pleomorphic cells with hyper chromatic nuclei, prominent nucleoli and abundant cytoplasm with melanin pigment, mitotic index was raised.(FIGURE 3) The feautures suggestive of grade 3 poorly differentiated invasive malignant melanoma. The depth of invasion was 1.4 cms, surgical margins including soft tissue floor mouth show invasion of tumour cell on either side , proximal surgical margin was free. All the dissected lymph nodes from the neck are free from tumour invasion. Scattered tumour cell nests were also present in the overlying squammous epithelium suggesting that the tumour was the primary rather than a metastatic lesion.

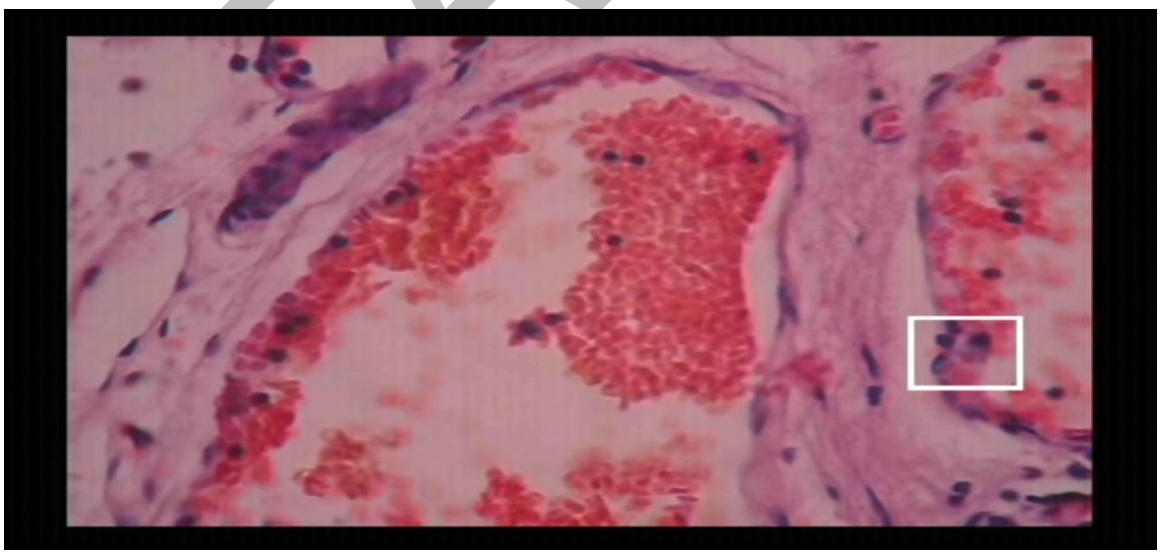

Figure 3: Photomicrograph showing melanoma cells in post op Histopathology

The immune-histochemical profile of this patient according to the melanoma panel revealed that these atypical cells were diffusely positive for S-100 and HMB-45 (FIGURE 4). According to the TNM classification patient was classified as pT4aN0M0 (Stage IVA). And in accordance with NCCN 2013 guidelines she was called for post operative External beam radiotherapy. External beam radiotherapy was delivered by Theratron cobalt 780 machine via conventional parallel opposing portals to the primary site to a dose of 66Gy (2Gy/fraction) and the ipsilateral neck was also treated to a dose of 50Gy (2Gy/fraction) since lymphovascular invasion was appreciated in histopathological examination. She tolerated the treatment fairly well. After completion of EBRT, patient was planned for HDR interstitial implant brachytherapy. The patient was then treated to a dose of 14Gy by HDR Microselectron brachytherapy by remote afterloading technique using Ir192 source. The patient was treated in 4 fraction in 2days, 350cGy per fraction with an interfraction interval of minimum 6 hours. She developed grade 1 skin reaction and grade 2 mucositis which was managed conservatively. She did not encounter any major side effects and completed the course of radiotherapy without any interruptions due to side effects. The patient had an uneventful recovery and received regular follow up examination till 2 year

DISCUSSION

The mucosal membranes are rare sites for primary malignant melanoma. The presence of melanocytes in the mucosal membrane of respiratory, alimentary and urogenital tracts explains the occurrence of malignant melanoma in these sites.[3] Melanoma of the oral cavity mucosa is a distinctly rare occurrence with an incidence of 0.012/105 for combined primary and metastatic lesions to oral cavity.[4] The tumors are commonly found in patients older than 40 years and there are no significant differences between genders.[2,4,5] We reviewed the reports in the English literature and fewer than 30 cases of primary malignant melanoma of the tongue were found. Men were more commonly affected than women in primary malignant melanoma of the tongue which was in contrast to skin

melanoma where the incidence between genders was roughly equal. Oral pigmentation preceded the development of malignant melanoma in about a third of the patients.[8] Takagi et al. reported that mucosal melanosis was associated in 66% of oral melanoma, pre-existing in 36.2% and concurrent in 29.8%.[6] There are many situations to be considered in the clinical differential diagnosis: Tattoos, melanotic macules, Laugier's disease, melanocytic nevus, drug intake, some vascular lesions, and oral pigmented lesions associated with endocrine disorders or different syndromes[9]. We suggested that a deep biopsy should be performed on any intra-oral pigmented lesions with the tendency of malignant transformation. Oral melanomas may present as flat, painless, dark brown or black discoloration macules or nodules, sometimes with erythema or ulceration. As the disease progresses, bony erosion is common. A very important point in the management of malignant melanoma of the oral cavity is to exclude the possibility of it being a metastasis from a cutaneous melanoma. This is because metastasis plays a large role in determining the goals and method of treatment. In the histopathologic distinction, Billings et al. found that all metastatic lesions lacked evidence of junctional activity in the overlying mucosa and showed no epidermal migration. This is in contrast to primary lesions, in which 44 % and 38% had junctional activity and epidermal migration, respectively. A unique feature seen in the primary lesions (25%) was the presence of extensions of the melanotic pigment into the minor salivary glands.[10] However, these findings may be inconsistent, and the diagnosis of a primary oral mucosal melanoma requires the careful search for and exclusion of any suggested cutaneous or mucosal lesions.[11] For this patient, there was no history of melanoma-like lesion excision. We did not find any cutaneous lesions suggestive of malignant melanoma over her body, extremities, head or neck; there were not any pigmented lesions in the nasal cavity, pharynx and larynx. The histopathological findings revealed scattered tumor cell nests that were also present in the overlying squamous epithelium, suggesting that the tumor was a primary rather than a metastatic lesion. Physical examination and histopathologic findings suggested the

diagnosis of primary melanoma. The immunohistochemical profile of oral malignant melanoma was similar to that of cutaneous melanoma, with the exception that no oral malignant melanoma was positive for cytokeratin.[12] HMB-45 are regarded as showing greater specificity for melanoma than S-100 protein.[13] The immunoperoxidase stains of our patient showed positive finding in S-100 protein and HMB-45 stains. Various methods of therapy including surgery, irradiation alone, irradiation with surgery and chemotherapy. Surgery is believed to be the most effective treatment for melanoma.[1] In chemotherapeutic agents vinca alkaloids, alkylating agents, antimetabolites, levamisole and dactinomycin are used but all with unsatisfactory results.[7] In recent years, immunological therapies have been used. The most widely used cytokines are interferons and interleukin-2. However, immunotherapy has not improved survival or local regional control rates in patients with mucosal melanoma .[14] Wide resection with a surgical margin 2 to 5 cm is necessary for cutaneous melanoma, but is difficult to achieve for oral melanoma because of anatomical reasons. Our patient received a composite resection of the tumor on the right side of the tongue and right functional neck dissection. The histopathological findings revealed no evidence of metastasis and the resection margin was clear. A series of studies showed no evidence of distal metastasis. So in our case as an adjuvant treatment to surgery we use external beam radiotherapy followed by brachytherapy boost for locoregional control.

CONCLUSION

In general, the prognosis for patients with oral malignant melanoma is poorer than that for patients with cutaneous lesions. The 5-year survival rates were 6.6% to 20%.[5,6,15] Several factors may contribute to this poor prognosis including lack of symptoms early in the disease, difficulty in achieving wide radical excision because of anatomic limitations, and rich blood supply that may facilitate hematogenous spread.[2] Early diagnosis will be promoted by careful oral examination and early biopsy of pigmented and nonpigmented masses. There is no time period after which Mucosal Malignant Melanoma is considered as cured.

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