

## VETERINARY VOICE: Tips of the Trade

### Ophthalmology- Feline Diffuse Iris Melanoma

Signalment and incidence of metastasis?	Melanoma is the most common primary ocular tumor of dogs and cats. This is most commonly seen in cats older than 10 years with no predilection for breed or sex. The incidence of metastasis in most species is low with exception of cats (63% in one study of cats with their eyes enucleated). Metastasis may be noted up to 1-3 years after enucleation with spread to local lymph nodes, liver or lungs. Metastasis to bone has rarely been reported.
Hyperpigmentation or iris melanoma?	Brown hyperpigmentation of the anterior surface of the iris may start out as single or multi-focal pinpoint, flat regions, termed iris freckle or nevus. The hyperpigmentation may progress to diffuse iris hyperpigmentation or coalescing freckles but still without changing the contour of the eye, is termed iris melanosis. This is considered a benign process, but increasing darkness and size of dark areas can be observed over months to several years and the cells may eventually undergo malignant transformation into iris melanoma. Clinical changes suggestive of malignancy include increased thickness or mass formation in the iris stroma, changes to surface area of the iris (becomes fuzzy/velvet appearance), widespread involvement of the iris, change in pupil shape and mobility, elevation of intraocular pressure, and visualization of a dark mass through the pupil or extension to the sclera. Slit lamp examination may help to diagnose dark pigmentation from a mass and may reveal clumps of pigmented cells in the aqueous of the anterior chamber.
Treatment of iris melanosis?	Monitoring closely is the recommendation for small iris freckles and early iris melanosis. If these are getting larger, referral for laser photocoagulation may be an option. However, the use of this therapy and its ability to prevent development of iris melanoma and/or metastasis has not been reported. The treatment of choice is enucleation for advanced iris melanoma.
Diagnostics? When is enucleation justified?	The difficulty many practitioners face is determining when enucleation is justified. Ocular ultrasound and gonioscopy help to determine extent of the mass. Mass protrusion from the posterior iris or extension into the posterior segment supports invasiveness. Disruption or the iris epithelium, invasion of the scleral venous plexus, invasion of the ciliary body and presence of secondary glaucoma are important indicators of tumor invasiveness and have been related to shortened survival times. Thoracic radiographs and complete bloodwork should be performed prior to enucleation. Histopathology of the enucleated eye is required for definitive diagnosis. Mortality has been related to nuclear to cytoplasm ratio, anisokaryosis, number of nucleoli, and high mitotic index.
Questions?	The Veterinary Specialty Center of Tucson has a board-certified ophthalmologist available for questions and consultations on ophthalmic diseases and surgeries during the weekdays. She is also on call to provide consultations to VSCT emergency doctors and to perform emergency procedures for patients seen by the VSCT emergency service. Board-certified ophthalmologists have four additional years of training after veterinary school and are certified by the American College of Veterinary Ophthalmologists' to assure competency in advanced veterinary ophthalmology.
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