Equine Ocular Squamous Cell Carcinoma (OSCC) FAQs

UTCVM OPHTHALMOLOGY

What is ocular squamous cell carcinoma (OSCC)?

Ocular squamous cell carcinoma (OSCC) is the most common type of cancer of the eye and eyelids in horses. The cancer arises from the surface of skin and mucosa and as the cancer progresses it dives deeper into the affected tissue. Risk factors include white eyelids (typically Appaloosas and paint horses), UV light exposure, and genetics (Haflingers, Belgians, some warmbloods, etc.). The most common sites affected include the lower eyelid, third eyelid, and outer portion of the cornea and conjunctiva. The cancer typically starts off looking like small red scabs on the eyelid or raised, pink masses on the eye. A definitive diagnosis is made through biopsy (taking a sample of the tissue). Tumor cells can spread locally to the bone, orbit, sinuses, brain, lymph nodes, or salivary glands and, on rare occasions, distantly to the lungs. Horses with OSCC may develop SCC in other locations such as the surface of the nose and genitals (prepuce or vulva).

How is OSCC treated?

Early intervention before the tumor invades local tissue is the key to the best prognosis. Surgery is the most effective treatment but should also be combined with adjunctive therapy (additional treatments). With surgery alone, recurrence of the tumor is as high as 80%. The use of adjunctive treatment brings recurrence rates down to 10-15%. Some tumors respond better to different adjunctive treatments, so multiple therapies may be needed after surgery. Examples of adjunctive therapy include chemotherapy (topical creams and injectable), photodynamic laser therapy, radiation therapy, and cryotherapy (freezing). The recommended treatment will depend on several factors including size of the tumor, location, history of previous treatments, and cost. Horses with large tumors may need a CT (computed tomography) scan to determine if invasion of the bone has occurred, prior to surgery. Large tumors or tumors that continue to recur may be best treated with removal of the affected eye (enucleation), prior to the tumor invading bone.

Early squamous cell carcinoma of the eyelid can appear as scabs on the border of a white eyelid, as is demonstrated in this horse.

Careful inspection of the third eyelid is important ,as is demonstrated in this normal horse, when screening for squamous cell carcinoma, because it is a common site for this cancer to occur.

What is the expected prognosis?

Prognosis depends on the location, how early the tumor is identified and treated, and genetics. With early intervention and use of surgery and adjunctive treatment you can sometimes achieve a cure for that site. However, unfortunately, due to the underlying predisposing factors that have caused OSCC in one site, there is still a chance of developing OSCC in another site or in the other eye. Thus, even after a cure of one site annual eye examinations are recommended. The prognosis of tumors that have invaded bone or the brain is poor, as recurrence is inevitable despite aggressive treatment and invasion can be painful and often leads to euthanasia.

How do I know if my horse's eye worsens and what do I do?

Regrowth of the tumor should be treated promptly to achieve the best success. If you notice new growth of red scabs on the eyelid or a pink, fleshy mass on the eye please schedule a recheck with your veterinarian. If you notice distortion of the face around the eye or along the nose and your horse has a history of OSCC please schedule a recheck with your veterinarian.

What can I do to try and prevent OSCC?

High risk horses (white around the eyes or genetic predisposition) should always wear UV protective fly masks and be kept indoors during peak sunlight and UV hours.

There are strong genetic links for OSCC, and a genetic test is available for horses that do not have white around their eyes. Genetic tests should be used prior to breeding at risk breeds (especially Haflingers and Belgians).

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