



## RESEARCH ARTICLE

### MALIGNANT MELANOMA OF PALATE: A RARE CASE

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#### ABSTRACT

Melanoma is malignant neoplasm of melanocytes and their precursor cells. It accounts for 5% of all cutaneous cancer. 30% of cutaneous melanoma arises in the head and the neck region. The most commonly affected intra-oral sites are palate and maxillary gingiva. Since most of the mucosal melanoma are usually asymptomatic in early stages and presents as pigmented patch or a mass the diagnosis is delayed until symptoms of swelling, ulceration, bleeding are noted. Herewith we report a case of intra-oral malignant melanoma in a 30 years old female patient.

## INTRODUCTION

Melanoma is malignant neoplasm of melanocytes and their precursor cells. It accounts for 5% of all cutaneous cancer. 30% of cutaneous melanoma arise in the head and the neck region. (Gnepp, 2009) 1-8% of melanomas arise in the oral cavity which accounts for 0.5% of all oral malignancies. (Sharman, 2012) Many oral melanomas are frank metastasize from trunk or cutaneous head and neck site. (Gnepp, 2009) Melanoma represents one of the most life threatening cancer known and the etiology of which is unknown. (Goel *et al.*, 2013) The clinical presentation of this condition shows lots of variation in size, shape, number, type of pigmentation and thus biopsy is mandatory. The prognosis is poor with 5 year survival rate of 4 – 20%. (Belhoucha *et al.*, 2014) The purpose of this article is to present a case of malignant melanoma which was diagnosed at our institute.

### Case Report

A 30 year old female patient reported to our institute with the chief complaint of swelling and pain in the upper right region of jaw. There was no significant history of any deleterious habit. The past medical and dental history was also not significant. The clinical examination revealed a brownish black colour swelling measuring 8 x 10 cm in size with irregular

borders extending from first premolar to retromolar area antero-posteriorly and midline of palate laterally with rough and ulcerated overlying mucosa. (Figure 1) On palpation the swelling was firm in consistency lymph nodes were palpable. The provisional diagnosis of lymphoma, melanoma and vascular lesion were made. An incisional biopsy was done. Histopathological examination revealed stratified squamous epithelium and connective tissue stroma. Sheets of large pleomorphic, round and spindle shaped cells of bizarre shape and size with eosinophilic cytoplasm containing brownish pigmentation were seen (Figure 2). Special staining with Masson Fontana and immunohistochemical staining with S - 100 protein were further carried and the diagnosis of malignant melanoma was confirmed (Figure 3).

## DISCUSSION

Borders extending from first premolar to retromolar area antero-posteriorly and midline of palate laterally with rough and ulcerated overlying mucosa. (Figure 1) On palpation the swelling was firm in consistency lymph nodes were palpable. The provisional diagnosis of lymphoma, melanoma and vascular lesion were made. An incisional biopsy was done. Histopathological examination revealed stratified squamous epithelium and connective tissue stroma. Sheets of large pleomorphic, round and spindle shaped cells of bizarre shape and size with eosinophilic cytoplasm containing brownish pigmentation were seen (Figure 2). Special staining with Masson Fontana and immunohistochemical staining with S -

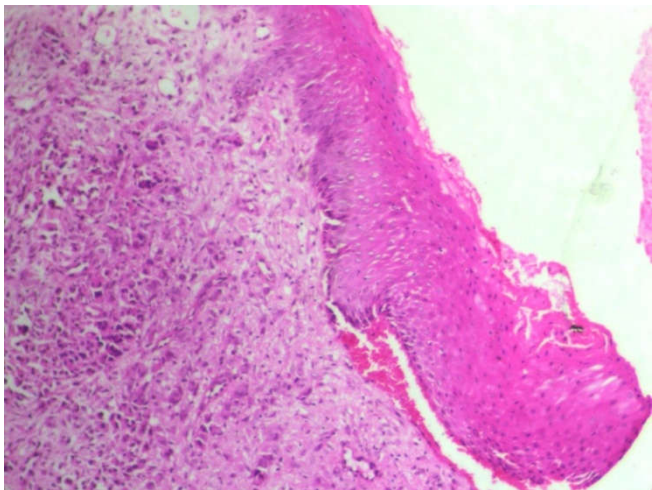
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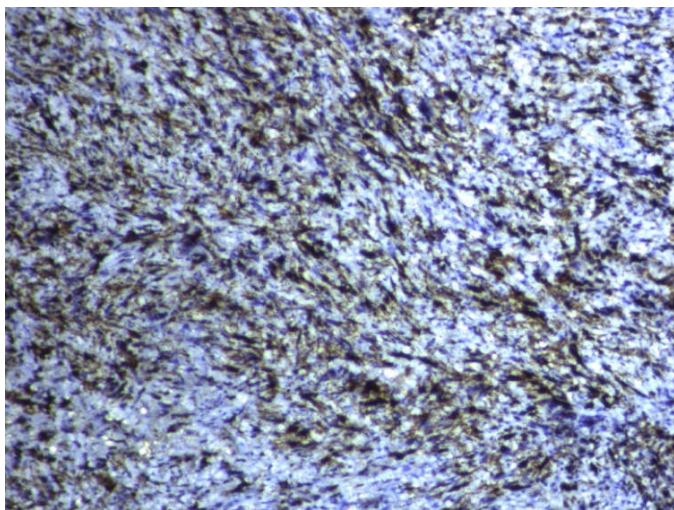
100 protein were further carried and the diagnosis of malignant melanoma was confirmed (Figure 3).



**Figure 1. Clinical photograph of case showing exophytic, ulcerated bluish black growth in right side of the maxilla and palate**



**Figure 2. Photomicrograph showing malignant melanocytes invading the basement membrane and proliferating in the connective tissue. (H & E -10 x)**



**Figure 3. Photomicrograph showing S-100 positivity**

(Gnepp, 2009; Fitzpatrick and Morelli, 2011) However several risk factors have been mentioned like genetic mutation, mechanical trauma, infection, oral habits, self medications, melanoma related antigen (gp-100, melan) and cytogenetic defect. (Sharman, 2012) Four of every five cases of intra oral malignant melanomas occur on palate and maxillary alveolar mucosa but any site can be affected. There is no gender predilection for oral malignant melanoma and the most commonly affected age group is 50-60 years but cases have been reported in teenagers also. (Gnepp, 2009) The initial signs and symptoms of oral melanoma are often a pigmented growth or swelling. The surface may be smooth, irregular with overlying mucosa is intact or ulcerated. The color of the lesion may vary from brown, black, red, gray, purple or sometimes even colorless or depigmented.

**Clinically oral melanoma can be classified into five types which are as follows**

1. Pigmented nodular
2. Non-pigmented nodular
3. Pigmented macular
4. Pigmented mixed
5. Non-pigmented mixed

Oral melanomas initially shows radial growth phase followed by vertical growth phase. The patient also complains of bleeding, ill-fitting dentures, pain, increased mobility of teeth, delayed healing of extraction socket. Oral melanoma shows metastasis even in the initial phase of disease because of its aggressive nature and abundant blood supply of oral cavity. (Sharman, 2012) Diagnosis of oral melanoma can be made clinically by using a criteria called 'ABCDE criteria'.

- A - Asymmetry
- B - Border irregular
- C - Color variation
- D - diameter > 6 mm
- E - Evolving (Fitzpatrick and Morelli, 2011; Goldstein and Goldstein, 2001)

Microscopically tumor is notorious for ability to mimic a wide range of other malignancies. This is especially true for amelanocytic melanoma. (Gnepp, 2009) Malignant cell often are arranged in nests, cluster, groups or in an organoid fashion. The melanoma cells have large nuclei often with prominent nucleoli and also show irregular nuclear membrane which gives appearance of pseudoinclusions. The abundant cytoplasm may be uniformly eosinophilic or optically clear. Occasionally the cells become spindle shaped in some areas which is interpreted as more aggressive feature, compared with the findings of the round or polygonal cell varieties. The intraepithelial component (radial growth phase) of superficial spreading melanoma is characterize by the presence of large, epithelioid melanocytes distributed in a so-called "pagetoid" manner. This pagetoid spread within the epidermis is sometimes known as "buckshot scatter". As long as malignant cells are confined to the epithelium, there is no host cell response in the underlying connective tissue. When melanocytes penetrate basement membrane, a florid host cell

response of lymphocytes develops. Macrophages and melanophages may be present. The tumor cells are often destroyed by this cellular response. The vertical growth phase is characterized by the proliferation of malignant epithelioid melanocytes in the underlying connective tissues. Melanin pigment is usually scanty. Nodular melanoma is also characterized by large, epithelioid melanocytes within the connective tissue. However, small ovoid and spindle-shaped cells may be present. Melanin pigment is invariably present. Tumor cells may invade and penetrate the deep soft tissues. Lentigo maligna is a defined histologic feature which has been discussed by Wayte, Helwig, Clark and Mihm. The lesion is characterized by increased number of atypical melanocytes within the basal epithelial layer. The epithelium is generally atrophic and the dermal collagen shows the effects of sun damage.(basophilic degeneration) If skin appendages are present, they are often invaded by melanocyte. With time, cords and nests of atypical melanocytes may be evident. Lentigo maligna melanoma is characterized by invasive spindled shaped cells into the underlying dermis. A lymphohistiocytic infiltrate is usually present. Acral lentiginous melanoma is histologically similar to lentigo maligna melanoma. Other less common variants of melanoma such as desmoplastic, neurotropic, spindle cell and balloon cell melanoma also exists. (Shafer *et al.*, 2012) Special staining with Masson Fontana and immunohistochemical staining with S-100, melan A, gp-100 (HMB-45) and MART-1 are significantly useful for confirming the diagnosis. (Belhoucha *et al.*, 2014) Radical surgical excision is the only treatment which is curative with early detection of lesion. Surgical removal of regional lymphnodes is recommended with histological depth

of invasion exceeding 1.24 mm. Overall prognosis of oral malignant melanoma is extremely poor and 5 year survival rate is 4-20% (Gnepp, 2009).

### Conclusion

Oral malignant melanoma is extremely rare and life threatening malignancy. It is difficult to diagnose it at an early stage due to great variation in its clinical presentation. Hence histopathological examination is mandatory for its diagnosis. Clinicians should consider oral malignant melanoma as one of the differential diagnosis in oral pigmented lesions as it mimic clinically with many other oral lesions.

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