Indian J. Vet. Pathol., 49(1) : 99-101, 2025: DOI: https://doi.org/10.5958/10k8zh08

CASE REPORT

Corneal dermoid in a dog

N. Umeshwori Devi*, Deepshikha Singh and Geeta Devi Leishangthem[1]
Department of Veterinary Surgery and Radiology, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Science University, Ludhiana-141 004, India, [1]Department of Veterinary Pathology

Address for Correspondence
N. Umeshwori Devi, Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Science University, Ludhiana-141 004, E-mail: umeshwori.nameirakpam@gmail.com

Received: 10.10.2024; Accepted: 8.11.2024

ABSTRACT

A 1 year old Shih Tzu dog weighing 5 kg was presented with a complaint of abnormal hair growth in the right eye. Ophthalmic examination revealed a round black coloured hairy lesion on the surface of cornea and bulbar conjunctiva, measuring around 5 mm in diameter in the superior temporal quadrant of the right eye. Superficial keratectomy of the corneal lesion was performed under general anaesthesia. Microscopically, the histopathology of the tissue revealed the presence of an outer stratified squamous epithelium lining and numerous sebaceous glands along with hair follicles and sudoriparous gland within the connective tissue stroma. Based on the histopathological features, the growth was diagnosed as dermoidcyst.

Keywords: Cornea, dermoid, dogs

A dermoid is a benign congenital choriostoma characterized by the unusual presence of heterotropic cutaneous tissue formed at an inappropriate location[1]. These are most often unilateral and may affect conjunctiva (bulbar and palpebral), cornea, rarely the nictitating membrane and eyelids[2]. Dermoids are composed of dermis-like connective tissue including the epidermis, dermis, sebaceous glands, fat and hair follicles[3]. Hair from the lesion causes severe irritation to the eye which leads to chronic epiphora, keratitis, corneal ulceration and blepharopasm[4]. Surgical excision of ocular dermoid is one of the best treatment options which ensures complete elimination of signs and minimum scarring of the cornea[2,3].

A 1 year old Shih Tzu dog weighing 5 kg was presented to the Small Animal Clinic, Department of Veterinary Surgery and Radiology, College of Veterinary Science, GADVASU, Ludhiana (Punjab) with a complaint of abnormal hair growth in the right eye since last two months. A round black color lesion slightly elevated from the surface of the cornea and bulbar conjunctiva, measuring around 5 mm in diameter with a tuft of hair over the surface was grossly visible in the superior temporal quadrant of the right eye (Fig. 1). Ocular discharge, hyperaemia and mild corneal opacity were observed upon ophthalmic examination of the affected eye. The animal was active with normal feeding pattern. The rectal temperature, heart rate and respiratory rate were within normal limits.

Superficial keratectomy was performed to excise the corneo-conjunctival dermoid under general anaesthesia. The dog was pre-medicated intramuscularly with a mixture of Inj. Butorphanol (Inj. Butrum®, Aristo, New Delhi) @ 0.2 mg/kg BW (I/M), Inj. Acepromazine (Inj. Ilium-Acepril®-10, Troy Laboratories Pvt. Ltd. Australia) @ 0.05 mg/kg BW (I/M) and Inj. Atropine sulphate @ 0.01 mg/kg BW (I/M) prior to surgery. The anaesthesia was induced with Inj. propofol (1%) (Inj. Neorof®, Neon Laboratories Ltd. India) @ 4 mg/kg BW (I/V) and was maintained with 1-2% isoflurane in oxygen by cuffed endotracheal tube attached to the circle system of the small animal anaesthetic unit.

The patient was positioned on the operating table in left lateral recumbency with the affected right eye facing upwards. The eye was thoroughly cleaned and draped to maintain asepsis. The globe was fixed by placing Lieberman eye speculum and the dermoid was removed gradually by incising the peripheral margins in a circum ferential manner using micro-surgical ophthalmic instruments (Fig. 2).

How to cite this article : Devi, N.U., Singh, D. and Leishangthem, G.D. 2025. Corneal dermoid in a dog. Indian J. Vet. Pathol., 49(1) : 99-101.

The excised dermoid tissue was processed and paraffin tissue blocks were prepared using the standard method[5]. The tissue sections (5 µm) were stained with hematoxylin and eosin stain for routine histopathology. Histopathologically, the tissue revealed the presence of an outer stratified squamous epithelium lining. The inner area revealed connective tissue stroma with numerous sebaceous glands, hair follicles and sudoriparous gland (sweat gland) along with few lymphocytes' infiltration were observed (Fig. 3). Post-operative care and management included topical installation of eye drop. Gatiquin (Gatifloxacin 0.3% w/v, Cipla) for a period of one week along with parenteral antibiotic administration of Inj. Cefotaxime @ 20-25 mg/kg BW twice daily for 5 days and Inj. Meloxicam (Inj.

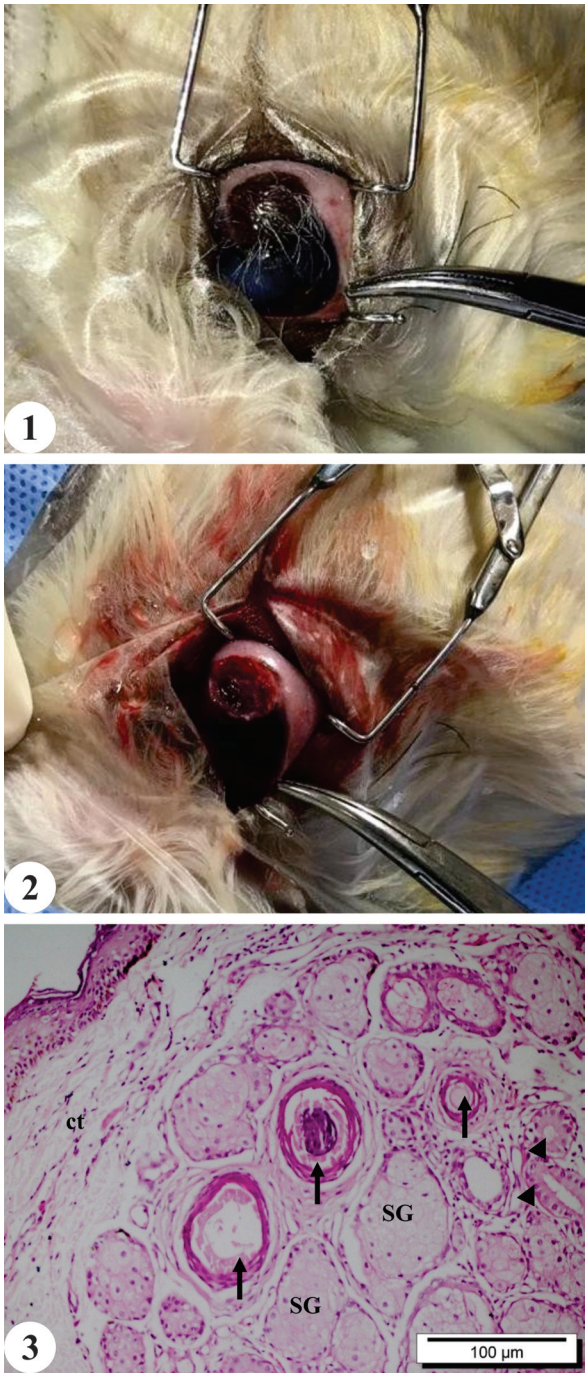

Fig. 1. Dermoid in the right eye: Presence of tissue and hair on the surface of the cornea, limbus and bulbar conjunctiva; **Fig. 2.** Appearance of eye after surgical resection of the dermoid; **Fig. 3.** Histopathology of the dermoid cyst showing the presence of an outer stratified squamous epithelium lining and numerous sebaceous glands (SG) along with hair follicles (arrow) and sudoriparous gland (arrow head) within the connective tissue stroma (ct) (H&E, Bar = 100 µm).

Melonex®, Intas Pharmaceuticals Ltd., Ahmedabad) @ 0.2 mg/kg once daily for 3 days. The owner was advised to apply an Elizabethan collar for 10 days.

The physiopathological mechanism for a choristoma formation is unknown, however most likely hypothesis is that a dermoid is developed by abnormal differentiation of ectoderm at an aberrant location maintaining the histological characterstics of skin[6]. The presence of dermoid has been reported at different sites which may vary with species and even breeds[7]. Corneal dermoid causes discomfort to the patient due to continuous irritation, pain and ocular discharge, warranting appropriate medical or surgical management[3]. Dermoids have been reported in canine and rarely in feline patients. Certain breed predisposition has been documented in dogs with development of cutaneous dermoid cysts seen in Rhodesian ridgeback, Shih-Tzu, Siberian Husky, Beagle, Welsh Corgi and Dachshund breeds[8,9]. It is believed that dermoids are congenital and not hereditary, however, cases have been reported linked to genetic factors[10].

A dermoid cystis usually composed of sebaceous, sweat glands along with hair follicles and can be differentially diagnosed with other cysts such as epidermoid cyst. In the present study, the diagnosis was made on the basis of histopathological features containing the hair follicles, sebaceous and sweat gland as corneal dermoid. In a retrospective study, ocular dermoid were divided as limbal, eyelid, corneal and conjunctival. They also showed that surgical removal of ocular dermoids was curative[7]. Superficial keratectomy is considered as a successful treatment for corneal dermoid. Some degree of recurrence can be expected if complete removal of dermoid is not carried out and manual epilation of hair is a temporary relief to the patient as the hair may grow again[2]. Moreover, surgical excision should be performed at an early age to restore functional development of the eye and prevent visual impairment[11]. In the present case, the dermoid was excised completely and the corneal wound healed uneventfully without any signs of corneal opacity/scarring or visual impairment. There was no recurrence of dermoid up to one year following resection.

REFERENCES

1. Erdikmen DO, Aydin D, Saroglu M, Guzel O, Hasimbegovic H, Ekici A, Gurel A and Ozturk GY. 2012. Surgical correction of ocular dermoids in dogs: 22 Cases. *Kafkas Univ Vet Fak Derg* **19:** 41-47.
2. Lee J, Kim M, Kim I, Kim Y and Kim M. 2005. Surgical correction of corneal dermoid in a dog. *J Vet Sci* **4:** 369-3706.
3. Rajput A, Malik V, Vijay R, Gangwar H and Pandey RP. 2018. Surgical correction of ocular dermoid in a Labrador dog. *J Entomol Zool Stud* **6:** 59-61.
4. Choudhary M and Kalita D. 2016. Surgical management of sclero-corneal dermoid in a dog. *Intas Polivet* **17:** 478-479.
5. Al-Sabawy HB, Rahawy AM and Al-mahmood SS. 2021. Standard techniques for formalin fixed paraffin embedded tissue: A pathologist perspective. *Iraq J Vet Sci* **35:** 127-135.
6. Balland O, Raymond I, Matheison I, Isard PF, Videmont-Drevon E and Dulaurent T. 2015. Canine bilateral conjuncti-

vo-palpebral dermoid: Description of two clinical cases and discussion of the relevance of the terminology. *Case Rep Vet Med* 1-6.
7. Zachary B and Eric L. 2019. Ocular dermoids in dogs: A retrospective study. *Vet Ophthalmol* **22:** 760-766.
8. Abu-seida AM. 2014. Corneal dermoid in dogs and cats: a case series and review of literature. *Glob Vet* **13:** 184-188.
9. Alam MM and Rahman MM. 2012. A three years retrospective study on the nature and cause of ocular dermoids in cross-bred calves. *Open Vet J* **2:** 10-14.
10. Horikri K, Ozaki K, Maeba H and Narama I. 1994. Corneal dermoid in two laboratory beagle dogs. *Exp Anim* **43:** 417-4204.
11. Assefa A. 2018. Surgical management of congenital ocular dermoid cyst: a review. *J Glob Sci* **6:** 207-2018.