



COMMON SMALL ANIMAL LENS DISORDERS

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In this month's installment we briefly review some of the more frequently encountered disorders associated with the lens.

Persistent hyperplastic tunica vasculosa lentis (PHTVL) represents a failure of the vascular supply to the developing lens to regress, typically leading to cataract formation and visual impairment. Commonly affected breeds include the Doberman Pincher & Greyhound. Where indicated, the lens & associated vascular tissue may be surgically removed and patent vessels cauterized.

Nuclear sclerosis describes the progressive thickening of the lens due to ongoing lens-fiber deposition and resultant compression of the lenticular nucleus. Clinically, this process imparts a grey-blue appearance to the nucleus, typically becoming apparent after 7-8 years of age. Unlike cataracts, the presence of nuclear sclerosis does not impede the normal fundic view or reflex. Although a degree of refractive error may be associated with ageing changes, significant visual impairment is not generally noted clinically and neither medical nor surgical treatment is typically warranted.

A **cataract** describes any opacity of the normally transparent & avascular lens. Cataractogenesis occurs most commonly as a result of hereditary factors, however may also result from systemic disease (notably diabetes mellitus), lenticular trauma/inflammation, dietary deficiencies (notably associated with the use of milk-replacers), exposure to pharmacologic agents (notably ketoconazole), as a sequela to the retinal atrophies (RAs) & following exposure to therapeutic radiation. Changes may be unilateral or bilateral, symmetrical or asymmetrical and may develop over varying timeframes. Most breeds (& mixed breeds) may be affected by hereditary cataracts and multiple breed-related features including age of onset and rate of progression have been described. Lens-associated uveitis, if present, should be treated with topical anti-inflammatory agents in order to minimize the risk of subsequent glaucoma. Phacoclastic uveitis describes severe, acute intraocular inflammation as a result of the sudden exposure to lens-associated proteins following lens capsule laceration or rupture. If significant visual impairment is present, cataract surgery & lens-replacement may be indicated (pending the results of pre-surgical diagnostic testing including electro-retinal function).

The canine or feline lens may become **luxated** from their normal position within the patellar fossa posterior to the iris. This may be result of hereditary factors (predominantly abnormalities of the suspensory lens zonules and/or vitreous body), chronic intraocular inflammation, vitreous syneresis, glaucoma and/or trauma. Anterior lens luxation may be partial (termed "subluxation") or complete such that the lens becomes displaced into the anterior chamber. Associated changes may include corneal edema, uveitis,



Persistent primary vasculature



Mature cataract