



Surgery

SURGICAL MANAGEMENT OF SQUAMOUS CELL CARCINOMA IN A COW
– A CASE REPORT

Premasairam. C*	Assistant Professor (Contractual) Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati *Corresponding Author
Karishma, S	M.V. Sc Scholar, Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati
Vani G	Assistant Professor, Department of Veterinary Surgery and Radiology, College of veterinary Science, Sri Venkateswara Veterinary University, Tirupati
Sridhar G	M.V. Sc Scholar, Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati
Veena P.	Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati
SureshKumar R.V.	Professor and University Head, Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati

ABSTRACT A five year old cross bred cow presented with an abnormal growth on its right eye over a period of 8 months. Clinical examination revealed a cauliflower like growth extending from nictitans to the lateral canthus of the eye with unilateral epiphora. The condition was tentatively diagnosed as Squamous Cell Carcinoma and enucleation was done. Postoperatively antibiotics and NSAIDs were administered and the animal made an uneventful recovery.

KEYWORDS : Cow, Cauliflower like growth, Epiphora, Enucleation.

INTRODUCTION

Bovine ocular squamous cell carcinoma (BOSCC) is a chronically progressing invasive and most common malignant tumor affecting cattle (Heeney and Valli, 1984). It is a primary neoplasm of epithelial origin that may occur in different ocular and periocular tissues, especially the epithelial surfaces of conjunctiva, corneo-scleral junction, nictitating membrane, and cornea and the eyelid skin (Tsujita and Plummer 2010). The tumor metastasizes through draining lymphatics of the head and neck (Spadbrow and Hoffman, 1980). The etiology of the disease has been suggested that environmental factors (Eg. latitude, altitude, and exposure to sunlight)/ ultraviolet light, non-pigmented orbital Skin, insects, chemicals, viruses and genetic predisposition/ hereditary factors might play an important part in causation of the disease (Bier *et al.*, 1979 and Pugliese *et al.*, 2014). The most common sites of the tumor are the lateral conjunctiva and corneo-limbal junction, but less commonly the lower eyelid, nictitating membrane, and medial canthus. BOSCC is a disease of high morbidity that results in economic loss through early culling and carcass condemnation at slaughter (Russell *et al.*, 1956). The present paper discusses the occurrence of Squamous cell carcinoma and its surgical management in a cow.

MATERIALS AND METHODS

A five year old cross bred Holstein Frisian cow was presented to the Department Of Veterinary Surgery and Radiology, College of Veterinary Science, Tirupati with a history of abnormal growth on the right eye over a period of 8 months which was not responding to the conventional line of treatment for 3 months. The animal was allowed for free land grazing during day times and it was tied outside the house. Upon clinical examination the animal was found to be apparently healthy with sluggish corneal and menace reflexes. It also revealed blepharitis with blepharospasm, chemosis, epiphora and a cauliflower like . The growth was partially observed on the corneolimbic junction and bulbar conjunctiva. All the physiological and haematological parameters were within the normal range. Impression smears were taken from the mass and sent for exfoliative cytology. The condition was tentatively diagnosed as Squamous Cell Carcinoma and enucleation of the eye was advised.

TREATMENT AND DISCUSSION

The animal was off fed for 18 hours prior to surgery and sedated with Inj. Xylazine Hydrochloride (Xylaxin- Indian Immunologicals, Hyderabad) @ 0.1mg/kg intravenously. The hairs around the right eye were clipped and shaved and the immediate surroundings are

vigorously cleaned with 7.5% Povidone iodine scrub solution (Tsujita and Plummer 2010). A sterile disposable 18G needle was taken and a four point retrobulbar block was accomplished using administration of 2% Lignocaine hydrochloride solution. This technique resulted in a certain degree of exophthalmus and makes orientation easier (Vermut, 1984).

The affected eye was flushed with 0.9% Normal Saline solution and all debris and discharge were removed. Medial canthotomy followed by lateral canthotomy was performed using a BP Blade of size No.11. and all the adhesions were relieved. The optic bundle was ligated using Chromic Catgut of size 2 and the enucleation was done (Fig. 2). The hemorrhage was arrested by packing a sterile gauze material into the cavity. The eyelid margins were trimmed and tarsorrhaphy was performed using braided silk (Ethicon, Johnson and Johnson, Mumbai) of size 1 in interrupted pattern (Schulz, 2008) (Fig.3). The entire globe was sent for histopathological examination which revealed the condition as Ocular Squamous cell carcinoma (Fig. 4). Postoperative wound dressings were advised to the owner along with administration of Inj. Streptopenicillin (Dicrysticin- S- Zyodus AHL) @10mg/kg for 7 days along with Inj. Meloxicam (Melonex®, Intas Pharmaceuticals Ltd, Matoda, Ahmedabad) @0.3mg/kg for 5 days intramuscularly. The skin sutures were removed on 10th postoperative day and the animal made an uneventful recovery.

In the present case the affected animal was cross bred Holstein fresian and which was in accordance with Bier *et al.*, (1979). The animal was reared under free land grazing system without proper housing management which could be one of the predisposing factor for the occurrence of OSCC and it was in accordance with Pugliese *et al.*, (2014). Enucleation is the most frequently adapted surgical procedure extensive corneal ocular neoplasms (Vermut, 1984).

Preoperative impression smears for exfoliative cytological examination from the growth and postoperative histopathological examinations confirmed the condition and it was found to be in accordance with Tsujita and Plummer (2010)

CONCLUSION

The present case discussed the occurrence of Bovine ocular squamous cell carcinoma (BOSCC), clinical signs, diagnosis and its successive surgical management in a cow.



Fig. 1 Showing a non-ulcerated growth extending from nictitans to the lateral canthus of the right eye

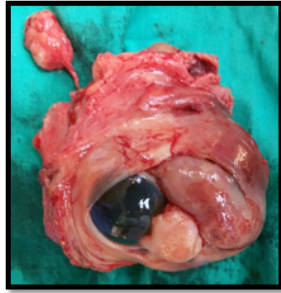


Fig. 2 Showing the enucleated eye ball



Fig. 3 showing the eyelid margins were trimmed and tarsorrhaphy was performed using braided silk in interrupted pattern

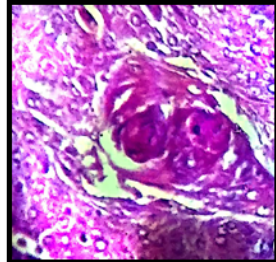


Fig. 4 showing keratin pearls with concentric layers of squamous cells. H & E x 280

ACKNOWLEDGEMENT

The authors are thankful to the Sri Venkateswara Veterinary University for the facilities provided to conduct the study.

REFERENCES

1. Tsujita, H., and Plummer, C.E. (2010). Bovine Ocular Squamous Cell Carcinoma. *Vet Clin Food Anim* 26: 511–529
2. Heeney, J.L., and Valli, V.E.O. (1985) Bovine Ocular Squamous Cell Carcinoma: An Epidemiological Perspective. *Can J Comp Med* 49:21-26.
3. Spadbrow, P.B. and Hoffman, D (1980). Bovine ocular squamous cell carcinoma. *Vet. Bull.* 50: 449-459.
4. Pugliese, M., Mazullo, G. Niutta, P.P. and Passantino, A. (2014). Bovine ocular squamous cellular carcinoma: a report of cases from the Caltagirone area, Italy. *Veterinarski Arhiv* 84 (5), 449-457
5. Bier, J., Kleinschuster, S.J. and Corbett, R. (1979). Radical surgery of bovine ocular squamous cell carcinoma (cancer eye): a new procedure. *Veterinary Science Communications*, 3:221–230
6. Russell, W.O., Wynne, E.D. and Loquvam, G.S. (1956). Studies on bovine ocular squamous cell carcinoma (cancer eye). *Cancer*;9:1–52.
7. Vermunt, J. (1984). Transpalpebral exenteration in cattle. *Veterinary Quarterly*, 6:1, 46-48
8. Sschulz, K. 2008. Field Surgery of the Eye and Para-Orbital Tissues. *Vet Clin Food Anim* 24:527–534