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Case Report

A dark intruder – primary oral mucosal melanoma

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ABSTRACT

Oral mucosal melanoma is an infrequent and rapidly progressive malignancy, accounting for approximately 0.5% among all oral cancers, and is associated with poor prognosis. It is frequently detected at an advanced stage, often with involvement of regional lymph node, due to its rapid progression and painless initial phase. The primary treatment is surgical excision, often followed by adjuvant radiotherapy, chemotherapy, or immunotherapy which lowers the risk of recurrence and distant metastasis. In this article, we describe a patient with oral mucosal melanoma of the left superior gingivobuccal sulcus, managed with palliative radiotherapy followed by chemotherapy due to inoperability and financial constraints. A brief review of the literature is also included.

Keywords: Oral mucosal melanoma, HMB-45, Melan A, Aggressive

INTRODUCTION

Melanoma is most commonly found on the skin, but also arises from mucosal tissues from oral cavity, vagina. Oral mucosal melanoma is rare and exhibits rapid progression and high aggressiveness, often leading to a less favourable prognosis compared to skin-based melanomas. Melanomas arising from mucosal surfaces, including oral region, comprises about 1.4% of all primary melanomas diagnosed with the incidence of around 2.3 cases per million annually.[1] The pathophysiology of oral mucosal melanoma is still not well defined. Unlike skin-based melanomas, these tumours are not related to ultraviolet (UV) exposure, as the mucosa is shielded from sunlight. A definitive diagnosis is often confirmed using immunohistochemical markers such as Melan A, HMB-45 and S-100 positive in most of the cases.[2] The primary treatment for oral malignant melanoma is surgical excision with the aim of achieving clear margins to minimize recurrence. In addition to surgery, patients may benefit from adjuvant therapies, including radiation therapy, chemotherapy, immunotherapy depending on the clinical context and disease stage.

CASE REPORT

A 39 years gentleman presented with complaints of swelling in left side of face and neck along with non-healing ulcer inside left side cheek for 1 year. After 6 months, the size of lesion and neck swelling gradually increased, for which he visited a nearby hospital where a contrast-enhanced CT (CECT) of the face and neck was performed, which revealed heterogeneously enhancing lesion in left superior gingivobuccal sulcus extending cranially into base of left maxillary sinus with its lytic erosion. There were multiple heterogeneously enhancing lymph nodes seen at left level IB, II, III, IV, V- largest 26×27 mm in left level II (Figure 1 A and B).

Following that, positron emission tomography-CT (PET-CT) was done and revealed an FDG-avid heterogeneously enhancing lesion in the left superior

gingivobuccal sulcus, extending into the base of the left maxillary sinus with lytic erosion (41×25×33 mm, SUVmax 23.0). FDG-avid cervical nodes were noted in left levels IB-V, largest measuring 28 mm in level II. No distant FDG-avid lesions were detected. The patient presented to the ENT OPD of our institute, where he was evaluated. Biopsy from the ulcerative lesion revealed malignant melanoma with immunohistochemistry positive for HMB-45 and Melan-A (Figure 2 A-C).

As the disease was unresectable, he was referred to the Radiation Oncology OPD for further management. On examination, the patient had a 6×6 cm black-pigmented ulcer proliferative lesion involving the left superior gingivobuccal sulcus, extending into the hard palate. Additionally, there was a 10×10 cm, tender, conglomerated left cervical lymphadenopathy involving levels IB, II, III, IV, and V, with stage IV A. Due to increased disease burden, patient was planned for palliative treatment. He received palliative radiotherapy to the local site with a dose of 30 Gy in 10 fractions.

One-month post-radiotherapy, he reps Immunotherapy was initially planned; however, patient denied therefore palliative chemotherapy based on carboplatin and paclitaxel (3 weekly) was initiated for the patient.

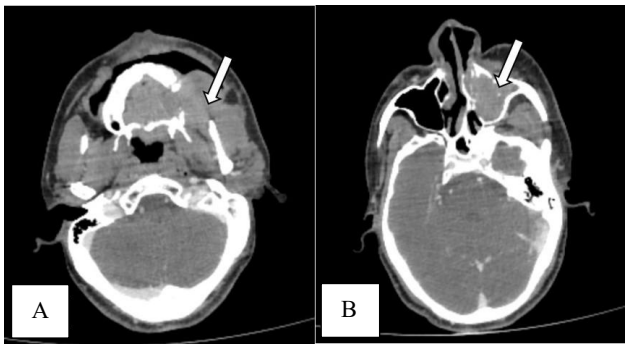

Figure 1: (A) CECT of face – showing heterogeneously enhancing lesion in left superior gingivobuccal sulcus and (B) extension of lesion cranially into base of left maxillary sinus with its lytic erosion.

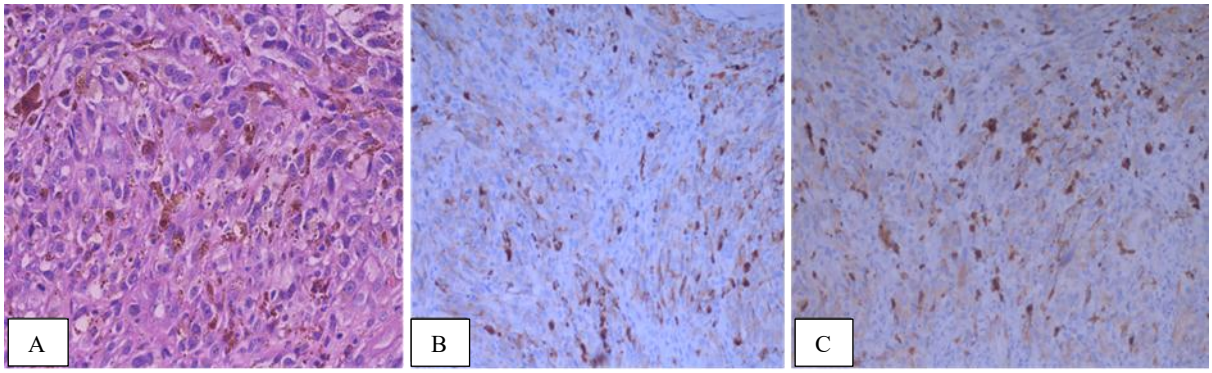

Figure 2: (A) Microscopic section of tumour tissue showing moderate to scanty cytoplasm and increased nucleocytoplasmic ratio with few of the cells showing brownish pigment in cytoplasm, (B) IHC immunoreactive for melan A and (C) IHC- immunoreactive for HMB-45.

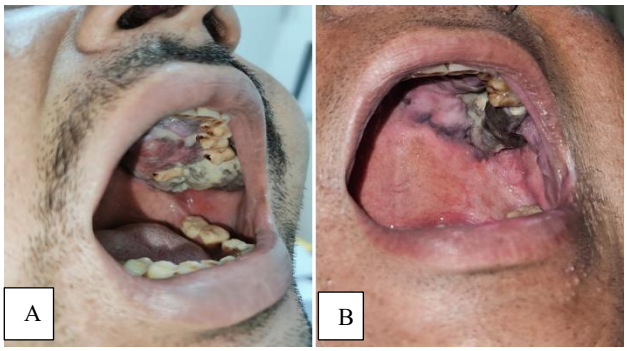

Figure 3: (A) Clinical picture showing pigmented ulcer proliferative growth over left upper gingivobuccal sulcus and (B) reduction in size of lesion post radiotherapy.

Post 2 cycles of chemotherapy, patient developed disease progression and hence planned for Dacarbazine based chemotherapy, but the patient is lost to follow supported good symptomatic relief (Figure 3 A and B).

DISCUSSION

Oral mucosal melanomas (OMM) are rare and highly aggressive malignancies with increased mortality rate. The 5-year overall survival rate is 4.5-29% with median survival rate 18.5 months from the initial date of diagnosis indicating the extremely poor prognosis when compared to its cutaneous counterparts.[3]

Their clinical presentation and biological behaviour are often heterogeneous, making early diagnosis challenging. Definitive diagnosis relies on histopathological examination, with confirmation through immunohistochemical markers such as S100, Melan A and HMB-45. The features of primary oral mucosal melanoma described by Greene et al include the presence of malignant melanoma cells in the oral mucosa,

melanocytes located in the basal layer of the surface epithelium, and the absence of melanoma in any other site.[4] Oral mucosal melanomas usually present in one of the following three forms: in situ (restricted strictly to the surface epithelium), invasive or nodular (encroaching into deeper tissues), or mixed type (displaying both in situ and invasive characteristics). Histologically, these tumours consist of atypical melanocytes with features such as dark, hyperchromatic, and pleomorphic nuclei, reflecting their malignant potential. Once a diagnosis is established, pathologic staging plays a critical role in guiding treatment and predicting outcomes. The 7th and 8th editions of the American Joint Committee on Cancer (AJCC) assigns only T3 or T4 categories to primary tumours-T1, T2 classifications, and also the stages I, II, are not used.[5] There is no universally established treatment protocol for oral mucosal melanoma; however, wide local excision is till recommended as the initial treatment, often followed by radiotherapy, chemotherapy, or immunotherapy to lower the risk of local recurrence and distant metastasis. Adjuvant chemotherapy and immunotherapy have shown promising outcomes in oral mucosal melanoma.

Common chemotherapy agents include dacarbazine, cisplatin, carboplatin, paclitaxel, and 5-FU while Immunotherapic agents like Nivolumab/Ipilimumab/ Pembrolizumab are widely used.[6] The conventional radiotherapy dose for mucosal melanoma is 60 Gy in 30 fractions with 2 Gy per fraction.[7] However, newer studies suggest benefit with hypofractionation. Sydney et al evaluated hypofractionated radiotherapy (30Gy/12#; 2.5Gy/#) in patients with mucosal melanoma primarily in head and neck and observed excellent local control, reduced toxicity, and good symptomatic relief.[8] In our case, the tumour was staged as T4 with nodal involvement and deemed inoperable. Due to financial limitations precluding immunotherapy, palliative hypofractionated radiotherapy (30 Gy in 10 fractions) was given, resulting in good symptomatic relief. This was followed by paclitaxel and carboplatin-based chemotherapy. Due to the rarity of mucosal melanoma, there are currently no landmark randomized trials, and most recommendations are based on retrospective studies or pooled analyses. Hypofractionated radiotherapy may offer a promising approach for unresectable cases, but further prospective research is essential to better define optimal treatment strategies.

CONCLUSION

Multidisciplinary treatment approach is necessary for earlier diagnosis and initiation of proper treatment. In inoperable cases, palliative radiotherapy and chemotherapy can offer meaningful symptom relief and disease control. Hypo fractionated radiotherapy appears promising, but further studies are encouraged to establish standardized treatment approaches.

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