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Apocrine adenoma and its surgical excision in a labrador retriever dog: A case report

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Abstract

A seven years old, female labrador retriever dog was presented with the history of swelling near right shoulder region since eight months. On physical examination, a hard mass was palpated cranial to scapular spine of right forelimb. Radiographic findings include calcified soft tissue growth cranial to right scapula at level of fifth-sixth cervical vertebrae and there were no signs of bony involvement. Complete blood count and serum biochemistry revealed normal hemato-biochemical parameters. The surgical excision of tumor was done under general anaesthesia. Histopathological examination of excised mass revealed apocrine adenoma. Post-operative follow-up was done for three months and there were no signs of recurrence.

Keywords: Apocrine adenoma, scapular spine, cervical vertebrae, eosinophilic cytoplasm

Introduction

The adnexal tumors of skin including apocrine tumors are more common in canines and found rarely in horses and felines (Jasik *et al.*, 2009) ^[5]. Apocrine sweat gland tumors in dogs contribute approximately 0.7-2.2 percent of all the neoplastic conditions associated with the skin (Elemir *et al.*, 2003) ^[3]. An around 70 percent canine apocrine sweat gland tumors are benign in nature and certain breeds like Golden retriever are predisposed to the malignancies (Nibe *et al.*, 2005; Souza *et al.*, 2006) ^[9,10]. Approximately 1.7 percent epithelial tumors in dogs are apocrine carcinomas. Apocrine tumors are generally accounted in age group between 8 to 11 years and there are no sex predisposition in dogs. Apocrine gland adenoma is often found in the head, neck and limbs of the dogs. The axillary and inguinal area are the most preferred sites for malignancy in apocrine glands (Meuten, 2008) ^[8]. These tumors are often encountered as lymph nodules, multilobulated or cystic, underneath the subcutaneous tissue, which are poorly demarcated and ulcerate in later stages. These tumors often can be of mixed type and differentiation between benign and malignant apocrine gland tumors is quite difficult (Kheirandish *et al.*, 2015) ^[7]. During malignancies, apocrine gland tumors can spread through hematogenous or lymphatic route (Baharak *et al.*, 2012) ^[1]. The present case report deals with a case of apocrine adenoma and its surgical management in a dog.

Materials and Methods

A seven years old, female labrador retriever dog weighing around 18 kilograms, was presented to OPD of Department of Veterinary Surgery and Radiology, Veterinary college, Hebbal, Bengaluru. The dog had a history of swelling near right shoulder region for the past eight months. Physical examination revealed hard mass cranial to scapular spine of right forelimb and no pain was evident on palpation. A ventro-dorsal view radiograph of neck with both forelimbs stretched backwards showed the presence of calcified soft tissue growth cranial to scapula of right forelimb at the level of 5th-6th cervical vertebrae with no signs of any bony involvement (Fig. 1). Complete blood count and serum biochemistry revealed normal hemato-biochemical parameters. It was determined that surgical excision of tumor was necessary.



Fig 1: Radiograph showing calcified soft tissue mass cranial to scapula of right forelimb

Anaesthetic protocol involved preanaesthesia with Inj. Atropine sulphate at 0.04 mg/kg body weight along with Inj. Xylazine at 1mg/kg body weight administered intramuscularly. Pre-operatively Inj. Ceftriaxone at 25mg/kg body weight and Inj. Meloxicam at 0.2mg/kg body weight were administered intravenously. Anaesthesia induction was achieved using Inj. Thiopentone sodium (2.5%) administered intravenously and maintained with Inj. Thiopentone sodium to the effect.

Surgical site was prepared aseptically using Povidone iodine scrub solution (7.5%) and surgical spirit. Then surgical site was smeared with 5% Povidone iodine solution. A linear incision was made on the tumor and subcutaneous tissue was dissected (Fig. 2). Tumor was separated from its attachments by blunt dissection and excised along with 1-2 cm margin of healthy tissue. Superficial blood vessels were cauterized with monopolar electrocautery and blood vessels were ligated using Chromic catgut No. 1. Subcutaneous tissue was sutured using Chromic catgut No. 1 in simple interrupted pattern. Skin was sutured using Polyamide No. 0 in a horizontal mattress pattern. Surgical site was applied with povidone iodine ointment and bandaging was done. Pressure bandage was applied. The excised tumor was measured using measuring scale (approximately 10cm x 7.5cm) (Fig. 3). The excised tissue samples were collected in 10% neutral buffered formalin (NBF) for histopathological examination. Histopathology revealed presence of apocrine gland-like structures lined by a single layer of cuboidal epithelium with an abundant granular eosinophilic cytoplasm and small basally located nuclei. The cells exhibited decapitation secretion (Apocrine blebs on the luminal surface) and accumulation of an eosinophilic secretory product in the glandular lumina suggestive of apocrine adenoma (Fig. 4).



Fig 2: A linear incision was made on the tumor



Fig 3: The excised tumor was measured using measuring scale

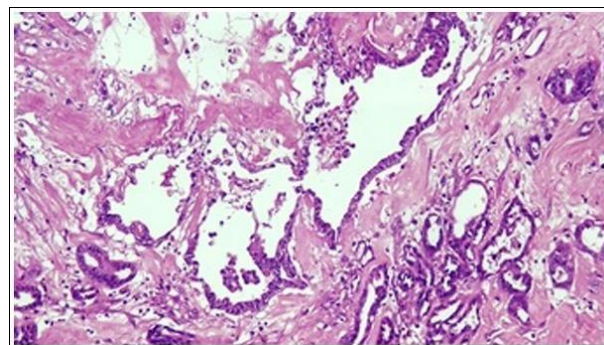


Fig 4: Histopathology suggestive of apocrine adenoma

Post-operative management included oral antibiotic, Cephalexin at 25mg/kg body weight BID for 7 days and analgesic, Carprofen at 2.2mg/kg body weight BID for 3 days were prescribed. Alternate day wound dressing was done.

Results and Discussion

On 14th post-operative day, sutures were removed. The animal was recovered uneventfully. Post-operative follow-up was done for three months and there were no signs of recurrence. Apocrine glands were the major type of sweat gland in dogs, and the distribution of eccrine sweat glands was limited to the footpad. Apocrine sweat gland tumors were rather common in dogs and tend to occur on the head, neck, and limb. The Golden Retriever was a breed that shows a predisposition to such tumors (Kalahar *et al.*, 1990) [6]. Approximately 70% of canine apocrine tumors were benign in nature, but malignant ones tend to recur locally and metastasize to regional lymph nodes and the lungs. The recent World Health Organization classification categorizes apocrine sweat gland tumors in domestic animals into adenoma/carcinoma, complex or mixed adenoma/carcinoma (or both), and ductal adenoma/carcinoma (Goldschmidt *et al.*, 1998) [4]. Patients usually present with a slow-growing skin mass which can be either firm or cystic in consistency. Histopathology and immunohistochemistry were required to diagnose cutaneous apocrine adenoma/carcinomas. Characteristic histopathologic findings include decapitation secretion and accumulation of an eosinophilic secretory product in the glandular lumina. The only curative therapy for localized apocrine gland adenoma/carcinoma involves local excision along with regional lymph nodes. Radiation therapy and chemotherapy was also considered for moderately or poorly differentiated tumors (Chamberlain *et al.*, 1999) [2]. One of the agents reported to produce good chemotherapy result is 5-Fluorouracil and a case with complete response to this drug was reported by Swanson *et al* (1989) [11].

Conclusion

Apocrine adenoma, though uncommon, should be considered as a differential diagnosis for slow-growing, firm subcutaneous masses in dogs, especially in the head, neck, and limb regions. In the present case, radiography and histopathology played a crucial role in confirming the diagnosis. Complete surgical excision with adequate margins proved to be an effective and curative treatment. The absence of post-operative complications and recurrence during the three-month follow-up highlights the favourable prognosis of benign apocrine tumors. Early diagnosis and prompt surgical management are essential to achieve optimal clinical outcomes.

Conflict of Interest

Not available

Financial Support

Not available

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