

Equine Glaucoma

Why is it difficult to diagnose?



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Overview

Glaucoma is a group of diseases resulting in elevated intraocular pressure, loss of retinal ganglion cells and eventual vision loss. Glaucoma may be congenital, primary or secondary. The latter being the most common cause in horses. The equine eye is resistant to the effects of glaucoma. As a result the disease process may advance without the owners being aware of the problem.

DIFFICULT DIAGNOSIS

- Eye pressure can wax and wane
- Clinical signs are subtle early in the disease
- Extraocular muscle contraction increases IOP making tonometry difficult and inconsistent
- Auriculopalpebral nerve blocks should be performed when performing tonometry
- Head being lower than the heart can increase IOP
- Sedation can artificially lower the IOP

CAUSE OF GLAUCOMA IN HORSES

- Uveitis (most common cause)
- Appaloosas are predisposed
- Horses older than 15 years are predisposed
- Congenital glaucoma is rare
- Primary glaucoma is rare
- Trauma may lead to uveitis and secondary glaucoma
- Neoplasms may cause secondary glaucoma

Clinical Signs of Glaucoma - Equine Ophthalmology First Edition

Primary Glaucoma	Secondary Glaucoma
Initial Stages	Initial Stages
Focal or diffuse oedema Minimal pain Subtle ocular signs Minimal vision loss Haabe Striae	Persistent corneal oedema Severe pain Evidence of chronic uveitis Vision loss and blindness
Late Stages	Late Stages
Diffuse corneal oedema Enlarged eye Vision loss / blindness Mild to moderate discharge	Diffuse corneal oedema Enlarged eye Vision loss / blindness Signs of chronic uveitis Corneal vascularisation

Treatments

Medications, surgery or both are required to help control glaucomatous eyes. The underlying uveitis must be controlled with NSAID's both topically and systemically. The cornea must be rigorously examined before starting topical anti-inflammatory drops in cases of existing damage to the epithelium.

Useful Anti-glaucoma medications

- Topical beta-adrenegics (Timolol)
- Topical carbonic anhydrase inhibitors (Dorzolamide)

Drugs Potentially Contraindicated

- Topical cholinergics (Pilocarpine)
- Topical prostaglandin analogues (Lantanoprost)
- Atropine - will elevate the intraocular pressure

Surgical options for visual eyes

- Cyclophoto-coagulation - Laser
- Glaucoma shunt placement

Surgical options for blind painful eye

- Eye removal
- Intrascleral prosthetic
- Intravitreal gentamicin



Take Home Messages

Glaucoma is difficult to diagnose in horses

It is usually secondary to uveitis

Protracted treatment is required

Left untreated will lead to vision loss and pain