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Primary Oral Malignant Melanoma

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Abstract:

Primary oral melanoma is a rare neoplasm of melanocytic origin, accounting for 0.5% of all oral malignancies. The "chameleonic" presentation of a mainly asymptomatic condition, rarity of this lesion, poor prognosis and the necessity of a highly specialized treatment are factors that should be seriously considered. Here is a case of primary oral malignant melanoma in a 57 years old male and its diagnosis by scrape cytology followed by its confirmation on histopathology and immunohistochemistry.

Key words: Melanoma, Mouth Neoplasms, Neoplasms, Immunohistochemistry, Cytodiagnosis.

Introduction

Oral malignant melanoma accounts for 1-8% of all melanomas and these account for 0.5% of all oral malignancies [1,2]. Oral melanoma is initially asymptomatic, may develop as a slowly growing mass and be present for months or years before being noticed [2]. Various presentations of oral melanoma include pigmented macule, nodule or large pigmented exophytic lesion, ulceration, swelling, bleeding nodular mass, rapid enlargement or loosening of the tooth [3]. Owing to the rarity of this tumour diagnosis and treatment remains a matter of debate without clear cut guide lines. We report a 57 year old male with primary oral malignant melanoma.

Case Report

A 57-year-old male reported with chief complaints of pain, swelling and black discoloration in upper left quadrant of oral cavity sincelast one year. Past history was non-contributory. Clinical examination revealed there diffuse, nontender, soft to firm 5x4 cm swelling in hard palate involving little area of soft palate as well, in relation with upper left incisor to upper second premolar. There was associated black hyperpigmentation of overlying mucosa with bleeding tendency. The growth was non-tender with intact and irregular surface having well defined margins and firm in consistency [Fig.1].

The regional lymph nodes were not palpable. A complete general physical and systemic examination revealed no other primary lesion. Correlating all these clinical features, a provisional diagnosis of primary malignant melanoma was made and

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patient was referred for further investigations.

Radiographically, no involvement of the underlying bone was detected. Distant metastasis was not found on clinical, radiographic and ultrasonographic examination of the patient. Scrape cytology of the lesion revealed single and clustered pleomorphic cells with abundant well-defined cytoplasm; eccentric malignant nuclei; intranuclear vacuoles and nucleoli with pigmented macrophages [Fig.2,3]. The histopathology of incisional biopsy of lesion showed squamous mucosa extensively infiltrated by nests of large cells with pleomorphic vesicular nuclei, prominent nucleoli and abundant cytoplasm with brown pigment [Fig.4a,4b] confirming the diagnosis of malignant melanoma.

Immunohistochemical study of the lesion revealed strong immunopositivity for Melan-A, Vimentin, S-100 and HMB-45 further confirming the diagnosis [Fig.5-8]. In the present case, surgical excision of the lesion was done followed by radiotherapy.

Discusssion

Melanoma is a malignant neoplasm arising from the neural crest cells. During embryonic development, the oral cavity develops from an ectodermal depression or invagination, the epithelial lining of the oral mucosa, normally contains melanocytes in its basal layer, which can evolve into melanoma as in the skin [4,5]. In different studies, the highest incidence of malignant melanoma is in the fifth decades of life (40-70 years). Males appear to be more often affected than females [6]. In the present case the lesion occurred in a 57 years old male.

The initial symptom and sign of OM is often a pigmented growth or swelling. The surface may be smooth, with an intact or ulcerated overlying mucosa. Satellite foci may surround the primary tumor. The color may be uniformly brown or black or may show variation of color, with black, brown,

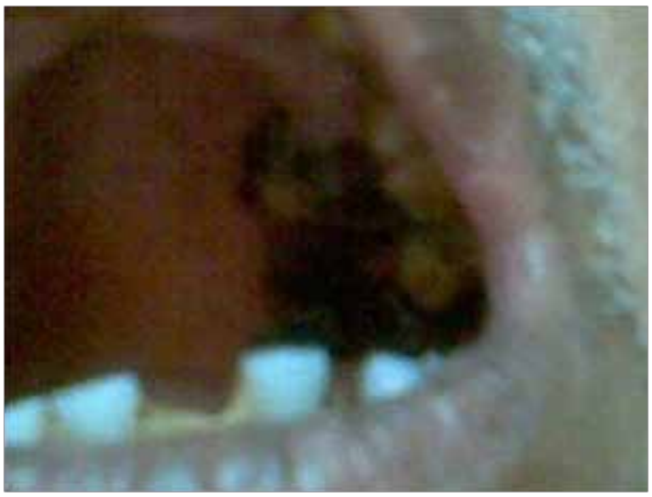

Fig.1: Black hyperpigmentation with irregular margins.

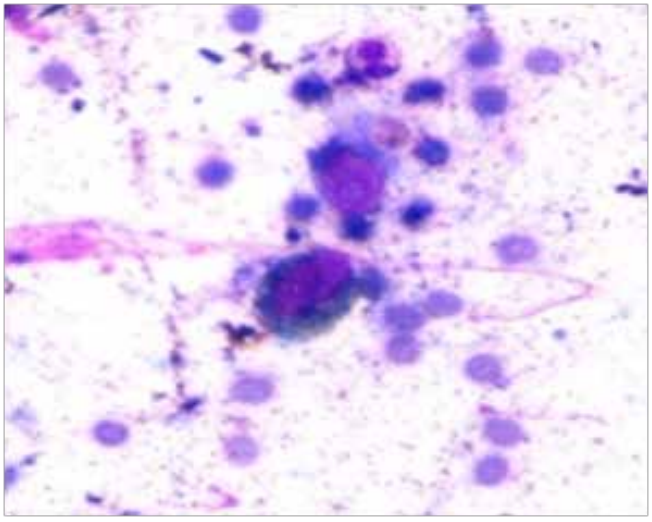

Fig.2: Scrape cytology showing single pleomorphic malignant cells with intracytoplasmic melanin pigment and intranuclear vacuole with prominent nucleoli (MGG,10x).

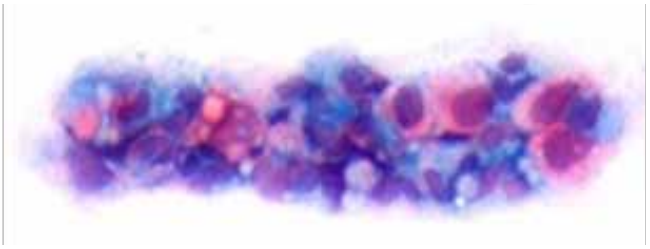

Fig.3: Scrape cytology showing cluster of malignant pleomorphic cells (H&E,10x).

grey, purple and red shades or depigmentations [6]. In amelanotic melanomas, pigmentation is absent [7]. OM has an initial phase characterized by radial growth followed by a phase of invasion of the underlying tissues (the so called "vertical growth phase"). The present lesion showed black hyperpigmentation with intact overlying mucosa.

Primary melanoma occurs most frequently in the hard palate and maxillary gingiva; other oral sites are mandible, tongue, buccal mucosa, upper and lower lip [6,8,9]. The present case lesion extended from hard palate region involving little area of soft palate as well, in relation with upper left incisor to upper second premolar.

A simple TNM clinical staging, recognizing three stages, has shown to be of prognostic value. A recent histopathological microstaging for stage I, which comprises the presence of primary tumor only ($T_{any}N_0M_0$), subclassifies it into three levels [10,11,12] - Level I (pure in situ melanoma without evidence of invasion or in situ melanoma with "microinvasion"); Level II (invasion upto the lamina propria); and Level III (deep skeletal tissue invasion into skeletal muscle, bone or cartilage). Stage II comprises tumor metastatic to regional lymph nodes ($T_{any}N_1M_0$); and Stage III comprises tumor metastatic to distant sites ($T_{any}N_{any}M_1$).

Histologically, the presence of atypical melanocytes (usually larger than normal melanocytes and having varying degrees of nuclear pleomorphism and hyperchromatism) in the epithelial tissue junction, high density of melanocytes and atypical cells in the biopsy of melanotic lesions of the oral mucosa are suspicious for OM [13]. Brush cytology is an advantageous diagnostic procedure because it is non-invasive, relatively painless and inexpensive, and requires a minimum of technical skills. Scheifele *et al* [14] suggested that the main reason for the use of oral brush cytology is not to find a substitute for scalpel biopsy, but rather to take advantage of

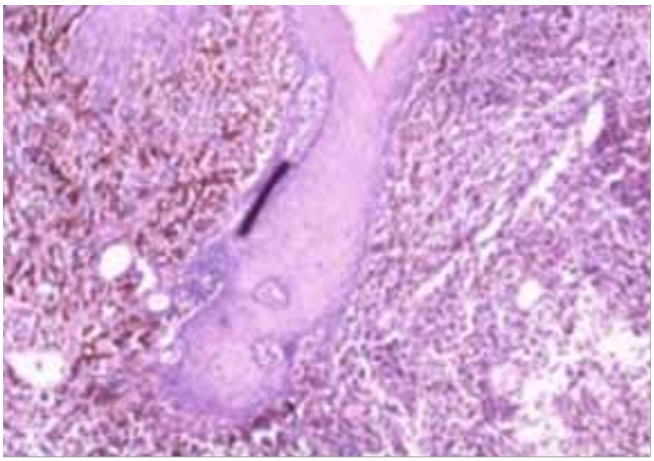

Fig.4(a): Squamous mucosa extensively infiltrated by nests of large cells with pleomorphic vesicular nuclei, prominent nucleoli and abundant cytoplasm with brown pigment (H&E,10x).

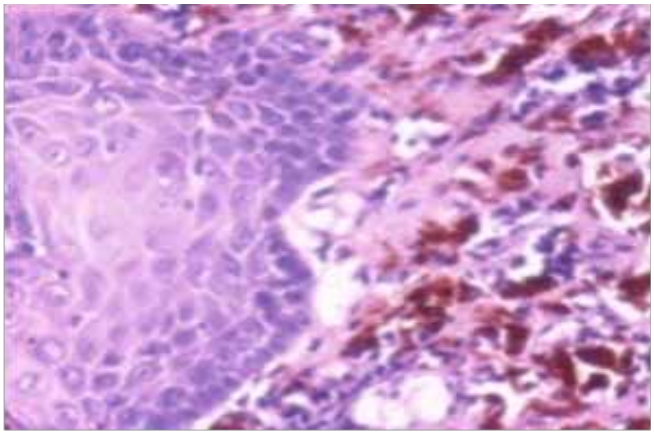

Fig.4(b): H&E, 40x of the above section.

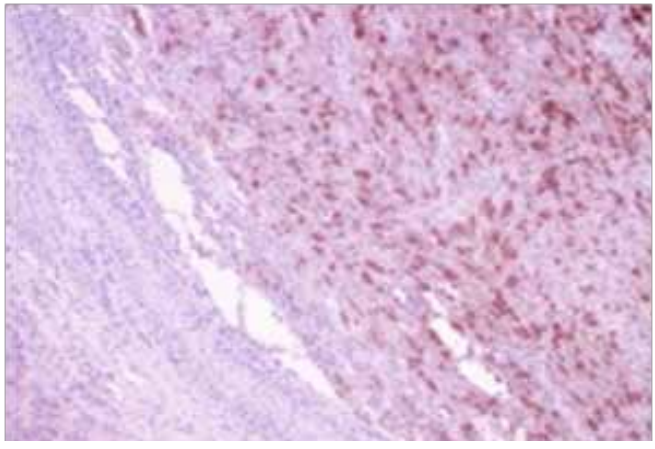

Fig.5: Strong immunopositve, Melan A,10x.

a first-level test that is able to identify dysplastic cells or molecular alterations which would be an indication for histological control, even in clinically apparent benign oral lesions. In most instances, the cells of melanoma contain melanin granules, but they may demonstrate no melanin pigment production (amelanotic melanoma). Immuno histochemical studies showing S-100 protein, MART-1and HMB-45 reactivity of the lesional cells are beneficial in distinguishing such melanomas from other malignancies. Brush cytology is also useful in those situations when a patient refuses to have a biopsy performed or when medically compromised patients would be exposed to unnecessary surgical risks. In addition, anxious patients can be reassured quickly about the nature of oral mucosal changes, especially when a fear of cancer or a family history of cancer accounts for their apprehension [15].

Treatment of OM is still controversial. Excision of the primary lesion, preferably using an intraoral approach and involving at least 1.5 cm of healthy tissue is recommended [16]. Patients with primary OM present lymph node metastasis in 25% of cases [12]. Neck dissection should be reserved for cases with preoperatively confirmed lymphnode metastasis and choice of the neck dissection modality should be guided by the extent and level of the nodes [12]. Surgery could be combined with radiotherapy, chemotherapy or immunotherapy even though effectiveness of such therapies is mostly unknown.

The prognosis of OM is poor. A tumor thickness greater than 5 mm, presence of vascular invasion, necrosis, polymorphous tumor cell morphology and the inability to properly resect the lesions with negative margins have been associated with poor survival in patients with primary OM [10]. Recurrences may occur even 10-15 years after primary therapy. Distant metastasis to the lungs, brain, liver and bones are frequently observed [17,18].

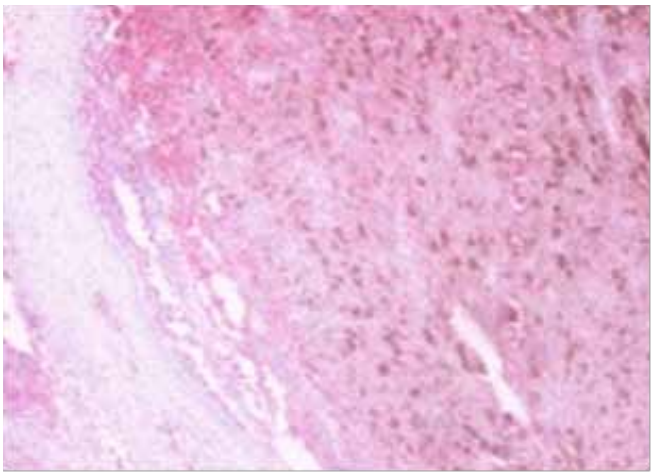

Fig.6: Strong immunopositve, Vimentin,10x.

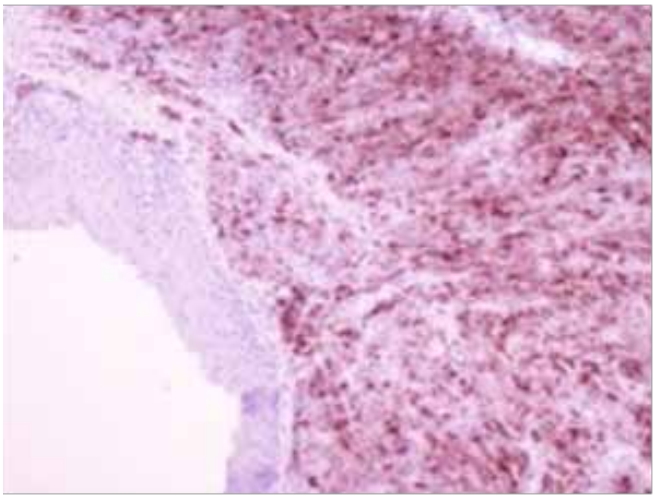

Fig.7: Strong immunopositve, S-100,10x.

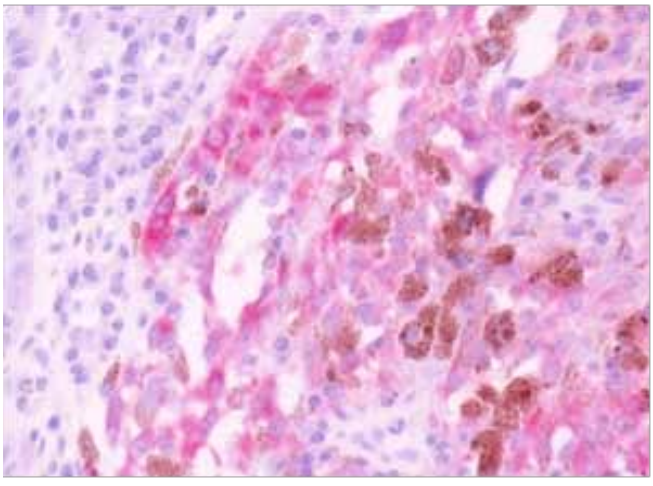

Fig.8: Strong immunopositve, HMB-45,10x.

Conclusion

Primary oral mucosal melanomas are exceedingly rare and its diagnosis is quite difficult as the lesion mimic many other pigmented lesions of the oral cavity. Early diagnosis via cytology and histopathology followed by immunohistochemistry should be done so as to result in better prognosis of the disease.

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