Clinical Commentary
Challenges in the treatment of equine periocular squamous cell carcinoma
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Summary
Management of periocular squamous cell carcinoma is challenging because of the need for adjunctive therapy, the adverse effects of therapies and the frequent recurrence of SCC. Appropriate treatment of equine ocular SCC usually involves surgical excision combined with adjunctive therapy selected as appropriate for the anatomic site of the lesion. Metastasis of periocular SCC has been reported to occur in approximately 6–15% of cases. The horse owner should be carefully educated to understand that for best long-term results from the treatment of periocular SCC, they must be diligent in observing signs of recurrence or metastasis and be willing to have the horse examined as soon as adverse signs are observed. Furthermore, external beam radiation may be effective in the treatment of metastatic SCC and further clinical studies of this treatment modality are needed.

Clinical commentary
In this issue, Elce et al. (2011) describe the recurrence of squamous cell carcinoma (SCC) in 4 horses after treatment of primary medial canthus SCC. For the current author, periocular SCC is one of the most frustrating equine ocular diseases to treat. The need for adjunctive therapy, which may need to be repeated and is expensive, the adverse effects from these adjunctive therapies, and the frequent recurrence of SCC contributes to this clinical frustration. There are many descriptions of adjunctive therapy for SCC and the myriad of choices can be confusing for the clinician (Grier et al. 1980; Rebhun 1990; Wilkie and Burt 1990; King et al. 1991; McCalla et al. 1992; Masunic et al. 2004; Bosch and Klein 2005; Rayner and Van Zyl 2006; Giuliano et al. 2008; Malalana et al. 2010; Giuliano 2011). The reader is directed to a recent comprehensive review of equine SCC for more information, including the treatment options and relative nonrecurrence rates of SCC after treatment [Giuliano 2011]. In general, the ocular or periocular location of the SCC directs to the type of treatment that is indicated. For example, corneal-scleral SCC generally responds to excision and adjunctive therapy of β-irradiation, topical chemotherapeutics (e.g. mitomycin C), or possibly cryotherapy. Eyelid SCC is treated with excision and adjunctive therapy using cryotherapy, intralesional chemotherapy (i.e. cisplatin), immunotherapy, brachytherapy or photodynamic therapy (PDT) (among others). Third eyelid/medial canthal SCC generally is treated with excision of the third eyelid with adjunctive treatment such as cryotherapy, brachytherapy, and possibly (depending on the extent of the lesion) intralesional chemotherapy, PDT or immunotherapy. Recurrence rates of periocular SCC when treated with both surgical excision and an adjunctive therapy range from 25–67% [Giuliano 2011].

In one large retrospective study of equine ocular SCC, a main key to long-term success of the management of this disease was found to be the owner’s willingness to return horses for re-examination (Dugan et al. 1991). It is likely that the early recognition and treatment of recurrent SCC improves the overall prognosis in these horses. Aggressive initial treatment with wide surgical excision if the disease is advanced is recommended for all periocular SCC (Dugan et al. 1991; Beard and Wilkie 2002). The metastatic rate of periocular SCC has been reported as 6–15.4% (Schwink 1987; Dugan et al. 1991). The 4 horses described by Elce et al. (2011) had medial canthus SCC that metastasised to sites within the head but, interestingly, the original ocular mass was not observed to recur. Metastasis of periocular SCC has also been reported to the orbit, calvarium and thorax, all with a grave prognosis (Giuliano 2011). The metastases reported by Elce et al. (2011) were observed 6 months to 3 years after the original treatment for SCC. One case had extension of the SCC to the ipsilateral nasolacrimal duct, one to the ipsilateral maxillary sinus, and 2 to the ipsilateral parotid lymph node.
It is important, therefore, that the owner carefully examines the eye for recurrence of masses, but also must be educated to look for changes associated with sinus disease, swellings along the nasolacrimal duct, and parotid or retropharyngeal swelling after treatment for periocular SCC. These clinical signs and anatomic sites should be reviewed with the owner so that they can better monitor the horse for recurrent disease. Furthermore, I agree with Elce et al. (2011) that follow-up after SCC treatment should continue for at least 5 years after treatment of equine periocular SCC.

Another interesting feature of the paper by Elce et al. (2011) was the success in treatment of SCC metastasis using external beam radiation therapy in 2 of 4 horses. The SCC that had extended to the nasolacrimal duct and to the maxillary sinus both responded to treatment with external beam radiation without recurrence. The horses with parotid and retropharyngeal involvement appeared to have more advanced disease, based on the clinical descriptions, and were either not treated by owner consent or had recurrence after treatment at 3 months. Radiation therapy in equine periocular SCC is usually delivered via brachytherapy, the intralesional placement of gamma radiation-emitting metals, such as iridium-121 (King et al. 1991; Mosunic et al. 2004; Giuliano 2011). Use of brachytherapy in equine ocular SCC has among the highest nonrecurrence rates. However, the high cost, need for isolation, and risk of human exposure has limited the widespread use of brachytherapy. Furthermore, reports of the use and success of brachytherapy in metastatic SCC are limited. Therefore, the results of Elce et al. (2011) with external beam radiation show promise for treatment of some metastatic ocular SCC and further studies are needed to determine the most appropriate candidates for this therapy and the long-term results.

In summary, appropriate treatment of equine ocular SCC usually involves surgical excision combined with adjunctive therapy selected as appropriate for the anatomic site of the lesion. The horse owner should be carefully educated to understand that for best long-term results of the treatment of periocular SCC, they must be diligent in observing signs of recurrence or metastasis and be willing to have the horse examined as soon as advance signs are observed. Furthermore, external beam radiation may be effective in the treatment of metastatic SCC and further clinical studies of this treatment modality are needed.

Author's declaration of interests

The author declared no conflicts of interest.

References


