

# Surgical management of islands of ocular dermoids in a holstein friesian cross bred calf – a case study

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*Journal of Livestock Science (ISSN online 2277-6214) 6: 1-3*

*Date of receipt: 17.3.15; Date of acceptance: 17.3.15*

## Abstract

A one month old Holstein Friesian cross bred calf was presented with history of epiphora, blepharospasm, keratoconjunctivitis in its right eye. Anamnesis, clinical and histopathological examinations revealed presence of islands of dermoids in corneoscleral limbus, conjunctiva and eyelid margins. Obligation of proper surgical techniques and maintenance of adequate postoperative measures rewarded with uneventful recovery.

## Keywords

Ocular dermoid; Holstein Friesian; crossbred calf

## Introduction

Ocular dermoids are examples of a choristoma or congenital circumscribed overgrowth of microscopically normal tissue in an abnormal place. These represent histologically normal islands of skin arising in the conjunctiva, third eyelid, limbus, cornea or eyelid margin in various combinations. Dermoids containing hair follicles have hair growing from the surface, which causes conjunctival and corneal irritation leading to epiphora, keratitis and conjunctivitis (Maggs, 2008). The present communication deals with the surgical management of islands of dermoids present in corneoscleral limbus, conjunctiva and eyelid margins in a Holstein Friesian cross bred calf.

## Case history and clinical examination

A one month old Holstein Friesian cross bred calf, weighing approximately 35 kg, was brought to Department of Veterinary Surgery and Radiology, M.J.F. College of Veterinary and Animal Science, Chomu, Rajasthan with history of epiphora, blepharospasm, keratoconjunctivitis in its right eye. Anamnesis and physical examination tentatively revealed presence of islands of dermoid masses on medial cornea extending slightly beyond the inferonasal limbus, lateral bulbar conjunctiva, dorsomedial palpebral conjunctiva and ventomedial lower eyelid margin with tufts of irritating hairs (Fig. 1). However blinking, consensual and photomotor pupillary reflexes were intact. Surgical excision of the islands of masses was recommended.

## Treatment

The owner was advised to fast the animal overnight, with withdrawal of water on the day of surgery. The calf was sedated with 0.1mg/kg Xylazine (Xylaxin®; Indian Immunologicals Ltd) intramuscularly and restrained in left lateral recumbency. After attainment of sedation, the external jugular vein was catheterised and approximately 2 litres of normal saline was administered intra-operatively. In order to achieve complete anaesthesia of the eye, relaxation of the globe and akinesia of eyelids; retrobulbar, supraorbital and auriculopalpebral nerve blocks were performed. The long hairs around the site and masses were closely trimmed and the area was cleaned with 1% boric acid solution. For topical anaesthesia, 3 drops of 0.5% proparacaine ophthalmic solution (Paracain®, Sunways Pharmaceutical Pvt. Ltd.) was instilled in the eye. After attainment of adequate anaesthesia masses on corneoscleral limbus and bulbar conjunctiva were excised circumlesionally by superficial lamellar keratectomy with the help of Bard –Parker blade No. 15. Masses present on dorsomedial palpebral conjunctiva and ventomedial lower eyelid margin were excised by full thickness wedge resection. Bleeders were controlled by cotton soaked with Adrenaline bitartrate (Vasocon®, Neon Labs Pvt. Ltd.). All excised masses were submitted for histopathology to be fixed in 10% neutral buffered formalin, embedded in paraffin, sectioned at 5 µm by a rotary microtome, and stained with haematoxylin and eosin (HE).

Systemic (10 ml Oxytetracycline®; Zydus AHL intravenously) and topical antibiotics (Chloromycetin Apli Caps®; Pfizer India Ltd.) were used perioperatively. The animal was recovered within 45 minutes after the onset of sedation. Post-operatively owner was instructed to instill topical antibiotic (Neosporin® Eye drops; GlaxoSmithKline Pharmaceuticals Ltd.) QID for 2 weeks and iridocycloplegics (1% Atropine Eye drops B.P., Jawa Pharmaceuticals India Pvt. Ltd.) BID for 1 week as mydriatic therapy to reduce ocular pain. During re-examination after 2 weeks, there was little evidence of the trauma and the recovery was uneventfully.

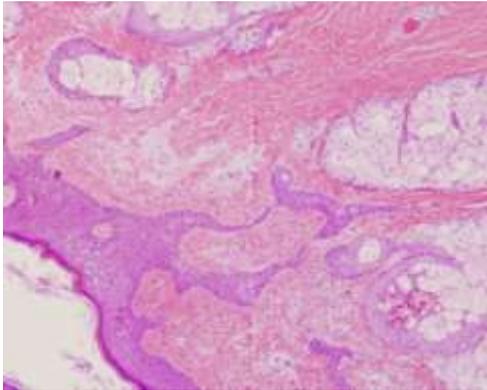


**Fig. 1:** Figure showing right eye of calf with hairy ocular masses on medial sclerocorneal junction slightly towards inferonasal limbus, lateral bulbar conjunctiva, dorsomedial palpebral conjunctiva and ventomedial lower eyelid margin exhibiting clinical signs like epiphora, blepharospasm and keratoconjunctivitis. Inset showing excised masses.

## Histopathological examination

Histologically, excised masses were lined with moderately hyperplastic, keratinized stratified squamous epithelium and basal cells overlying a thick collagenous stroma, resembling normal skin with well developed hair follicles, sebaceous glands and filled with keratinous material similar to those had been reported in earlier literature

(Sarrafzadeh–Rezaei *et al.*, 2007; Alam and Rahman, 2012). Hence excised masses were confirmed to be ocular dermoids (Fig 2).



**Fig. 2:** Histopathology of the excised mass, resembling normal skin, lined with keratinized stratified squamous epithelium overlying a thick collagenous stroma with haphazardly arranged hair follicles, sebaceous glands and lumen filled with desquamated keratin (H & E, X45).

## Discussion

Ocular dermoids in cross-bred calves are genetically-transmitted defects reported with low prevalence in Holstein Friesian cross bred calf which has been described in this case. Calves typically were affected unilaterally or bilaterally with multiple, connected ocular growths that clinically and histologically mimicked elements of normally haired skin like epidermis, dermis, fat, sebaceous glands, hair follicles and abundant hairs (Sarrafzadeh–Rezaei *et al.*, 2007; Alam and Rahman, 2012). This tissue or hair follicles usually irritate eye which leads to epiphora, blepharospasm, subacute keratoconjunctivitis, visual impairment (Maggs, 2008). In the present study, visual function was partially interrupted due to scatterings of dermoids and delayed presentation leads to advancement of inflammatory changes, epiphora and blepharospasm. For treatment of dermoids; enucleation, evisceration, exenteration, cryotherapy, hyperthermia, radiofrequency or combination of these modalities (Sarrafzadeh – Rezaei *et al.*, 2007) has been suggested. But superficial lamellar keratectomy was found to be a convenient and successful technique for corneal dermoid excision (Alam and Rahman, 2012). Dermoids present on palpebral conjunctiva and eyelid margin were excised by full thickness wedge resection as described in earlier literatures (Maggs, 2008; Yeruham *et al.*, 2002). Hence in this study superficial lamellar keratectomy and full thickness eyelid wedge resection were performed, which showed uneventful recovery without any signs of recurrence.

## Acknowledgement

The authors are thankful to the Dean, M.J.F. college of Veterinary and Animal Sciences, Rajasthan University of Veterinary and Animal Sciences, Chomu, Rajasthan, India for his support and cooperation in carrying out

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