
DIAGNOSIS AND SURGICAL MANAGEMENT OF METASTATIC MELANOMA IN A GERIATRIC DOG: A CASE REPORT

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ABSTRACT

Melanoma is a common type of neoplasia found mainly in white coated breeds of dogs and one of the most challenging conditions encountered in day-to-day veterinary practice. A 15 years old male intact Labrador Retriever was presented with a history of selective feeding, dysphagia, hyporexia and abnormal barking sound. The physical examination of oral cavity appreciated a black moist pedunculated pharyngeal mass. The clinical parameters were in normal range. The radiographic examination revealed multiple miliary nodules in the pulmonary area. On histopathological examination of the surgically resected mass, it was confirmed as Malignant Melanoma. The diagnosis and surgical resection of the mass was carried out which resulted in recovery of the dog.

Keywords: malignant melanoma, labrador retriever, dog

INTRODUCTION

Melanoma is a highly aggressive tumour that develops from pigment-producing cells (melanocytes). It is the most common cancer found within the oral cavity in dogs. (Esplin, 2008). They are characteristically rapidly growing, locally invasive tumors that metastasize early in the course of the disease (Esplin, 2008). The commonest site of incidence of the condition is in the oral cavity, mucocutaneous junctions such as the lips, vulva, and anal regions), and digit/nailbed. Canine cutaneous (skin) melanomas often are benign. Rarely cutaneous melanoma exhibits malignancy also. In dogs, oral malignant melanomas most commonly arise from the gingiva, but can originate from the palatine, labial or buccal mucosa (Harvey *et al.*, 1981). Melanomas often appear as pigmented masses that may start to bleed or ulcerate as they get larger. In some instances, the tumour may be amelanotic (without dark pigment), and

appear as pink colour. Melanoma should be a differential for any mass found within the mouth of a dog, though a tissue biopsy is required to confirm the presence of a melanoma. Even though there is no breed specificity for incidence, small breeds like cocker spaniels and miniature poodles were overrepresented with the condition. (Coyle *et al.*, 2009). The commonest site of incidence is (Veena *et al.*, 2012).

CASE HISTORY & OBSERVATION

A 15 years old male intact Labrador Retriever was presented with a history of selective feeding, difficulty in swallowing, progressive weight loss and cough. The animal was showing selective feeding and prefer liquid or semi-solid diet.

On general inspection, the animal was found to have an abnormal respiratory pattern (costo-abdominal) and dyspnea. The dog body condition was good but slightly dehydrated (5 per cent). Upon examination of the oral cavity, a large pedunculated blackish-brown moist mass was noticed at the pharynx (Fig1.1).

DIAGNOSIS & TREATMENT

Blood samples were collected for serological examination and blood profiling.

On fine needle aspiration of the oral mass showed highly cellular smear with

Table. 1 Hematology- completed blood count

| Parameters | Value |
|------------|-------------------------------------|
| TLC | 15.26 x 10 ³ /microlitre |
| HGB | 10.21 g/dL |
| RBC | 5.26 x 10 ⁶ /microlitre |
| HCT | 36.83 % |
| PLT | 419 x 10 ³ /microlitre |

Table. 2 Serum Biochemistry

| Parameters | Value |
|------------|-------------|
| Creatinine | 1.22 mg/dL |
| BUN | 26.32 mg/dL |
| ALT | 39.00 IU/L |
| ALP | 105.00 IU/L |
| Calcium | 9.2. mg/dL |
| Phosphorus | 5.62 mg/dL |
| AST | 26.00 IU/L |
| GGT | 2.3. IU/L |

large pleomorphic cells with a high nuclear to cytoplasmic ratio. The cytoplasm of the cells had greenish black granules which was also present in the background of the smear. The cells showed atypical features like anisocytosis, anisokaryosis, pleomorphic nucleus, prominent multiple nucleoli, and granules of variable sizes (Fig. 1.3).

On radiography of the lateral thorax, multiple military nodules were observed in the pulmonary area (Fig.1.2) which indicates malignancy. The oral mass was surgically resected under general anaesthesia. Animal was premedicated with Meloxicam (Melonex, Intas, India) @0.2mg/Kg SC & Tramadol (Supridol, Neon, India) @4mg/kg IM, Pantoprazole

(Pantop-40, Aristo, India) @ 1mg/kg, and Amoxicillin Sulbactam (Amoxirum-Forte, Virbac, India) @ 20 mg/kg intravenously. 15 minutes later sedation was achieved with a combination of Xylazine (Xylaxin, IIL, India) (1.5mg/kg) and Ketamine (Aneket, Neon, India) (@5mg/kg) intramuscularly. The base of the tumour mass was ligated with Catgut No.2. and the mass was resected. Post operatively Ceftriaxone (Intacef, Intas, India) was administered @ 20.0 mg /kg body weight intravenously and Meloxicam (Melonex, Intas, India) @ 0.20 mg/kg body weight subcutaneously for five days. Animal was maintained with intravenous fluids for 4 days.

Histopathological examination of the resected sample revealed anaplastic melanocytes in nests invading upper epidermis (Fig 1.4). Also showed considerable junctional activity at epidermal-dermal junction with downward streaming of anaplastic melanocytes from



Fig.1.1. A black nodular mass measuring 2.5cm x 3 cm size was observed in the oral cavity at the junction of hard palate and soft palate.



Fig.1.2. Right lateral thoracic radiograph revealed multiple miliary nodules throughout the lung parenchyma. This indicates pulmonary metastasis of the primary tumour.

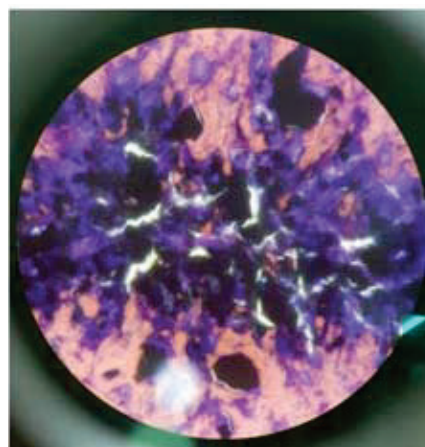


Fig.1.3. Greenish black granules in the cytoplasm of melanocytes.

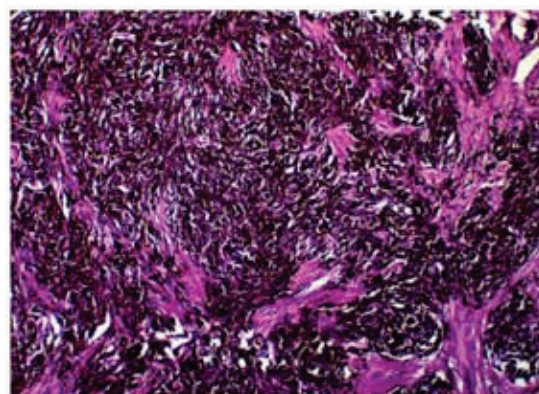


Fig.1.4. Anaplastic melanocytes in the nest invading upper epidermis and from epidermis into dermis.

epidermis into dermis. Moderate vascularity also noticed. The condition was diagnosed as Malignant Melanoma.

DISCUSSION

The cause of malignant melanoma in dogs is unknown. In humans, one of the main causes of this disease is exposure to sun, but this does not seem to be the case with dogs, who are protected by their fur and thick skin (Coyle *et al.*, 2009). Risk factors for the incidence of the condition include geriatric dogs, male dogs, certain breeds like Schnauzer, Doberman Pinscher, Springer Spaniel, Cocker Spaniel, Airedale, Boston Terrier, and Scottish Terrier). Melanoma is more common in White colour breeds than in dark coloured ones. Overall, melanoma is the fifth most common malignancy in companion animal medicine. The average age at diagnosis is 12 years. Most severe complications occur in cases of delayed diagnosis and treatment. Complications can include: secondary infection - resulting from disruption of the normal skin barrier, scarring - these can result from the lesion itself or treatments, lymphedema - most commonly occurs secondary to the removal of lymph nodes but can result from cancer alone., local recurrence - especially in cases that were more advanced before diagnosis, metastasis - more common with advanced cases, and melanomas and squamous cell carcinomas.

SUMMARY

A 15 years old male intact Labrador retriever was presented with a history of selective feeding and difficulty in deglutition. The pharyngeal mass was surgically resected under general anaesthesia and the condition was diagnosed as malignant melanoma employing radiographic and histopathologic techniques.

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