

Common Ophthalmic Neoplasms in Dogs & Cats

Georgina M. Newbold, DVM
Diane Hendrix, DVM, DACVO
University of Tennessee

Neoplastic lesions can affect every tissue of the eye in both dogs and cats and can occur in the orbit, adnexal tissues (eg, eyelids, conjunctiva), and uveal and retinal tissues inside the globe.¹

Orbital Tumors

Orbital masses can cause exophthalmia with decreased ocular retropulsion, strabismus, periocular swelling, and elevation of the third eyelid (**Figure 1**). Although nonneoplastic processes (eg, cellulitis, salivary cysts) may occur, many orbital masses are neoplastic, with a reported frequency of 57.6%.² Patients with cellulitis, such as that seen with a foreign body or orbital abscess, may present acutely and appear painful, whereas patients with neoplasia may have a more chronic history, typically with little discomfort until later stages of the disease process.

Common orbital neoplasms include carcinomas (eg, squamous cell carcinoma, adenocarcinoma), sarcomas (eg, osteosarcoma, fibrosarcoma), meningioma, and lymphoma.² Tumors may extend from local tissues (eg, sinonasal cavities) or originate from the bony or soft

tissue structures of the orbit; metastasis from distant sites occurs less often. Orbital mass diagnosis can be confirmed using a combination of imaging (eg, ultrasonography, CT, MRI) and biopsy sampling of associated tissues (**Figure 2**). Bony lysis is a common finding with many neoplasms.

Adnexal Tumors

Meibomian gland adenomas (**Figure 3**) are the most common eyelid tumor in dogs; in cats, squamous cell carcinoma is most prevalent (**Figure 4**).^{1,3} Other tumors that affect the eyelid or conjunctival tissues include papilloma (**Figure 5**), melanoma, hemangioma or hemangiosarcoma (**Figure 6**), and mast cell tumors (**Figure 7**, page 32). Adnexal tumors in dogs tend to be benign, whereas many eyelid neoplasms in cats have more malignant behavior.^{1,3}

Tumors of the Globe

Limbal melanocytomas (**Figure 8**, page 32) are benign, heavily pigmented lesions that occur most commonly in German shepherd dogs and Labrador retrievers.^{4,5} These tumors can expand locally but do not invade the globe or metastasize. They are treated via surgical debulking with diode laser ablation.⁴

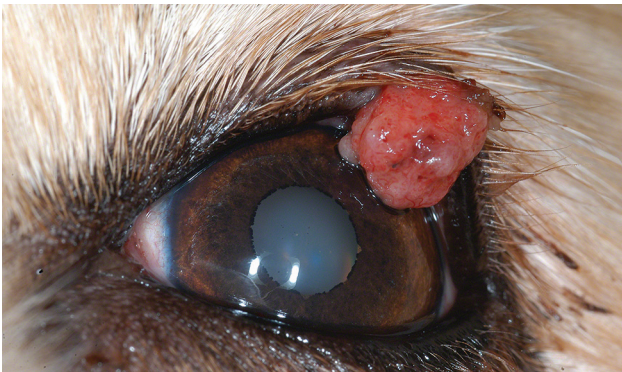
Continues on page 33



▲ **FIGURE 1** Marked exophthalmia with dorsolateral deviation of the globe, periocular swelling, and elevation of the third eyelid in an 8-year-old spayed Vizsla with adenocarcinoma of the right orbit



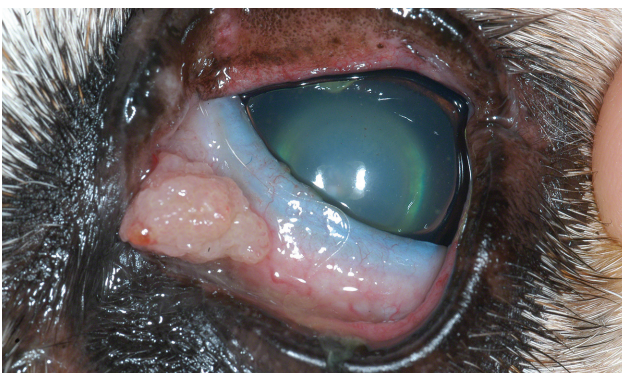
▲ **FIGURE 2** CT scan of a 7-year-old spayed crossbreed dog with orbital meningioma (**arrow**) that caused exophthalmia and blindness in the right eye



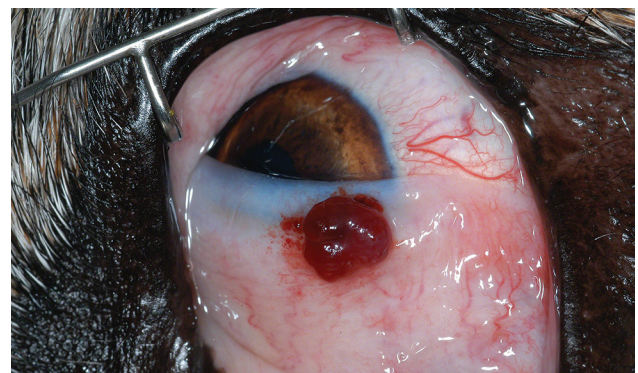
▲ **FIGURE 3** Meibomian gland adenoma on the left upper eyelid of a 14-year-old spayed crossbreed dog. Excision was curative.



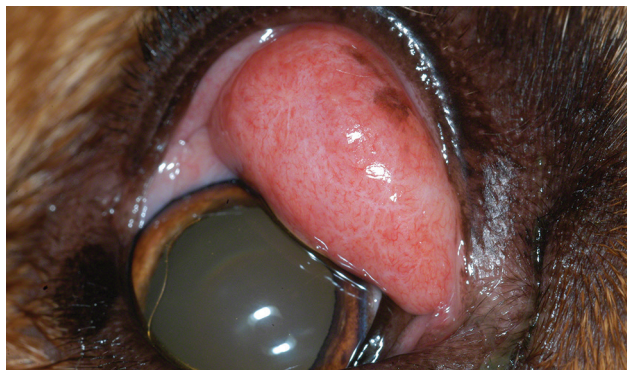
▲ **FIGURE 4** Squamous cell carcinoma at the medial canthus of the left eye of an 11-year-old spayed domestic shorthair cat. Treatment included 2 doses of strontium-90 plesiotherapy, followed by cryotherapy several months later. Despite aggressive treatment, the eye was eventually enucleated; definitive radiation therapy was performed and resolved the disease.



▲ **FIGURE 5** Reactive papilloma at the medial canthus of the left eye of a 12-year-old spayed crossbreed dog. Excision was curative.



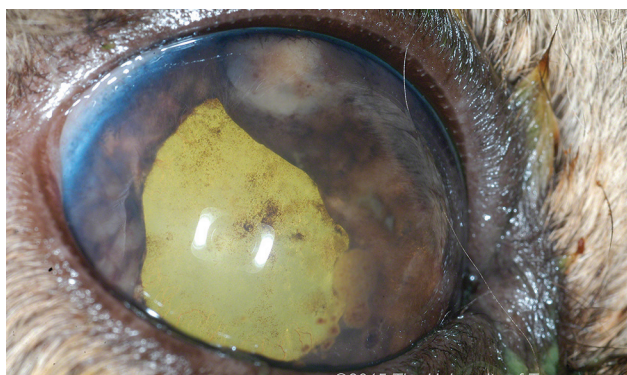
▲ **FIGURE 6** Hemangiosarcoma on the anterior surface of the left third eyelid of an 8-year-old boxer. Conjunctival hemangiosarcomas can be locally aggressive but do not commonly metastasize.⁸



▲ **FIGURE 7** Low-grade mast cell tumor in the dorsal palpebral conjunctiva of the right eye of a 7-year-old neutered crossbreed dog. Conjunctival mast cell tumors have a low risk for local recurrence,⁹ tend not to metastasize, and have a favorable prognosis, regardless of tumor grade.¹⁰



▲ **FIGURE 8** Limbal melanocytoma at the dorsotemporal aspect of the right eye of a 9-year-old spayed crossbreed dog. Because these benign lesions typically progress slowly, the owners elected to monitor rather than treat the lesion.



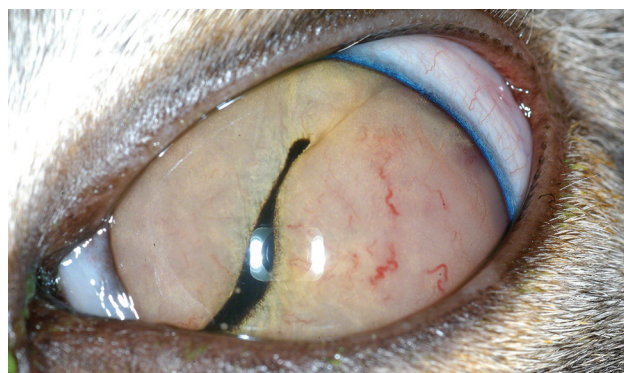
▲ **FIGURE 9** Malignant uveal melanoma causing dyscoria and pigment dispersion in the right eye of a 12-year-old spayed Persian cat. Glaucoma was present at the time of enucleation, which may be a poor prognostic indicator for long-term patient survival in cats with malignant uveal melanomas.^{11,12}



▲ **FIGURE 10** Diffuse iridal melanosis and/or possible melanoma in the left eye of an 11-year-old neutered domestic shorthair cat. Melanotic changes can be slowly progressive, and the decision to enucleate may be based on observation of changes over time, including thickening of the iris, dyscoria, or onset of glaucoma.^{11,12}



▲ **FIGURE 11** Ciliary body adenoma and hemorrhage in the anterior vitreous in the left eye of a 10-year-old neutered standard poodle. Enucleation was expected to be curative.



▲ **FIGURE 12** Left eye of an 8-year-old neutered domestic shorthair cat with stage V lymphoma. Abdominal ultrasonography and fine-needle aspiration revealed lymphoma in the kidneys and the left submandibular lymph node.

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The most common intraocular tumor in both cats and dogs is primary uveal melanoma (**Figure 9**).^{6,7} Although these tumors frequently exhibit nonmetastatic but potentially locally invasive behavior in dogs, a greater potential for metastasis is present in cats with iridal melanoma (**Figure 10**). Surgical removal of the globe is curative if metastasis has not occurred.

Other primary intraocular tumors include iridociliary body adenomas (**Figure 11**) and medulloepitheliomas. Lymphoma is the most common secondary metastatic neoplasia seen in the eye (**Figure 12**).^{1,7} Lymphoma can present with anterior uveitis, chorioretinitis, panuveitis, diffuse iridal thickening, or a discrete uveal mass. Although peripheral lymphadenopathy or other systemic signs are often seen with multicentric lymphoma, ocular signs may be the initial presenting clinical sign. ■

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