



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(8): 942-943
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www.thepharmajournal.com
Received: 02-05-2022
Accepted: 06-06-2022

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Surgical management of deep corneal ulcer using third eyelid flap technique in a calf

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Abstract

One year old Holstein Friesian cross bred heifer was presented with the history of having excessive lacrimal discharge and discoloration of the right eye for past four weeks. Ophthalmic examination revealed epiphora, blepharospasm, conjunctival hyperemia and corneal oedema on the right eye further examination with Fluorescein dye revealed the presence of central deep corneal ulcer involving corneal epithelium and stroma. Third eyelid flap was performed followed by topical medications. Animal had an uneventful recovery.

Keywords: Third eyelid flap, corneal ulcer, calf

Introduction

Corneal ulcer or ulcerative keratitis is an inflammatory condition of the cornea involving disruption of its epithelial layer and stroma. Corneal ulceration is a vision threatening condition requiring early clinical diagnosis, appropriate medical and surgical therapy (Jhala *et al.*, 2012). The causes of corneal ulceration includes trauma, chemicals, bacterial, viral, fungal infection, tear film abnormalities, exposure keratopathy, sharp or blunt trauma and cilia abnormalities (Peiffer and Peterson, 2001). Third eyelid flap technique is useful in the treatment of superficial and deep corneal ulcers by protecting ocular surface and prevents the occurrence of new lesion on their aggravation. This case report describes the successful use of third eyelid flap technique for a deep corneal ulcer in a calf.

Case history and clinical observations

One year old Holstein Friesian cross bred heifer was presented with the history of having excessive lacrimal discharge and discoloration of the right eye for past four weeks (Fig.1). Ophthalmic examination revealed epiphora, blepharospasm, conjunctival hyperemia and corneal oedema on the right eye further examination with Fluorescein dye revealed the presence of central deep corneal ulcer involving corneal epithelium and stroma. It was decided to perform third eyelid flap followed by topical medications.

Treatment and Discussion

Right eye and its peri-ocular surface were prepared aseptically using 0.1% Povidone Iodine solution. Anaesthesia was achieved with auriculopalpebral and retrobulbar nerve block coupled with topical instillation of 0.5% proparacaine. The third eyelid was grasped at its anterior border, covered the cornea by pulling to the lateral canthus and relaxation suture was applied to the lateral upper eyelid with a small piece of IV tube rubber as a stent (Fig.2). Eye drops 0.3% Gatifloxacin one drop four times a day for 2 weeks, eyedrops 0.03% flurbiprofen one drop two times a day and eye drops Hicool® one drop four times a day for 2 weeks were administered post-operatively. Eyelid flap was loosened and examined on 7th postoperative day indicated healing of corneal ulcer with formation of anterior epithelium with superficial vascularisation. Flap was removed on 14th postoperative day. In case of non-healing ulcers more invasive treatments such as topical autologous serum, amniotic membrane graft, eyelid tarsorrhaphy, nictitans flap, keratoplasty can be considered (Lazreg *et al.*, 2020). Nictitating membrane flap is useful in protecting and supporting the weakened cornea and assist corneal healing. In the present case, the chronic deep corneal ulcer was successfully treated with temporary eyelid tarsorrhaphy and standard medical therapy.



Fig 1: Central deep corneal ulcer in right eye

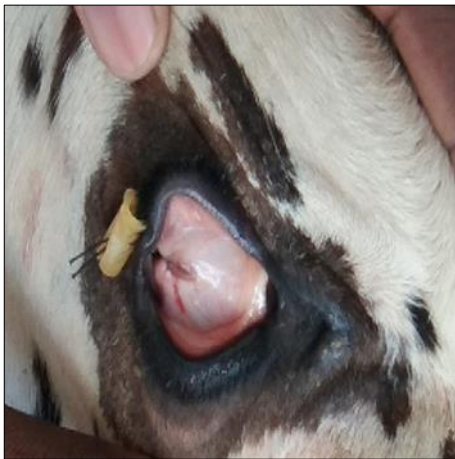


Fig 2: Third eyelid flap covering the corneal ulcer

Acknowledgement

The authors are thankful for the constant encouragement received from the Dean, Veterinary College and Research Institute, Tirunelveli. The authors are also thankful for the support received from Director of Clinics, TANUVAS and Associate Professor and Head, VCC, Veterinary College and Research Institute, Tirunelveli.

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