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Successful surgical management of basal cell carcinoma in a Labrador retriever dog (Lumpectomy)

Basiri Dinesh, Lella Lokesh, Racharla Srujan and M Sravanti

Abstract
A 7-year-old male Labrador retriever dog weighing 20 kgs was presented to Veterinary Clinical Complex, Rajendranagar with the history of swollen mass at the ventral aspect of neck region. On physical examination, the mass was round, solitary, firm and attached to skin by a stalk. The mass was tentatively identified as basal cell carcinoma with aid of fine needle aspiration cytology. Surgical excision of mass was performed under general anaesthesia. Histopathological examination revealed proliferation of small, round to polyhedral basophilic cells with hyperchromatic nuclei, indistinct cytoplasm and mitotic figures. Post-operative thoraco-abdominal radiography revealed no metastasis. The dog recovered uneventfully without any further complications.

Keywords: Surgical management, basal cell carcinoma, Labrador retriever dog

Introduction
Skin is the largest sense organ in the body and exposed to various extrinsic factors that predispose for neoplasia. Incidence of neoplasms in canines and felines are twice as frequent as in humans [1]. Cutaneous neoplasia are the most common neoplasms that a veterinarian encounter frequently in dogs and cats. Among canines, skin and mammary gland tumours are the most common occurring neoplasms [2]. Of all neoplasms of dogs and cats the most common were basal cell carcinoma and squamous cell carcinoma [3]. Basal cell carcinoma is also known as rodent's ulcer or Jacob's ulcer or hair-matrix carcinoma. This tumour arises from basal cells of hair matrix (trichoblastoma) or of sebaceous glands [4]. This tumour mostly occurs over head and neck due to direct exposure to sunlight [5]. It often appears as ulcerative mass over head and neck region. Incidence of basal cell tumours were also reported in other species such as rabbit [6-8], blue-fronted Amazon parrot [9] and tortoise [10]. In the present case, the diagnosis and surgical management of basal cell carcinoma in Labrador dog was reported.

Materials and Methods
A 7-year-old male Labrador dog weighing about 20 kgs was presented to Veterinary Clinical Complex, Rajendranagar, PVNRTVU with the history of swollen mass at the ventral aspect of neck region for a period of 3 months. On physical examination, the mass was round, solitary, firm and attached to skin by a stalk (Fig. 1) and marked vascularization (Fig. 2) was noticed. All the clinical parameters were within normal range. Haematological parameters showed mild anaemia. Serum biochemical parameters were within normal range. Based on fine needle aspiration cytology, the mass was tentatively diagnosed tumour. Surgical excision of mass was performed under general anaesthesia.

Surgical procedure
The dog was premedicated with atropine sulphate (@ 0.02 mg/kg bdwt, IM) and anaesthesia was induced with the combination of inj. xylazine (@ 1 mg/kg bdwt, IM) and inj. ketamine (@ 10 mg/kg bdwt, IM) and maintenance of anaesthesia was done by inj. propofol (@ 4.4 mg/kg, IV) to the effect. Standard preoperative measures were followed to avoid contamination. The dog was positioned on lateral recumbency and artery forceps were applied to the portion of the stalk close to the body to arrest bleeding from the extensive vasularization (Fig. 3). An elliptical skin incision was made 2 cms around the tumour (Fig. 4). Mass was carefully excised from the underlying tissues by blunt dissection (Fig. 5). Haemostasis was achieved using artery forceps. The surgical wound was closed by opposing the subcutaneous tissue with chromic catgut no 1/0 in subcuticular pattern (Fig. 6) and skin by nylon suture in cross

mattress pattern (Fig. 7). An excisional biopsy was sent for histopathological examination. Aseptic bandaging was performed over sutured site (Fig. 8).

Postoperatively, the dog was treated with an antibiotic (inj. ceftriaxone @ 20 mg/kg, IM for 5 days), NSAIDs (inj. meloxicam @ 0.3 mg/kg, IM for 3 days), multivitamin syrup and haematinics per orally for 30 days. Regular antiseptic dressing and bandaging was performed. Post-operative lateral thoraco-abdominal radiography revealed no metastasis. Sutures were removed on 10th postoperative day. Dog recovered uneventfully without any further complications.

Results and Discussion

Healing of sutured site was noticed on 7th post-operative day (Fig. 9) and hair growth was observed on 30th post-operative day (Fig. 10). Histopathological examination of excisional biopsy mass revealed proliferation of small, round to polyhedral basophilic cells with hyperchromatic nuclei and indistinct cytoplasm. Neoplastic basal cells exhibited pleomorphism and few mitotic figures. Histopathologically the biopsy was diagnosed as basal cell carcinoma (Fig. 11). Among all canine neoplasms, basal cell carcinoma accounts for 5-10% [11-16]. Occurrence is more common in age old dogs [11-14]. Body parts with the presence of short hair, glabrous skin and low skin pigmentation are highly susceptible to radiation exposure resulting in neoplasms [14-15]. Head, neck and forelimbs are the most common sites [11, 17-18]. Metastasis is extremely rare in case of basal cell carcinoma [19]. In present case, the dog was monitored regularly for a period of three months post-surgery revealed no signs of metastasis.

Fig 1: Swollen mass over ventral neck region

Fig 2: Vascularization of swollen mass

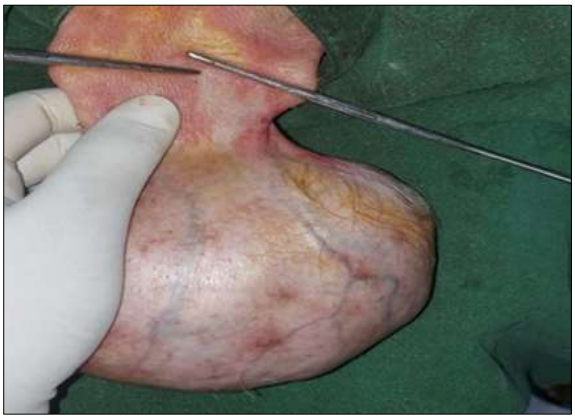

Fig 3: Application of artery forceps to the stalk close to the skin to promote haemostasis

Fig 4: Incision of skin

Fig 5: Incised swollen mass

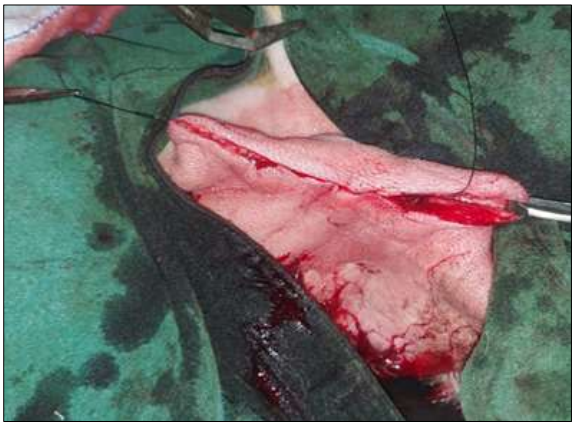

Fig 6: Incised Subcutaneous tissue was sutured in Subcuticular suture pattern

Fig 7: Closure of skin incision by cross mattress suturing pattern

Fig 9: Post- operative 7th day healing of sutured site

Fig 8: Application of bandage over sutured site

Fig 10: Post-operative 30th day Regrowth of hair over ventral neck region

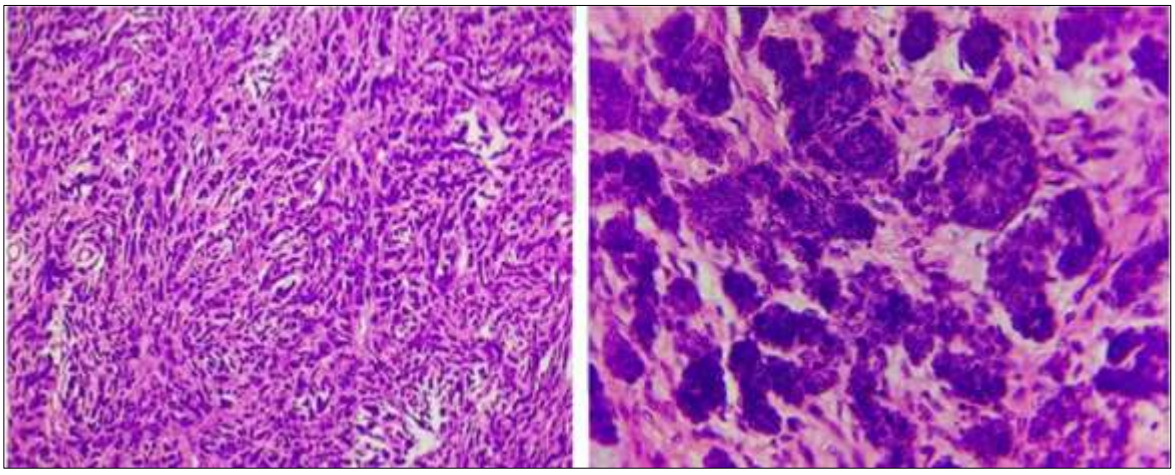

Fig 11 (H & E stain): Histopathological examination revealed proliferation of small, round to polyhedral basophilic cells with hyperchromatic nuclei and indistinct cytoplasm. The neoplastic basal ells exhibited pleomorphism and few mitotic figures. Histopathologically the biopsy was diagnosed as ‘‘Basal cell carcinoma’’

Conclusion

In conclusion, the basal cell carcinoma of ventral neck region of 7year old Labrador retriever dog was excised surgically. The dog recovered uneventfully without any further metastasis.

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