

Squamous Cell Carcinoma of the Eye

By: Heather Trainor

Squamous cell carcinoma, or SCC, is one of the most common forms of neoplasia to involve the eye. SCC can appear in many forms and in different locations within the eye and its surrounding structures. Ocular SCC typically is first noticed as an area that is more red than the surrounding tissue. It then often ulcerates, becoming open with intermittent bleeding and causing mild irritation locally. Over time, the SCC will grow and become a raised, fleshy mass that will continue to grow and spread locally. The most common areas for ocular SCC to be located are the third eyelid and medial canthus, the lower eyelid, conjunctiva and even the cornea itself.

There are some pre-existing factors that may make some horses more prone to developing SCC than others. For instance, horses that are light colored especially those that do not have any coloring around their eyes are much more prone to developing ocular SCC. Certain breeds such as Appaloosas, Haflingers and some draft breeds are over represented as well, due to these breeds often having light colored hair or minimal pigment around the eyes. Horses that have a higher exposure to UV light, such as those that are on turnout 24/7, also have an increased risk due to cell damage caused by solar radiation. Solar radiation exposure, combined with lack of pigment around the eye, increases the risk of SCC significantly.

Definitive diagnosis of SCC is based on the result of histopathology. SCC can be present in four main different appearances such as a plaque, papillomatous (raised), non-invasive and invasive. SCC in any form begins with neoplastic changes to the epithelial cells most often caused by chronic irritation such as UV radiation from the sun. SCC progressively become larger and can inhibit normal functions of the eye such as blinking, proper tear production and even disrupt vision within the eye if left untreated. Medical treatments involve topical chemotherapies and immunotherapies. Immunotherapy is only used for eyelid SCC and aims at promoting the immune system to attack the tumor tissues to help lead to tumor regression. Chemotherapy, most commonly Cisplatin, can also only be used for eyelid SCC targeting the neoplastic cells to inhibit their growth and replication. Surgical excision of the tumor is often used for when the SCC tumors are located on the third eyelid, conjunctiva and cornea. Other therapies such as cryotherapy and laser ablation may also be used in addition to surgical removal to treat the remainder cells that may have been left behind.

The prognosis for ocular SCC is variable and often depends on the severity of disease at time of treatment, the location of the tumor and if the SCC is recurrent or not. Typically, SCC of the eyelid carries the poorest prognosis where a tumor on the third eyelid carries

a better prognosis. If the SCC keeps recurring, the prognosis tends to be poorer due to the aggressive nature of the disease. The good news with ocular SCC is that metastasis is uncommon and it usually remains a very local disease process.

A few management changes that can be used to help decrease your horses risk of developing ocular SCC is to help protect their eyes from ultraviolet light. It is important to allow your horse to have the ability to escape the direct sunlight such as with a run in shed or shady area in their paddock. If a horse is already high risk, such as a horse with no pigment around the eyes or one that has had ocular SCC in the past, a fly mask made with UV blocking material can also be another added layer of protection for whenever they are in direct sunlight. Careful attention should also be given to daily observation of your horses eyes. If any excessive tearing, discomfort or any new areas that appear raw or raised are noticed it is recommended to have your horse examined by his or her veterinarian. The earlier the disease is recognized the earlier treatment can begin, often leading to a better outcome.