

## Case Study

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### Oral Melanoma in a Non-Descript Bullock

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A five years old Non-descript bullock was brought to the veterinary dispensary vadamatimangalam, Thiruvannamalai District, Tamil Nadu with a history of oral mucous membrane swelling. Clinical examination revealed about 2cm diameter black colored mass was observed below the last incisor of left lower jaw region. The mass was removed by surgical intervention and sent to Department of Veterinary Pathology, Madras Veterinary College, Chennai- 600007 for histopathological examination. Grossly the mass was about 2cm in diameter, spherical black colored firm nodule with smooth surface. Microscopical examination revealed single to nest of neoplastic cells in the epithelium and lamina propria portion of the gingiva. The neoplastic cells were round to polygonal shaped cells with abundant cytoplasm contained brown black colored melanin pigment granules. Fontana silver impregnation method revealed the presence of black colored melanin pigment granules. The specific immunohistochemistry marker Melan-A was performed and showed strong expression in the neoplastic cell cytoplasm. Based on all the above finding the oral mass was confirmed as melanoma and it might be caused by sun exposure.

### Introduction

The Melanoma incidence in cattle is rare usually accounting for 5% to 6 % of all tumors (Miller *et al.*, 1995) and mostly occur in the skin. It is mostly seen in the epidermal-dermal junction of the skin, hair follicles and dermis followed by eye, meninges, adrenal gland, endocardial and edema of blood vessels (Pulley and Stannard, 1990). The present paper reports on the occurrence of melanoma in bullock in the region of oral

cavity particularly below the last incisor left lower jaw region.

### Materials and Methods

A Non-descript bullock aged about 5-year-old was presented in the veterinary dispensary, Vadamatimangalam, Thiruvannamalai District, Tamil Nadu with the history of swelling in the oral mucous membrane. Clinical examination revealed about 2cm diameter spherical black colored mass was

seen below the last incisor of left lower jaw region. The mass was surgically removed, and excised mass was sent to Department of Veterinary Pathology, Madras Veterinary College, Chennai- 600007 for histopathological examination to rule out any tumor. Excised mass was collected in 10% neural buffered formalin. The formalinized tissues were embedded in paraffin and cut into 4 to 6  $\mu\text{m}$  thickness and stained with Haematoxylin and Eosin (H&E) stain. The Fontana silver impregnation special staining was performed to rule out the presence of melanin pigment as per the procedure described by Bancroft and Gamble (2008). The immunohistochemistry was also

performed using specific marker of Melan-A as per the procedure described in commercial kit.

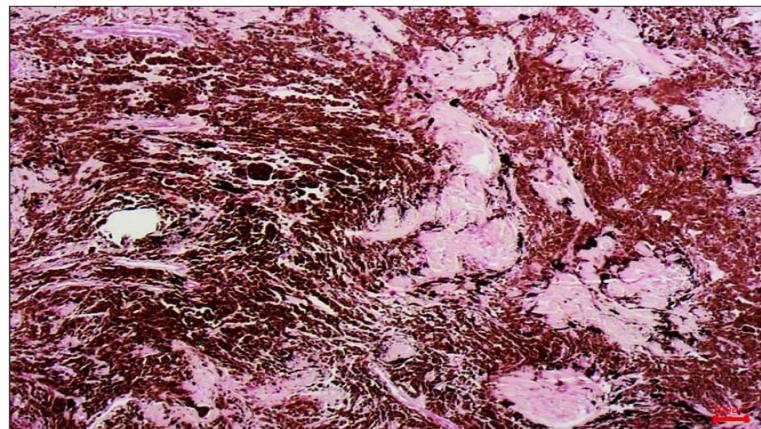
## Results and Discussion

Gross examination of the mass revealed the spherical black colored firm smooth nodule about 2cm in diameter was seen below the last incisor of left lower jaw region (Fig.1). Histological examination revealed single to nest of neoplastic cells in the epithelium and lamina propria portion of the gingiva (Fig. 2). Neoplastic cells were round to polygonal shaped with abundant cytoplasm.

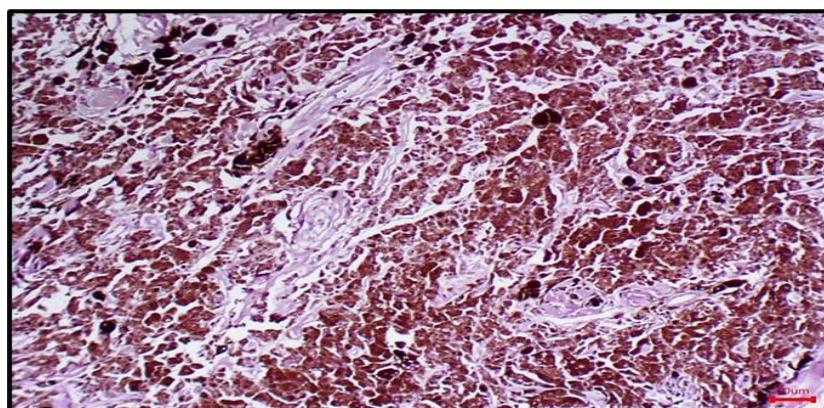
**Fig.1** Bullock- Melanoma- A spherical black colored firm smooth nodule of about 2cm in diameter was noticed on the last incisor of left lower jaw region



**Fig.2** Single to nest of round to polygonal shaped neoplastic cells with abundant cytoplasm contained black colored melanin pigment granules in the lamina propria portion of the gingiva  
Scale Bar H&E 100 $\mu\text{m}$



**Fig.3** Immunohistochemistry – Melan A - Strong immunolabeling in the cytoplasm of neoplastic melanocytes Scale Bar 50 $\mu$ m



The cytoplasm of the neoplastic cells contained brown black colored melanin pigment granules and in some areas the granules completely masked the cells. The nuclei were round to oval shaped with prominent nucleoli and irregularly clumped chromatin. Mitotic figures were also seen. Fontana silver impregnation method stained slides revealed the presence of black colored granules. Immunohistochemistry method using Melan-A revealed positive strong expression of brown colored reaction in the cytoplasm of the neoplastic cells (Fig. 3). Based on gross, histology, special staining and specific immunohistochemistry method, the oral mass was confirmed as melanoma.

The melanomas were recorded in cattle in the region of brisket (Pazhanivel *et al.*, 2003), outer thorax (Pravettoni *et al.*, 2003), flank (Sharma *et al.*, 2010), skin (Miller *et al.*, 1995) in different age groups. The present case was recorded in oral cavity below the last incisor of left lower jaw region and the oral cavity incidence of this case is in agreement with earlier reports (Brito *et al.*, 2009; Chandrashekaraiah *et al.*, 2013). The microscopical finding of the present case is in accordance with earlier reports (Miller *et al.*, 1995; Pazhanivel *et al.*, 2003; Pravettoni *et al.*, 2003; Brito *et al.*, 2009; Sharma *et al.*,

2010;Chandrashekaraiah *et al.*, 2013). A neoplastic focus was originating from the gingival epithelium and it was extended to the lamina propria of the gingiva indicated that invasion as one of the characteristic malignant feature of melanoma. The immune histochemical evaluation of melanoma using Melan-A in the present case revealed cytoplasmic positive reaction as a melanocytic marker for confirmation of melanoma is in agreement with earlier report (Beytut *et al.*, 2018). In the present case the incidence of melanoma might be due to sun exposure(Armstrong and Kricker, 2001).

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