

SQUAMOUS CELL CARCINOMA OF EYE IN BUFFALOES - A REPORT OF TWO CASES

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ABSTRACT

The present report describes about squamous cell carcinoma of eye in two she buffaloes with pulmonary metastasis in one case. Wide margin excision with extirpation of the eye and application of liquid nitrogen resulted in successful outcome. No recurrence was observed for up to six months post-operatively.

Keywords: *Bubalus bubalis*, buffaloes, squamous cell carcinoma, eye, she buffalo, metastasis

INTRODUCTION

Squamous cell carcinoma is the most common neoplasm of the eye in cattle (Gharagozlou *et al.*, 2007). Due to lack of awareness among farmers and clinicians the ocular problems in domestic animals are getting worsen day by day (Tamilmaham *et al.*, 2013). The incidence varies from 0.8% to 1.6% in bovines of age 6 to 9 years. Ocular squamous cell carcinoma results in economic loss due to shortenend productive life and condemnation of animal for slaughter. It may involve eyelids i.e. palpebral conjunctiva, nictitating membrane, cornea and conjunctiva or

cornea. The tumor is locally aggressive in most of the cases but metastasizes late in the disease.

HISTORY AND CLINICAL SIGNS

Two she buffaloes aged 10 and 12 years were presented to Department of Veterinary Surgery and Radiology, with a history of euphoria, swollen eyelid with purulent discharge from left eye and complete closure of eye lids since 2 months (Figure 1 and 2). Case 2 she buffalo aged 12 years was 6 months pregnant and both the animals have normal appetite. Clinical examination revealed firm hard mass on upper eye lid in Case 1 and in Case 2 on lower eye lid covering the entire eye. The growth extended over the third eye lid without involving the globe. Purulent discharge was noticed on pressing the tumour mass. Radiological examination of left orbit revealed a soft tissue opacity extending beyond the orbit and closely adherent to bony orbit with mild osteolytic changes in Case 2. Thorax lateral X- ray revealed a nodular mass measuring 2.9 x 1.9 mm size in lungs with miliary pattern indicating metastasis to lungs in Case 2 (Figure 3). By history, symptoms and radiological examination it was tentatively diagnosed as squamous cell carcinoma of eye and

was decided to remove the mass surgically by extirpation of eye to give relief and prolong life of animals.

RESULTS AND DISCUSSION

Surgical site was shaved, scrubbed with 0.5% chlorhexidine antiseptic solution and prepared aseptically. Regional was induced by retrobulbar and auriculopalpebral nerve blocks using 2% lignocaine hydrochloride. The surgery was performed in standing position. Stay sutures were applied involving upper and lower eyelids with No. 2 black braided silk. By holding and pulling the stay sutures forward in left hand, transpalpebral incision was made taking a wide margin to avoid the chance of leaving tumour mass and to prevent recurrence. The dissection was continued posteriorly to the caudal border of orbit using sharp and blunt methods. The eyelid tumor mass, nictitating membrane, conjunctiva, globe, extra ocular muscles and orbital fat were excised completely. Optic nerve and optic vessels are severed using curved scissors and bleeding was controlled by tamponade with sterile antiseptic gauze dipped in 5% povidone iodine. After extirpation liquid nitrogen was applied over the orbit by swab method to destroy the neoplastic cells, if present (Figure 4). Each time the swab was left in situ for 3 minutes and repeated twice. Eye lid margins are closed by horizontal mattress suture pattern using No. 2 black braided silk, leaving a gap at the medial canthus to facilitate regular dressing (Figure 5). The animal was given inj. streptopencillin 5.0 g i.m. for 7 days and inj. meloxicam 15 ml i.m. for 3 days. Alternate day wound dressing was done with gauze dipped in 5% povidone iodine for 12 days, reducing the length

of the gauze every time gradually to facilitate the growth of granulation tissue. Skin sutures were removed on 12th post-operative day.

In most of the cases of ocular squamous cell carcinoma the lesions were located on the nictitating membrane and palpebral conjunctiva (Gharagozlou *et al.*, 2007) more commonly on lower eye lid (Tamilmahan *et al.*, 2013). In the present study the lesions were present on the palpebral conjunctiva of upper eye lid in Case 1 and lower eye lid and nictitating membrane in the second case. Squamous cell carcinoma was associated with purulent conjunctivitis (GoldSchimdt and Hendrick, 2012). The tumour mass was cauliflower like with hyperkeratosis and ulceration (Vara Prasad *et al.*, 2016) in Case 1 where as it was round firm mass in Case 2. Ulceration and purulent discharge was a consistent finding in both the cases. Both the animals were females and aged 10 years and above. In both the cases left eye was affected. In Case 2, pulmonary metastasis was observed. Extirpation of the eye performed under retrobulbar and auriculopalpebral nerve blocks using 2% lignocaine hydrochloride provided good analgesia. The cases were followed for a period of six months post-operatively and no recurrence was observed. In the present study, wide margin excision and cryosurgery using liquid nitrogen (Farris and Fraunfelder, 1976) prevented the recurrence in both the cases. Histopathology of eyelid tumor masses confirmed it as squamous cell carcinoma. It showed islands and cords of neoplastic keratinocytes showing moderate degree of differentiation. Distinct pearl formation was seen (Figure 6). Neoplastic cells showed large vesicular nucleus with prominent nucleoli and abundant cytoplasm. Few mitotic figures were seen in both the cases.



Figure 1. Photograph showing tumour on left upper eye lid - Case 1.



Figure 2. Photograph showing tumour on left lower eye lid - Case 2.

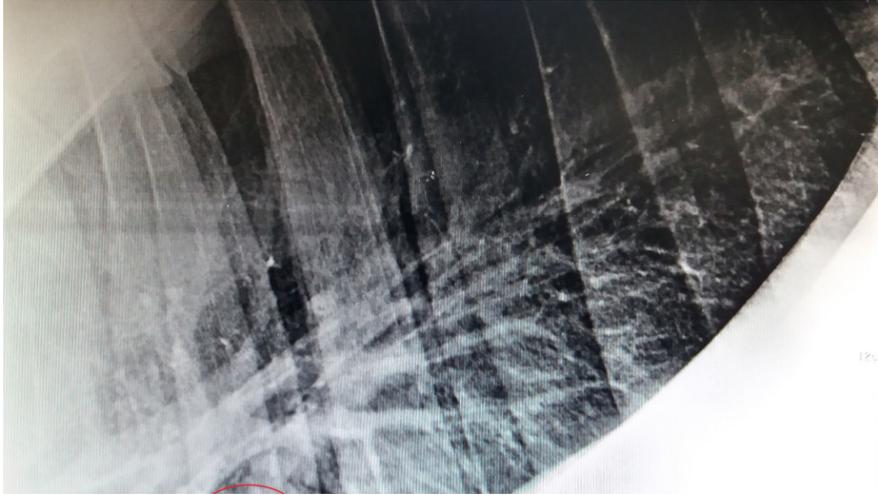


Figure 3. Lateral thoracic X-ray showing metastatic lesions in lung in Case 2.



Figure 4. Photograph showing application of liquid nitrogen by swab method.



Figure 5. Photograph showing skin closure with gap near medial canthus.

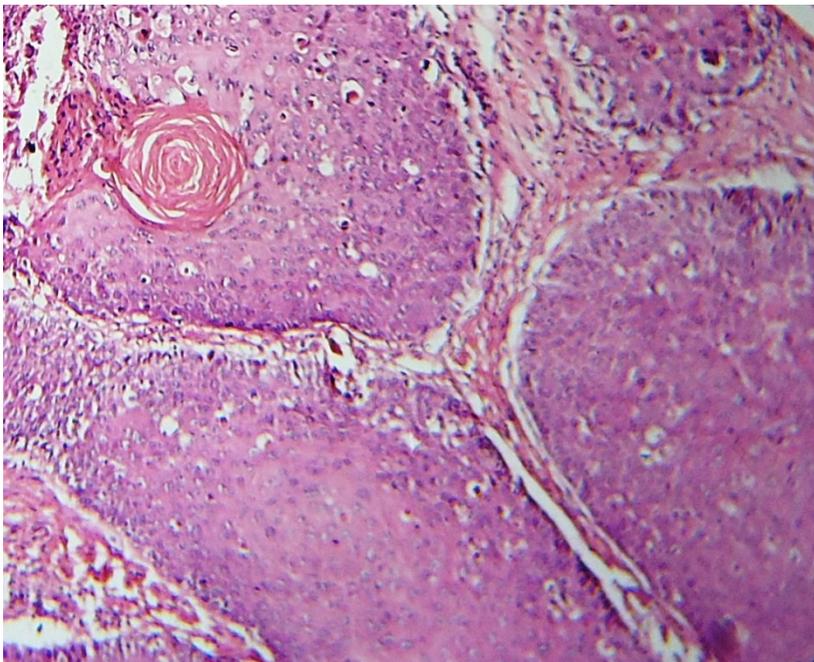


Figure 6. Photomicrograph showing keratin pearl formation surrounded by neoplastic cells.

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