

Original Research Article

Surgical Management of Squamous Cell Carcinoma in Medial Canthus of Eye in Horse

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ABSTRACT

Keywords

Nodular mass,
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A horse came to TVCC, BVC, patna with a complaint of a slowly growing mass in the left eye since last two months. General physical condition of horse was good. The left eye had mucopurulent discharge and a pink nodular mass on the scleral conjunctiva at the medial canthus of eye. A neuro-ophthalmic examination including menace, palpebral and pupillary light reflexes was carried out under xylazine sedation. Surgical removal of mass has been conducted under xylazine and ketamine anaesthesia. Impression smear was made from the collected sample which was diagnosed as squamous cell carcinoma (SCC). Postoperatively Maxxtal, Pan-40 and Intaceff-Tazo 3375, was given for five days. The recovery was uneventful without any complication.

Introduction

Eyelids and conjunctivae are the most frequent site for eye tumors in horses. Mostly these may be squamous cell carcinoma (SCC) or sarcoid. Tumors in eye socket are unusual and generally local extensions of eyelid, conjunctiva, or sinus tumors. Tumors within the eyes are rare and usually malignant melanomas. Ocular squamous cell carcinoma (OSCC) is a malignant tumour of the eye (Dubielzig, 2002). The majority of all ocular tumours is OSCC type (Kafarnik *et al.*, 2009). The neoplasia of the cornea are generally superficial, any neoplasia penetrating the Descemet's membrane has yet been described (Drazek *et al.*, 2015). It appears

that this membrane is resistant to the invasion of neoplastic cells, which extended around its borders (Monlux *et al.*, 1957). Prolonged sunlight exposure plays a significant role in the occurrence of SCCs (Dugan *et al.*, 1991a).

Alterations in oestrogen and androgen levels in the blood are additional factor of SCC aetiology in horses (Mosunic *et al.*, 2004). Horses of 8 to 13 years are prone to OSCC (Lassaline *et al.*, 2014). Equine breeds which have grey hair coat component are more frequently affected than in dark-pigmented horses for neoplasm (Dugan *et al.*, 1991).

Case history and observation

A 10 year old stallion weighing 450 kg was presented to Teaching Veterinary Clinical Complex of Bihar Veterinary College, Patna. The clinician had examined the stallion after the owners had noted a slowly growing mass in the left eye over the previous 2 months. On presentation, the horse's general physical examination was good. A neuro-ophthalmic examination including menace, palpebral, and pupillary light reflexes was done under xylazine (Indian Immunologicals, Hyderabad) @ 0.3 mg/kg body-weight (BW) sedation, and found normal. The total blood count and serum biochemical profile were within normal limits. The left eye had a mucopurulent discharge and a pink nodular mass on the scleral conjunctiva at the medial canthus. It was 3 cm in diameter, extended 4 mm over the cornea, and was raised 2 mm above the surface of the eye (Figure 1).

The goals of treatment were tumor removal, prevention of metastasis, and maintaining an aesthetically visual eye by enbloc resection with a conjunctival pedicle flap.

Surgical management

Animal was off fed for 18 hours. During off fed hours animal was maintained on 5% dextrose. Preoperatively animal was medicated with Intaceff Tazo (Intas Pharmaceuticals) 3375mg. Surgical intervention has been done under xylazine and katamine (Neon Laboratories Ltd) anesthesia at the dose rate 1 mg and 5 mg per kg body weight respectively. The horse was placed in right lateral recumbency and prepared for surgery. An incision was made around the tumor, with 2 mm margins on the corneal surface and 5 mm margins on the scleral surface. Growth over the medial canthus of the eye has been removed by

holding the base of growth by tissue forceps. The base of growth was sutured by vicryl 4-0 and growth was removed by surgical blade carefully. After removal of growth no blood was seen on suture line. Impression smear was made from the collected sample.

The smear was stained by Leishman's stain (Figure 2). The tumor was fixed in 10% neutral-buffered formalin and transverse paraffin sections of the tumor were stained with haematoxylin-eosin and examined under a microscope (Figure 3). Post operatively maxxtol (Intas Pharmaceuticals) 15 ml I/V for 3 days, Pan 40 (Alkem Laboratories Ltd) 40 mg I/V and intaceff Tazo (Intas Pharmaceuticals) 3375mg I/V for five days. Eye drop moxicip (Cipla Pharmaceuticals Ltd) and flurr (Allergan India) was recommended for 7 days. Recovery was uneventful without any complications.

Results and Discussion

Squamous cell carcinoma (SCC) is the malignant tumour of epithelial cells. It is found in skin and most commonly occurring in eyes and horn. In horses, Corneal Squamous Cell Carcinoma constitutes from 19.1% to 21 % of all OSCCs (Mosunic *et al.*, 2004). SCC may also grow directly over the corneal epithelium without any primary limbal / conjunctival neoplasm. This type is slender usually intraepithelial and the cells differentiation is low, making surgical removal more practical. There are a several options for OSCC treatment and selection of the suitable method depends on the features of neoplasm like its location, size, depth of invasion, treatment costs and availability of equipment. Surgical elimination is the most common treatment option for OSCC (Payne *et al.*, 2009). This method is useful when the tumor removed with wide safety margin (Dugan *et al.*, 1991).

Fig.1 Tissue growth on medial canthus of eye



Fig.2 Cytopathology view

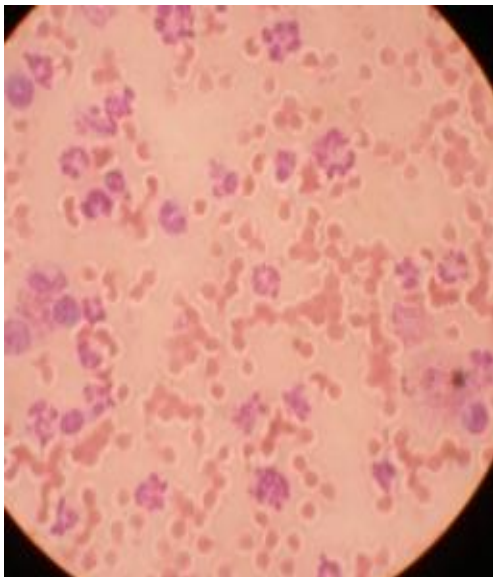
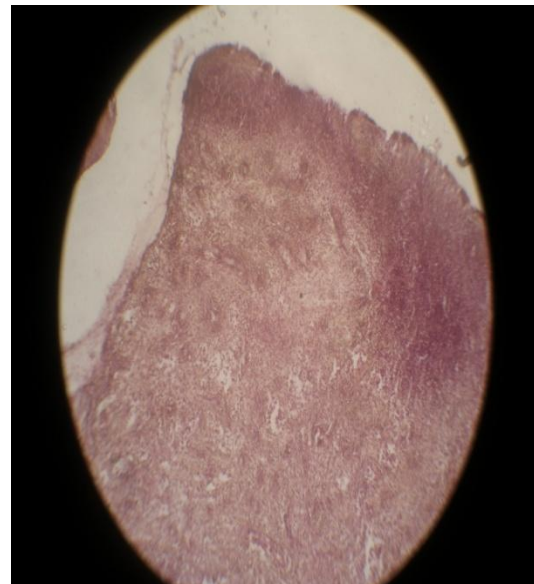


Fig.3 Histopathology view



Surgical treatment along with supportive therapy lowers the rate of recurrences (Mosunic *et al.*, 2004). The microscopical view of impression smear revealed many inflammatory cells with many RBC's with few anaplastic epithelial cells; however, correct diagnosis could not be made. The histopathological examination showed nests of pleomorphic epithelial cells appearing as pearl (Pigatto *et al.*, 2011). Thus it was diagnosed as a case of Squamous cell carcinoma. In numerous publications,

recurrences have not been reported in surrounding tissues after enucleation (Michau *et al.*, 2012 and Albanese *et al.*, 2014). In this case report, due to the size of the tumour and the lack of data on a totally effective combined treatment, a radical approach was selected.

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