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Management of equine adnexal squamous cell carcinoma

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Introduction

Adnexal neoplasia presents a significant challenge to the ambulatory equine practitioner. Clinical decision making regarding space occupying lesions in the vicinity of the globe must take into account preservation of eyelid function, risks of corneal exposure if tear production or eyelid cover is compromised and the fact that the palpebral conjunctiva is confluent with the conjunctiva of the nictitans and the anterior scleral surface of the globe. Cases are often presented at an advanced stage, limiting surgical options. It is not uncommon for adnexal neoplasia to spread locally onto the surface of the globe, compromising vision. Tumours may also spread into the sinus or retrobulbar region and occasionally may invade the brain.

The most common neoplasm of the equine eye and ocular adnexa is squamous cell carcinoma (SCC). This neoplasia can occur on the cornea, on the surface of the conjunctiva, on the nictitans or on the eyelid. The appearance of SCC is variable; early lesions involving skin may be simple hyperaemic areas with small erosions or crusts. More advanced lesions range in appearance from papillomatous growths to cobblestone like plaques to erosive masses. Some corneal lesions have a smooth, fleshy appearance while others have a proliferative or ulcerative character. Biopsy is required for confirmation as other tumours can also present similarly. Histopathology of the sample will document the differentiation characteristics of the neoplasm as well as determine the degree of tissue invasion in the sample. Squamous cell carcinoma has a low rate of metastasis to distant sites but is frequently locally invasive (Giuliano 2011).

Chronic mechanical or solar irritation promotes development of SCC. A well-known risk factor is the presence of pink skin along the mucocutaneous junction between skin and palpebral conjunctiva. Horse breeds at risk for SCC include Paints, Pintos, Appaloosas, and any horse that lacks pigment on the eyelid margin. Belgian draught horses and Haflingers (Utter 2012) are also at increased risk for SCC.

Options for treatment of SCC in ambulatory practice are usually limited to surgical excision, local immunotherapy, local chemotherapy and cryotherapy. Referall centres offer additional advanced methods of treating SCC and other periocular neoplasms including hyperthermia, CO₂ laser ablation, brachytherapy and local photodynamic therapy (Giuliano 2011).

Case presentations

This talk will present 5 cases of periocular SCC that were handled in a primary care setting. The globe was spared and eyelid function was preserved in 3 cases. Treatment involved a combination of standing surgery, local chemotherapy and (in one case), cryotherapy. In the other 2 cases the globe was enucleated due to advanced disease that had invaded the cornea.

The 3 horses that were treated with globe sparing surgery presented with SCC of the lower eyelid involving one quarter to half of the palpebral margin. Two of the tumours were close to the nasal canthus and one tumour was close to the lateral canthus. All 3 horses underwent standing excision of the masses. A variety of blepharoplastic techniques were used to restore eyelid function and cosmesis. The surgery site of all 3 horses was treated with local infiltration of cisplatin in sesame oil on the day of surgery, a procedure that has been shown to be safe (Theon et al. 1999). The 3 horses then received a varying number of additional cisplatin treatments at 2-week intervals.

The 2 horses that were enucleated both presented with long standing SCC that had invaded the stroma of the lower eyelid and infiltrated the palpebral and bulb conjunctiva as well as the surface of the cornea. Tumour resection and enucleation was performed as a standing procedure in both cases. A rotational skin flap technique was used to close the large defect that remained over the orbital cavity after tumour excision and globe removal.

Cosmetic results of the surgeries will be shown and the decision making process for the selected blepharoplastic techniques will be illustrated. Follow-up intervals for the 5 cases ranged from 10 months to 5 years; short- and long-term results will be presented. A description of a simple technique for local cisplatin administration is included (Goodrich and Semelovos 2000). Personal protection precautions that are appropriate for the biohazards associated with local cisplatin administration will be presented.

Final comments

This paper will focus on therapeutic options that were used in a general practice setting where surgery was done in stocks and ancillary treatment was restricted to local chemotherapy and in one case, supplemental cryotherapy. The outcome of several of the cases was favourable, but it must be stressed that the prognosis of SCC periocular tumours is unpredictable no matter what treatment is chosen. Owners of horses with advanced disease should be counselled that referral centres offer the broadest range of treatment options and thus the most comprehensive chance for a successful outcome.

References


