
ADENOMA OF THE NICTITANS MEMBRANE GLAND IN A DOG: – A CASE REPORT

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ABSTRACT

A Ten-year-old male non-descript dog weighing 14.5 kg was presented to the Teaching Veterinary Clinical Complex (TVCC), Pookode, with the history of a mass protruding at the medial canthus of left eye with epiphora for the past few months. Physical examination revealed a bright pink mass with the surface ulcerated. Due to its chronic nature and ulcerative appearance, surgical resection was resorted to. Histopathology revealed variably sized tubular glands and inflammation and confirmed the condition as adenoma of the nictitans membrane gland. Animal recovered uneventfully.

Keywords: Adenoma, Canine, histopathology, Nictitans membrane gland

INTRODUCTION

Adenoma of the nictitans membrane gland (NMG) is infrequently reported. Neoplasia of the gland of the third eyelid is uncommon in dogs (Wilcock *et al.*, 2002;

Dubielzig *et al.*, 2010) and histopathological diagnostic criteria for these tumours have not been established adequately. The third eyelid – nictitans or nictitating membrane lies in the ventro-medial orbit of dogs, cats, and horses, where it physically protects the cornea and acts like a wind shield wiper to distribute pre-corneal tear film. Also, the third eyelid comprises of a T-shaped piece of cartilaginous skeleton, conjunctiva covering the bulbar and palpebral surfaces, numerous superficial lymphoid follicles under the bulbar surface and a large sero-mucoid gland surrounding the base of the cartilage responsible for 25% to 40% of tear production. Frequent abnormalities of the third eyelid are protrusion, eversion of the nictitans cartilage, prolapse of the nictitans gland (“cherry eye”), foreign bodies behind the nictitans, enlargement of the gland of the third eyelid due to neoplasia or cyst formation, and hyperplasia of the bulbar lymphoid tissue (follicular conjunctivitis) (Dees *et al.*, 2016).

CASE HISTORY AND OBSERVATION

A 10-year-old male non-descript dog weighing 14.5kg was presented to Teaching Veterinary Clinical Complex, Pookode, with the history of a mass protruding at the medial canthus of left eye with epiphora for the past few months. Physical examination revealed a bright pink mass with the surface ulcerated due to the prolonged exposure (Fig. 1). Here the only possible option was surgical removal of the protruded mass, since the mass was huge, chronic and ulcerated, treating or repositioning of the mass was not a choice. The physiological parameters were normal. Results of a complete blood count (CBC) and a serum biochemical analysis were within the laboratory reference ranges. Surgical resection was resorted to. The animal was premeditated with glycopyrrolate @ 0.01 mg/kg body weight intramuscularly and tramadol @ 3mg/kg body weight intramuscularly. General anaesthesia was induced using combination of midazolam @ 0.2 mg/kg body weight intravenously and propofol @ 4 mg/kg body weight intravenously “to effect” and maintained using 1.2 - 1.6% isoflurane in 100% oxygen using a rebreathing circuit. The animal was positioned on lateral recumbency with affected eye up. The eye was irrigated with 0.5 percent povidone iodine solution and draped. The mass was

surgically removed by applying a series of haemostatic sutures using 5-0 polyglycolic acid suture at the base after clamping (Fig. 2-4). On measuring the mass was found to be 20 mm X 23 mm in size (Fig. 5). The biopsy samples were submerged in neutral buffered 10% formalin processed for paraffin embedding, sectioned and stained with haematoxylin and eosin (HE), for histopathological examination.

TREATMENT AND DISCUSSION

Routine post-operative therapy was given with flurbiprofen eye drops (one drop twice a day), gatifloxacin eye drops (one drop thrice a day) and Refresh®tears eye drops (one drop twice a day). The animal had an uneventful recovery. Impression smears from the removed mass were made and stained with Romanowsky stain for cytological examination. The cellular component was composed of monomorphic population of epithelial cells arranged primarily in clusters. The nuclei were round - to- slightly oval with finely reticulated chromatin and inconspicuous nucleoli. Histopathology of the mass revealed multiple variably sized and shaped glands lined by a single layer of cuboidal epithelium. Lining epithelial cells showed minimal to no variation in size and shape. The glands were separated by considerable amount of stroma (Fig. 6). Hence, the condition was confirmed as adenoma of



Fig. 1. Protruded tumor mass from the left eye prior to surgery



Fig. 2. Tumor mass was clamped at the base using an artery forceps



Fig. 3. Applying a series of haemostatic sutures at the base of the tumor mass



Fig. 4. Cutting the tumor mass using a BP blade



Fig. 5. Mass was measured to be 20 mm X 23 mm in size

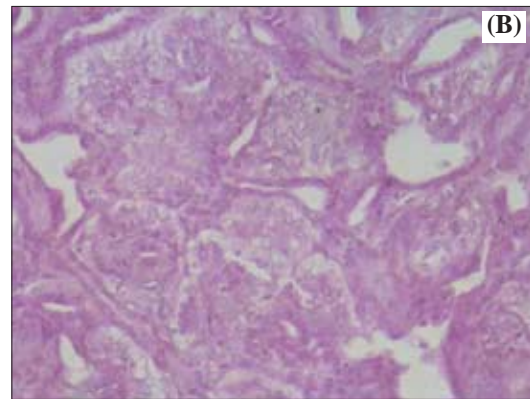
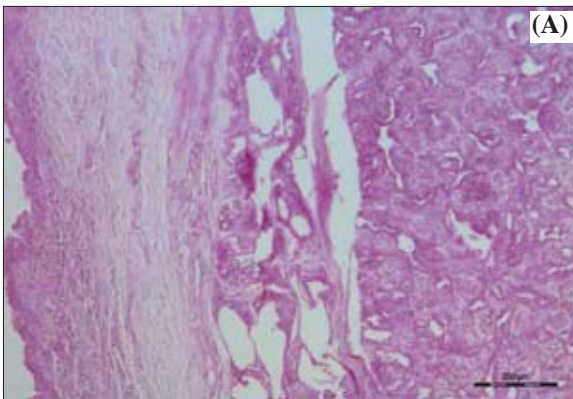


Fig. 6. Histopathological examination: (A) Variably sized tubular glands (H&E, 100X) with a single layer of cuboidal epithelium (B) (H&E, 400X)

the NMG. Microscopical examination also revealed evidence of inflammation. Thus, the condition was differentially diagnosed from squamous cell carcinoma of the NMG and prolapse of the third eye lid. The complication of the present surgery was keratoconjunctivitis sicca, for which artificial tear drops has to be administered externally. Dees *et al.* (2016) conducted a retrospective study of 145 cases having third eyelid gland neoplasm of dogs and cats, and found out that adenocarcinoma is the most common tumor found in the NMG of canine and feline species, followed by adenomas. Majority of the neoplasms originate from the surface tissues (conjunctival and lymphoid tissues) or the stroma of the substantia propria. Surgical resection is warranted when abundant vascularization or superficial irritation are seen (Willis and Wilkie, 2001). Adenomas were characterized by recognizable features of neoplastic glandular epithelium and well-delineated margins. Surgical margin was classified as complete. Recurrence rate is very less in comparison to other tumors of NMG. Histopathology forms the standard for differentiating different tumors of NMG.

SUMMARY

A case of adenoma of the nictitans membrane gland in a 10-year-old male non-

descript dog, with a bright pink ulcerated mass protruding at the medial canthus of left eye with epiphora is described. Histopathology of the ulcerative mass formed the gold standard in differentiating the case in the said case report. Animal recovered uneventfully

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