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Surgical management of oral squamous cell carcinoma in a Labrador dog

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Abstract

A 4-year-old male Labrador of 25 kg was presented to Veterinary Hospital, Bhoiguda, College of Veterinary Science, Hyderabad, P.V. Narsimha Rao Telangana Veterinary University with a history of hypersalivation since a month, bleeding from the mouth while eating, dull and inactive for 5 days with reduced food intake. On examination, a sublingual mass was observed along the floor of the buccal cavity at lingual frenulum. All the vital signs were normal. The haematological report showed no abnormalities. Surgical excision was the treatment opted. The buccal cavity was cleansed with betadine gargle solution after the dog was sedated with intramuscular atropine and xylazine combination @ 0.02 mg/kg BW and 1 mg/kg BW, respectively. Ketamine @10 mg/kg BW was given intramuscularly to induce anaesthesia. Anaesthesia was maintained by xylazine and ketamine combination @ 0.5 mg/kg BW and 2.5 mg/kg BW respectively, intravenously. The mass was resected with wide margins with the help of diathermy. Ligation was done using chromic catgut 1-0 where necessary. Suturing was done to close the defect by opposing the epithelial surfaces with chromic catgut 1-0. The resected mass was sent for histopathological examination. Post-operatively, ceftriaxone sodium @ 25 mg/kg and chlorpheniramine maleate @ 0.5 mg/kg were given intramuscularly for 5 days while meloxicam was given @ 0.3 mg/kg subcutaneously for 3 days. Daily mouth-wash with betadine gargle solution was done till 10th post-operative day. The animal recovered uneventfully. The histopathological examination revealed that the resected mass as squamous cell carcinoma.

Keywords: Oral squamous cell carcinoma, squamous cell carcinoma, labrador

1. Introduction

Squamous cell carcinomas (SCC) are epithelial tumours that develop in organs with stratified squamous epithelium or the skin [1, 2]. Cutaneous form of this tumour is common with about 5% of cutaneous tumours in dogs being SCCs [3, 4]. SCC is the second most frequent oral tumour in canines [5, 6]. It was reported that Shetland sheepdogs and English springer spaniels were overrepresented in a SCC study [7]. There is no age or sex predisposition noted in dogs with SCC [8].

Although metastases are rarely seen and only appear in advanced disease, SCC can be extremely invasive and destructive with a gradual loss of cutaneous tissue [7-15]. The lungs and regional local lymph nodes are the most prevalent sites for metastatic development [3, 4].

Surgery, chemotherapy, cryosurgery, radiation treatment, photodynamic therapy, or a combination of surgery and the other therapies have all been used to treat SCC [16-20]. The preferred treatment for these tumours is aggressive surgical resection, which can result in extended remission periods [16].

The present case discussed is a 4-year-old male Labrador presented with oral sublingual squamous cell carcinoma that has been successfully managed with wide surgical excision.

2. Materials and Methods

A 4-year-old male Labrador of 25 kg was presented to Veterinary Hospital, Bhoiguda, College of Veterinary Science, Hyderabad, P.V. Narsimha Rao Telangana Veterinary University with a history of hypersalivation since a month, bleeding from the mouth while eating, dull and inactive for 5 days with reduced food intake. On examination, a solitary, well circumscribed sublingual mass was present over the floor of the buccal cavity at the lingual frenulum (Fig. 1). There was bleeding from its surface and no pain on palpation. There was no involvement of the local lymph nodes. All the vital signs were normal. The haematological report showed no abnormalities. Surgical excision was the treatment opted.

The buccal cavity was cleansed with betadine gargle solution after the dog was sedated with intramuscular atropine and xylazine combination @ 0.02 mg/kg BW and 1 mg/kg BW, respectively. Ketamine @10 mg/kg BW was given intramuscularly to induce anaesthesia 10 minutes post sedation. Anaesthesia was maintained by xylazine and ketamine combination @ 0.5mg/kg BW and 2.5mg/kg BW respectively, intravenously. The mass was resected with wide margins with the help of diathermy (Fig. 2). Ligation was done using absorbable sutures of chromic catgut 1-0 where necessary. Interrupted sutures were applied to close the defect

by opposing the epithelial surfaces with absorbable sutures of chromic catgut 1-0 (Fig. 3). The resected mass was sent for histopathological examination (Fig. 4). Post-operatively, ceftriaxone sodium @ 25 mg/kg and chlorpheniramine maleate @ 0.5mg/kg were given intramuscularly for 5 days while meloxicam was given @ 0.3 mg/kg subcutaneously for 3 days. Daily mouth-wash with betadine gargle solution was done till 10th post-operative day. The animal was advised to be placed on liquid and semi-solid diet for 1 month. The animal recovered uneventfully (Fig. 5).



Fig 1: The animal when presented to the hospital, had a solitary well-circumcribed sublingual mass



Fig 2: The mass was resected with diathermy



Fig 4: The resected mass



Fig 3: the epithelial surfaces were opposed with interrupted absorbable sutures



Fig 5: On day-15 post-surgery

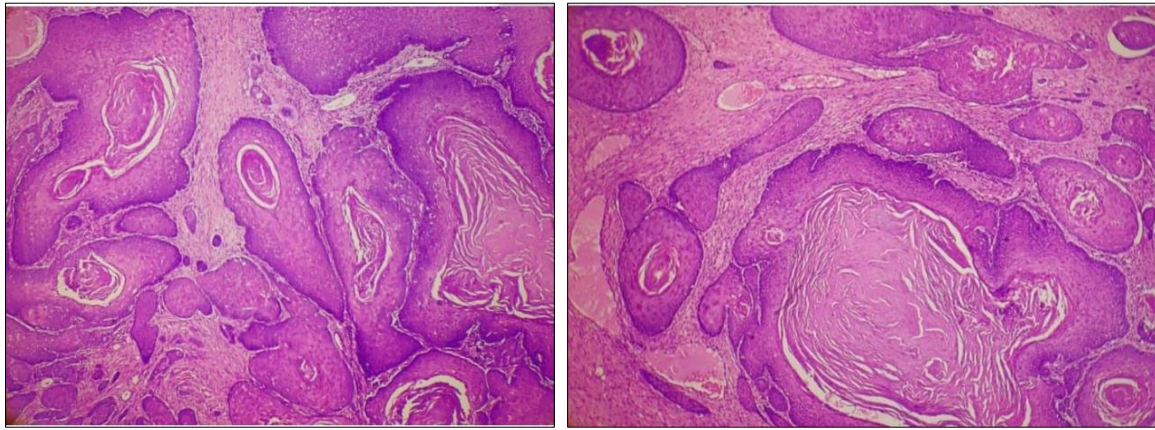


Fig 6: Histopathological examination revealed proliferating squamous epithelial nests forming numerous concentric keratin nodules (horn pearls) in the dermis. The neoplastic nests exhibited basal cell layer at the outer edge of the nest and keratin-producing layer in the center. Histopathologically the resected mass was diagnosed as "Squamous cell carcinoma".

3. Results and Discussion

Histopathologically the resected mass was diagnosed as squamous cell carcinoma (Fig. 6). There were no signs of regrowth or metastasis noted during the 3 months post surgery, when the dog was monitored. Metastasis is rarely reported in SCC and is usually seen in advanced stages [7]. The dog showed uneventful recovery.

Along with the systemic antibiotic, anti-inflammatory and antihistaminic therapy, topical oral cleansing helps in faster healing by reducing contamination and infection at the suture line. The animal was advised to be placed on liquid and semi-solid diet for 1 month to restrict the tongue and jaw movements which also aided in faster recovery.

In the present case the dog affected with oral SCC with sudden increase in the size of sublingual mass in a month's time. This is responsible for the discomfort in feeding, bleeding from the mouth while eating and hypersalivation. On examination, as the regional mandibular lymph nodes were not involved, the case had a good prognosis. Surgical excision is the treatment opted for oral masses, therefore the growth was excised and on histopathological examination, it was confirmed to be squamous cell carcinoma.

In the present case the dog affected with oral SCC is a 4-year-old male Labrador. SCC appears to affect predominantly (75%) the oral cavity of adult and old dogs [8]. There is no sex predisposition noted in dogs with SCC [8].

4. Conclusions

SCC is a common oral tumour of dogs. Early diagnosis and surgical treatment led to remission of SCC. Surgical resection with wide margins is the therapy of choice.

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