 history

An 8-year-old gray Irish Sport Horse gelding was referred for investigation of ongoing signs of right-sided ocular pain. On physical examination, a large swelling at the medial aspect of the right orbit was evident. Gross thickening, alopecia, and hyperkeratinization of the periorbital skin were observed, mainly on the upper eyelid, which was suspected to be an occult periocular sarcoid. Enophthalmos with deviation of the globe dorsally and caudally was present, along with blepharospasm and mucopurulent epiphora. The third eyelid body appeared thickened, but the free margin appeared normal. Vision seemed unaffected. The medial part of the cornea had multiple subepithelial excavations, but results of fluorescein staining were negative. Menace and dazzle reflexes were present. The pupil was miotic, which was thought to be in response to pain. On ophthalmoscopic examination, observation of the posterior segment of the eye was limited, but multiple raised retinal folds and a decrease in vascularity of the optic nerve were seen. A transpalpebral ultrasonographic examination of the orbit was performed (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

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Diagnostic Imaging Findings and Interpretation

A well-demarcated, intraorbital but extraocular mass ventral to the globe and extending into the retrobulbar space is evident (Figure 2). This mass results in indentation of the sclera but does not invade the globe, and the intraocular structures are of normal size and in the correct location. The mass has a homogenous echogenicity and is hyperechoic to the globe content and hypoechoic to the adjacent periorbital structures. The mass appears well demarcated and measures 4.8 x 4.4 cm (Figure 3). The periorbital bony structures are intact. The optic nerve cannot be imaged properly because of the space-occupying mass. The clinical and ultrasonographic findings are more indicative of a neoplasm and reduce the likelihood of a retrobulbar abscess or a cystic structure.

Treatment and Outcome

Because of the location, size of the mass, and associated pain, the mass was excised with the horse under general anesthesia. Because the mass was adherent to the third eyelid, complete excision of the mass along with the third eyelid was performed, but the globe was preserved. The mass did not adhere to the globe; however, it was focally attached to the upper eyelid in the dorsomedial corner. A corresponding small cutaneous nodule was also excised from the upper eyelid. On immunohistochemical analysis, sections of the mass were negative for S-100 protein. All samples were sent for histologic evaluation, and the diagnosis of an intraorbital sarcoid was confirmed. No recurrence was observed until 7 months after surgery when a small mass developed on the medial aspect of the right upper eyelid. This was resected while the horse was sedated and the surrounding area was medicated with cisplatin. At 2 years after surgery, the area was still tumor-free, with no signs of discomfort.

Comments

Prior to ultrasonography, a squamous cell carcinoma was considered most likely because it is the most common neoplasm affecting ocular and adnexal sites in horses. Ocular squamous cell carcinomas usually involve exophthalmos, although enophthalmos, third eyelid prolapse, and progressive conjunctival and eyelid swelling have all been reported to occur occasionally. Squamous cell carcinomas have a predilection for mucocutaneous junctions, and up to 50% of reported cases are in ocular sites. An intraorbital sarcoid was also considered likely because of the presence of suspected sarcoi ds in the periorbital skin. Sarcoi ds were suspected in the periorbital skin on the basis of their typical clinical appearance. A schwannoma (neurofibrosarcoma) was also considered as a possibility because of the proximity of the mass to the optic nerve and the difficulty in imaging this nerve with ultrasonography. The negative immunohistochemical result for S-100 protein, however, reduced the likelihood that the mass was a schwannoma. Because the horse was gray, a melanoma was also considered possible.

On ultrasonography, the mass appeared well demarcated with a homogenous echogenicity and was not infiltrating the globe structure or the periorbital bony structure. Squamous cell carcinomas are usually aggressive tumors that locally infiltrate surrounding tissues, so on the basis of ultrasonographic findings, this differential diagnosis was considered less likely. Intraorbital abscesses and cysts have also been described but would have a different ultrasonographic appearance; cysts have a hypoechoic, fluid-filled center, and abscesses tend to...
have an inhomogeneous appearance with an external capsule.\(^5\) Previously described intraorbital neoplasms include melanoma, neuroendocrine tumors, osteosarcoma, paranasal sinus osteoma, hemangiosarcoma, neurofibrosarcoma, meningioma, neurofibroma, and lipoma,\(^6–8\) all of which would require histopathologic confirmation.

To the authors’ knowledge, a sarcoid has not been previously documented as an intraorbital mass, focally attached to the upper eyelid. Intraorbital expansion of cutaneous periorbital sarcoids should be considered in the differential diagnoses list for intraorbital space-occupying masses in horses.


### New Veterinary Biologic Products

<table>
<thead>
<tr>
<th>Product name</th>
<th>Species and indications for use</th>
<th>Route of administration</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Bronchitis Vaccine, Georgia Type, Live Virus (Zoetis Inc, Lincoln, Neb, US Vet Lic No. 190)</td>
<td>For vaccination of chickens at one day of age as an aid in the prevention of disease caused by infectious bronchitis virus, Georgia type, Georgia 2008. Safety and efficacy were demonstrated in day-of-hatch birds receiving the product via spray.</td>
<td>Spray at day of age</td>
<td>USDA licensed 11/04/13</td>
</tr>
<tr>
<td>Trichomonas Foetus DNA test Kit (Life Technologies Corp, Austin, Tex, US Vet Lic No. 432)</td>
<td>For detection of <em>Trichomonas foetus</em> DNA from enriched media inoculated with preputial fluids from bulls.</td>
<td>N/A</td>
<td>USDA licensed 12/23/13</td>
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<tr>
<td>Canine Lymphoma Monoclonal Antibody (Vet Therapeutics Inc, Del Mar, Calif, US Vet Lic No. 453)</td>
<td>Efficacy and potency test studies are in progress. Aid in the treatment of T-cell lymphoma in dogs. Claim: A reasonable expectation of efficacy was demonstrated in dogs that received 2 doses (2.5 ± 0.5 mg/kg, IV) the first week followed by a single dose each week (IV) for 7 subsequent weeks following diagnosis of T-cell lymphoma.</td>
<td>IV</td>
<td>USDA licensed 1/22/14</td>
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