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Case Report

Epiglottic Chondrolipoma in a Dog

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Abstract

Canine laryngeal tumors are uncommon, often malignant and usually have a poor prognosis. Chondrolipoma is a subtype of benign adipocytic tumor frequently affecting the head and neck in people but has been rarely reported in dogs. In this case report, we describe a 9-year-old intact female Cocker Spaniel with a history of acute respiratory stridor due to a soft tissue mass located in the dorsolateral aspect of the epiglottis. A clinical staging was obtained by a total body computed tomography that defined the localized nature of the mass and excluded the presence of distant metastasis. Surgical excision was the treatment of choice and histopathology was consistent with chondrolipoma. To the best of our knowledge, this is the first report of canine laryngeal chondrolipoma.

Keywords: *Chondrolipoma; Dog; Laryngeal Tumour; Larynx; Epiglottis; Epiglottectomy*

Background

Cancer of the larynx is rare in dogs and cats with no breed or gender predilection.[1] Canine primary laryngeal tumours are more often malignant and include rhabdomyoma (oncocytoma), osteosarcoma, extramedullary plasmacytoma, chondrosarcoma, osteosarcoma, carcinoma, fibrosarcoma, mast cell tumour, adenocarcinoma, squamous cell carcinoma [1-4]; the most common benign neoplasia are granular cell tumour and lipoma [1,5-7]. Lipomatous lesions can be morphologically diverse and clinically range from benign to malignant in which lipomas are usually benign mesenchymal tumors. According to the World Health Organization (WHO), histological classification of human mesenchymal tumors of soft tissues and bone, adipocytic tumors may be of 11 different types [8] and chondrolipoma (CLA) is a subtype of benign adipocytic tumor often affecting the head and neck [9]. In the WHO classification of skin and soft tissues tumors of domestic animals, there are only two types of benign adipose tissue tumors reported: lipoma and angiolipoma [10]. Just few cases of CLA have been described in dogs: one was located between the peritoneum and the abdominal muscles [11], one in the intra-pelvic space [12], in a case report of 3 dogs, CLA were located respectively in the right lumbar region, in the left carpus and in the chest [6], one in the mammary gland [13] and more recently a CLA in the lingual frenulum.[14] This report describes an unusual case of canine CLA located on the epiglottis.

Case Presentation

A 9-year-old intact female Cocker Spaniel was referred to our hospital with an history of two weeks of upper respiratory noise, exercise intolerance, mild dysphagia and gagging. On physical examination only a mild discomfort of the larynx was noted on external palpation, with no other signs of respiratory distress or dyspnoea. In addition, a heart murmur was detected. An in dept inspection of the oral cavity and laryngeal region under general anaesthesia was planned in an attempt to find the cause of the reported signs.

Investigations

Complete blood count, biochemistry profile and coagulation profile were within normal limits, while the echocardiography revealed a mild mitral and tricuspid insufficiency. Under general anaesthesia we performed an oral exam that revealed the presence of a firm, mobile mass arising from the right dorsolateral margin of the epiglottis without adhesions to the surrounding structures (Figure 1). A total body computed tomography (CT) scan using a 2 slice multidetector unit (Bright speed, General Electric Medical Systems; Milwaukee) showed a 28 x 15 x 27 millimetres mass, with well-defined margins and moderate enhancement to contrast (Figure 2). No regional lymphadenopathy or other abnormalities were detected. A fine-needle aspirate (FNA) of the laryngeal mass was sent for cytologic evaluation but, unfortunately, the sample was non-diagnostic due to an insufficient number of cells present in the sample. Granuloma, abscess, cystic lesions as well as neoplasia were considered as differential diagnoses and a surgical excision of the mass was planned.

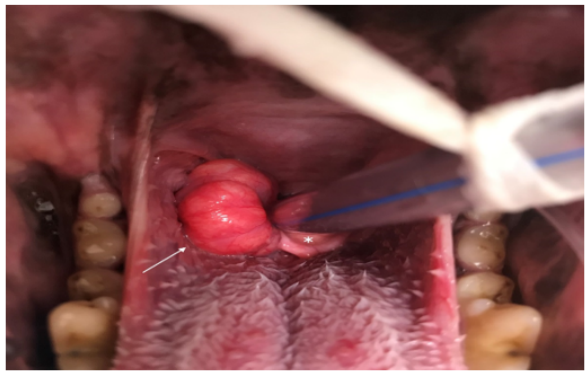

Figure 1: *Transoral view: the CLA (arrow) originating from the right lateral margin of the epiglottis (asterisk).*
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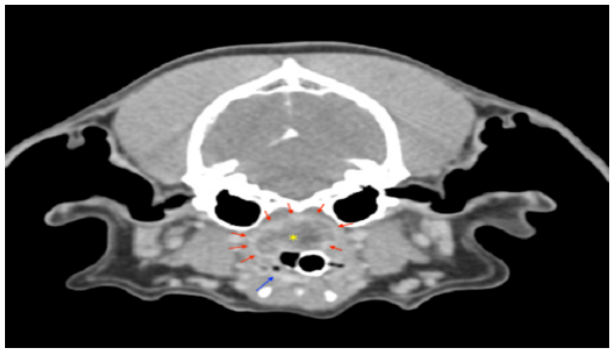

Figure 2: *CT sagittal view: CLA (asterisk) with well-defined peripheral margin (red arrows) and the epiglottic right side (blue arrow).*

Treatment

The tumor was surgically approached intraorally with the dog positioned in sternal recumbency. A sponge was positioned behind the larynx to prevent blood from the surgical site to collect and possibly clot within the trachea and lungs. The cartilage was incised with a surgical blade all around the base of the mass to the right border of the epiglottis. Two millimetres of margins were left from the tumor border to the incision line. The mucosal incision was deepened with scissors and the right side of the epiglottis removed en bloc with the mass (Figure 3). Bipolar forceps were used to control the mild bleeding. The surgical site was closed with a 6-0 absorbable suture (polydioxanone [PDS], Ethicon, USA) applied in a single interrupted pattern ventrally and laterally to the epiglottis. Most of the epiglottis was preserved. Supportive postoperative medications included cephalosporin and meloxicam. After resection, the entire mass was submitted for histopathology with the surgical margins inked (Figure 4). Histopathology was consistent with laryngeal CLA and mitotic figures were not evident.

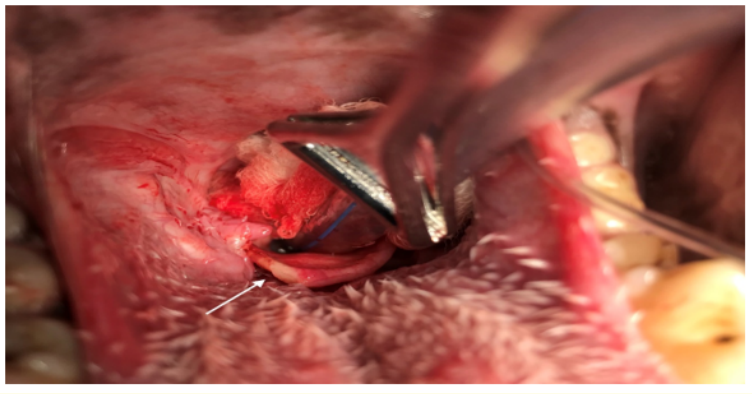

Figure 3: *Epiglottis appearance after tumor resection after partial right epiglottidectomy (arrow).*

Figure 4: *Excised CLA. The cutting edge include the right border of the cartilage epiglottis (arrow).*

Outcome and follow up

The dog was discharged 24 hours after surgery with complete resolution of reported clinical signs.

Follow up rechecks were done at 1, 3 and 5 months with clinical exams that were within normal limits and the owner reported a good quality of life. A CT scan and endoscopic exam were performed seven months after surgery and both exams showed no recurrence of the mass (Figure 5). One year post surgery, there are still no signs of mass recurrence and the epiglottis is within normal limits without loss of function.

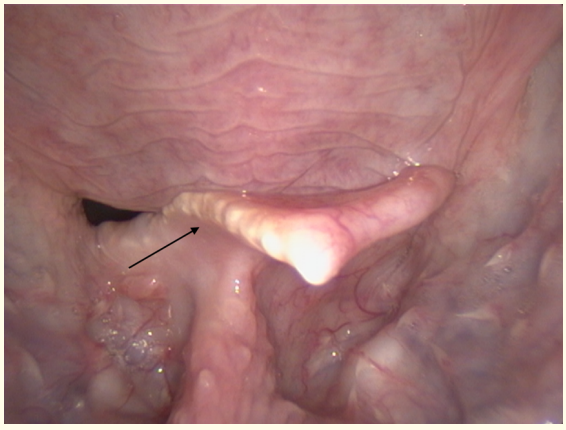

Figure 5: *Transoral endoscopic view at 7-month after surgery: the right border of the epiglottis removed (arrow) appears free from tumor recurrence and healty.*

Discussion and Conclusion

CLA is a rare and benign subtype of lipoma with several anecdotally described localizations in dogs [6,7,12-14]. CLA is composed predominantly of mature adipose tissue, with areas of chondroid metaplasia [11]. Two hypotheses have been proposed for the origin of cartilage in CLAs: the first is chondro-osseous metaplasia of the adipose tissue while the second is from pluripotential mesenchymal cells within the tumour. In the first hypothesis, the pathogenesis of this change in lipomas may be related to chronic local trauma. Chronic mechanical stress, repeated microtrauma and reduced blood supply can influence the development of chondroid or other forms of metaplasia within a lipoma [6,7,13,15,16]. In the present case report, CLA was located in the right lateral margin of the epiglottis and was therefore exposed to continuous trauma that could have been the cause of chondroid metaplasia. Surgery is usually the treatment of choice for laryngeal tumours, although not always feasible and not always curative due to the malignant nature of neoplastic lesions in this region. Before attempting surgical treatment, the neoplasia needs to be appropriately staged and if removable, a surgical plan is put in place especially for benign lesions. Among the surgical techniques described, partial or total epiglottidectomy are reported to be well tolerated by dogs without effects on laryngeal function [17,18]. Partial epiglottidectomy could be performed to alleviate the clinical signs and to collect a diagnostic sample. A diagnosis of a benign neoplasia will make the en bloc resection curative. In our case, the dog immediately showed an excellent response to partial epiglottidectomy and did not have altered swallowing or breathing, as well as no evidence of cough or gagging. The imaging workup performed 7 months after surgery showed no local recurrence or distant progression. Considering the benign nature of the tumour and the complete remission of the clinical signs at the one year follow up, the surgical procedure was

considered to be curative. Based on the current case and on the limited veterinary literature, surgery represent the treatment of choice of CLA, with excellent outcome and rare recurrence [6,7,11,13,19].

To the authors' knowledge, this is the first report of a primary CLA in the larynx of a dog. Although canine CLA is a rare variant of lipoma, it may be appropriate to include it in the WHO histological classification of mesenchymal tumors of the skin and soft tissues of domestic animals.

Learning Points/Take-Home Messages

- Laryngeal tumors are mostly malignant but rare benign forms are described.
- Chondrolipoma is a rare benign tumor never described in the larynx of dogs.
- Surgical excision is the treatment of choice for chondrolipomas with a favourable outcome.
- Partial epiglottectomy is well tolerated and usually causes no functional damage.

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