Salivary gland adenoma in a cow- a case report

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Abstract

This report presents a rare salivary gland adenoma in a cow. A 5-year old cross bred cow was presented with the history of drooling of saliva since one month along with dysphagia. On physical examination, facial symmetry and jaw tone was normal. Pharyngeal palpation was normal however there were palpable bilateral submandibular masses/glands. Vital parameters were in normal range. Fine needle aspiration cytology (FNAC) from the salivary gland showed significant number of small and big clusters of cells, some of which were highly cellular with prominent nuclei and scanty cytoplasm. Mild to moderate nuclear pleomorphism was observed. Based on the signalment, anatomic location, and cytologic findings, salivary gland adenoma was diagnosed. Although rare in cattle, salivary gland adenoma/adenocarcinoma should be considered in the differential diagnosis of diseases showing drooling of saliva and dysphagia.

Keywords: Cow, Salivary gland, Adenoma

Salivary gland tumors (SGTs) are a heterogeneous group of neoplasms that present complex morphological appearance, sometimes making the diagnosis difficult (Jones *et al.*, 2008). In contrast to the importance of salivary gland neoplasms in humans (Zajicek and Eneroth, 1970), these neoplasms are infrequent in laboratory and domestic animals. They are a rare occurrence in animals, but cases have been described in several species (Uzal *et al.*, 2016). Nevertheless, they are considered a very rare cancer in bovines (Lucena *et al.*, 2011). SGTs most often occur in older animals (Head *et al.*, 2002). The main clinical signs are swelling of the affected gland, pain, halitosis, dysphagia, and exophthalmia. Metastasis in regional lymph nodes or other organs is common, especially in the lung (Uzal *et al.*, 2016).

Salivary gland tumors in cattle were mostly diagnosed on the basis of histopathology (Bundza, 1983; Salgado *et al.*, 2012) however, descriptions of such neoplasias by FNAC are rare. The absence of cytologic descriptions complicates the diagnosis of these tumors, especially when they have a high degree of malignancy. The anatomopathological examination may confirm the diagnosis of salivary gland adenocarcinoma with metastases (Queiroz *et al*., 2018). In the present communication, ante-mortem diagnosis of salivary gland adenoma was made without any invasive/surgical procedure.

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Case History and Clinical Observations

A 5-year old cross bred cow was presented with the history of drooling of saliva since one month along with dysphagia. The animal was bright with normal appetite, urination and defecation. On physical examination, facial symmetry and jaw tone was normal. Oral examination showed normal dentition with no remarkable abnormality. Pharyngeal palpation was normal; however there were palpable bilateral submandibular masses/glands. Superficial lymph nodes were normal on palpation. Rectal temperature (99.8ºF), respiration rate (24 breaths/min), heart rate (60 bpm) and ruminal motility (5/3 min, rumen doughy) were all in normal range.

Blood sample was collected for hematology to rule out systemic invovelment. Fine needle aspiration cytology (FNAC) from the palpable submandibular glands and pre scapular lymph nodes was performed. The smears were stained with Leishman's stain for cytologic analysis.

Hemoglobin was recorded as 9.2 g/dl with no remarkable change in TLC (12300 cells/cu mm) and DLC (39 % neutrophils, 61 % lymphocytes). FNAC showed significant number of small and big clusters of cells, some of which were highly cellular with prominent nuclei and scanty cytoplasm. Mild to moderate nuclear pleomorphism was observed. However, FNAC of prescapular lymph nodes showed normal cells without any pleomorphism. Based on the signalment, anatomic location, and cytologic findings, salivary gland adenoma was diagnosed. The animal was given oral prednisolone for a week with mild response. The owner was explained

about the prognosis.

Discussion

This paper reports a rare case of salivary gland adenoma in an adult cross bred cow. They are a rare occurrence in domesticated animals, but cases have been described in cats and dogs (Uzal *et al.*, 2016, Koestner and Buerger, 1965) and horses (Koestner and Buerger, 1965). Nevertheless, they are considered a highly rare cancer in bovines (Lucena *et al.*, 2011). Lucena *et al.* (2011) studied the records of 6,706 necropsy examinations in cattle over a period of 45 years retrospectively, with the identification of 586 cases of cancer with no case of SGT.

Although, salivary gland tumours have been recorded in older animals (Head *et al.*, 2002, Queiroz *et al*., 2018), the present case was observed in a middle aged cow. Queiroz *et al*. (2018) reported increased volume in the right parotid region extending to the submandibular region in a cow with parotid gland adenocarcinoma. Mazzullo *et al.* (2005) also stated a gradual increase in volume and/or the presence of a painless mass in the region of the salivary gland as clinical signs of SGTs in cats. In the present case, there was no apparent abnormality or mass, but palpable submandibular masses/glands. Bundza (1983) also reported no apparent abnormality in ante mortem diagnosis and primary salivary gland neoplasm was confirmed on post mortem. The absence of manifestation of increase in volume in present cow was attributed to early presentation of the cow with history of salivation from one month only. Primary clinical manifestation in the present cow was drooling of saliva and dysphagia which were also observed by Queiroz *et al*. (2018). However, weight loss was not informed by the owner in the present case.

Hematology showed no significant change in this cow. In contrast, Queiroz *et al.* (2018) observed chronic leukogram due to chronicity of the tumour. FNAC has been stated as a useful test to diagnose changes in salivary glands, being a fast technique and easy to apply (Sauer *et al.*, 1992). The present case was diagnosed for salivary gland adenoma based on clinical manifestations and FNAC. Malignant characteristics were observed in the FNAC smear. FNAC does not often allow diagnosis with well-established classification unlike histopathology which can confirm the origin of the injury (Whitney and Berent, 2010). Histopathology could not be performed in the present case due to non availability of external mass. Bundza (1983) reported metastasis of primary salivary gland tumour as masses in internal lymph nodes. In the present case, lymph node aspirate from prescapular lymph nodes showed no changes ruling out metastasis.

This report on salivary gland adenoma suggests that salivary gland adenoma/adenocarcinoma, even though rare in cattle, should be considered in the differential diagnosis of diseases that occur with drooling and dysphagia in this species. Although, the histological and immunohistochemical characterizations of this type of tumor in cattle are central to confirm the diagnosis, but simple and rapid FNAC technique along with progression of clinical signs can aid in the diagnosis and prognosis of condition. Corticosteroids can be tried for medical intervention.

References

Bundza, A. 1983. Primary salivary gland neoplasia in three cows. *J. Comp. Pathol.*: **93**: 629-32.

Head, K., Else, R. and Dubielzig, R. 2002. Tumors of the alimentary tract. In: Meuten, D.J. (Ed.). *Tumors in domestic animal*s. 4th edition, Ames: Iowa State Press, pp. 410-16.

Jones, A.V., Craig, G.T., Speight, P.M. and Franklin, C.D. 2008. The range and demographics of salivary gland tumours diagnosed in a UK population. *Oral Oncol.:* **44**: 407-17.

Koestner, A. and Buerger, L. 1965. Primary Neoplasms of the Salivary Glands in Animals Compared to Similar Tumors in Man. *Path. Vet.:* **2**: 201-26

Lucena, R.B., Rissi, D.R., Kommers, G.D. *et al*. 2011. A retrospective study of 586 tumours in Brazilian cattle. *J. Comp. Pathol.:* **145**: 20-24.

Mazzullo, G. Sfacteria, A. and Ianelli, N. *et al*. 2005. Carcinoma of the submandibular salivary glands with multiple metastases in a cat. *Vet. Clin. Pathol.:* **34**: 61-64.

Queiroz, P.J.B., Queiroz, T.D., Magalhães, P.L., Borges, N.C., Martins, D.B., Moura, V.M.B.D. and Silva, L.A.F. 2018. Parotid gland adenocarcinoma in a cow: case report. *Arq. Bras. Med. Vet. Zootec.:* **70(3)**: 758-66

Sauer, T., Freng, A. and Djupesland, P. 1992. Immediate interpretation of FNA smears from the head and neck region. *Diagn. Cytopathol.*: **8**: 116-18.

Uzal, F.A., Plattner, B.L. and Hostetter, J.M. 2016. Salivary gland. In: MAXIE, M.G. (Ed.). *Jubb, Kennedy & Palmer's pathology of domestic animals*. 6.ed. Missouri: Elsevier, v.**2**: 28-30.

Whitney, M.S. and Berent, L.M. 2010. The cytology of neoplasia. In: Henry, C.J.; Higginbotham, M.L. (Eds.). *Cancer management in small animal practice*. Maryland Heights: Saunders Elsevier, 47-58.

Zajicek, I. and Eneroth, C.M. 1970. Cytological diagnosis of salivary-gland carcinomata from aspiration biopsy smears. *Acta Otolaryng.:* **263**: 183-85.

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