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Cataracts in the horse

Cataracts are opacities of the lens and are the most frequent congenital ocular defect in foals.

Horses manifest varying degrees of blindness as cataracts mature. Very small incipient lens opacities are common and not associated with blindness. As cataracts mature and become more opaque, the degree of blindness increases. The tapetal reflection is seen with incipient and immature cataracts, but is not seen in mature cataracts. Examination of the fundus may be difficult due to the cataract. The rate of cataract progression and development of blindness cannot be predicted in most instances.

The basic mechanism of cataract formation is a decrease in soluble lens proteins, failure of the lens epithelial cell sodium pump, a decrease in lens glutathione, and lens fiber swelling and fiber membrane rupture. Heritable, traumatic, nutritional, and postinflammatory etiologies have been proposed for equine cataracts. Cataracts secondary to equine recurrent uveitis (ERU) or trauma are frequently seen in adults. True senile cataracts that interfere with vision are found in horses older than 20 years. Increased cloudiness of the lens occurs with age and is called nuclear sclerosis. It is common in older horses, but vision is clinically normal, as nuclear sclerosis does not cause vision loss.

Equine Cataract Surgery

Most veterinary ophthalmologists recommend surgical removal of cataracts in foals less than 6 months of age if the foal is healthy, no uveitis or other ocular problems are present, and the foal’s personality will tolerate aggressive topical medical therapy.

Horses considered for lens extraction should be in good physical condition. Complete ophthalmic and general physical examinations should be performed. Examine foals for subclinical Rhodococcus pneumonia and treat it prior to surgery if present. Adult horses with visual impairment due to cataracts are also candidates for cataract surgery.

Slow or absent pupillary light reflexes (PLRs) may indicate active iridocyclitis with or without posterior synechiation, retinal disease, optic nerve disease, or iris sphincter muscle atrophy.

Afferent pupillary defects in a cataractous eye cannot be attributed to the cataract alone, as well as the fact that normal PLRs do not exclude some degree of retinal or optic nerve disease. Any signs of inflammatory eyelid, conjunctival, or corneal disease, and anterior uveitis should delay cataract surgery until the inflammation has been successfully treated. B-scan ultrasound and electroretinography are beneficial in assessing the anatomic and functional status of the retina if a cataract is present. General anesthesia with its attendant
risky is required for cataract surgery.

**Phacoemulsification cataract surgery** is the most useful technique for the horse. This extracapsular procedure through a 3.2mm corneal incision utilizes a piezoelectric handpiece with an ultrasonic titanium needle in a silicone sleeve to fragment and emulsify the lens nucleus and cortex following removal of the anterior capsule. The emulsified lens is then aspirated from the eye while intraocular pressure is maintained. The thin posterior capsule is left intact. There is little inflammation postoperatively in most horses following phacoemulsification cataract surgery and a quicker return to normal activity with phacoemulsification than other surgical techniques.

The results of cataract surgery in foals by experienced veterinary ophthalmologists are generally very good, but the cataract surgical results in adult horses with cataracts caused by ERU are often poor. The problem is that new blood vessels form on the iris and anterior lens capsule in the eyes with ERU and they can bleed during the surgeries. The surgeon often cannot stop the hemorrhage and severe hyphema results.

Postoperative complications include persistent iridocyclitis and plasmoid aqueous, fibropupillary membranes, synechiae, corneal ulceration, corneal edema, posterior capsular opacification, retained lens cortex, wound leakage, vitreous presentation into anterior chamber, retinal detachment, and infectious endophthalmitis.

Slight corneal edema is usually present from 24 to 72 hours postoperatively. One week following surgery the pupil should be functional, any fibrin in the anterior chamber resorbing, and the fundus visible. Three weeks following surgery the eye should be nonpainful, the patient visual, pupillary movement normal, and the ocular media clear.

**Aphakic Vision in Horses**

Most reliable reports of vision in successful cataract surgery in horses indicate vision is functionally normal postoperatively. From an optical standpoint, the aphakic eye should be quite far-sighted or hyperopic postoperatively, and was +9.94D in one study. Images close to the eye would be blurry and appear magnified.

**References**