

# Ophthalmologic Disorders in Aged Horses



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## KEYWORDS

• Geriatric • Horse • Eye • Uveitis • Blind

## KEY POINTS

- Ocular abnormalities are common in aged horses.
- Superficial nonhealing corneal ulcers seem more prevalent in older horses, perhaps as a result of decreased corneal sensitivity.
- Significant ocular disorder as a result of recurrent uveitis can manifest more clearly as horses age. Important consequences of recurrent uveitis are cataracts and glaucoma.
- Several retinal and vitreal abnormalities are commonly seen in old horses, with variable effects on vision.

## INTRODUCTION

Ophthalmologic disease seems to be common in geriatric animals. Analysis of the records of a large number of geriatric ( $\geq 20$  years old) horses admitted to an American veterinary hospital indicated that 11% had ocular disease.<sup>1</sup> However, this prevalence increased when the general equine geriatric population was considered. Studies in the United Kingdom have shown that 94% of horses 15 years of age or older had at least 1 ocular abnormality detected by a veterinarian.<sup>2-4</sup> This number increased to 100% when only horses 30 years of age or older were examined.<sup>5</sup> Only approximately 3.5% of owners reported any ocular problems in these horses, and 10% noted ocular discharge. Survey studies in Australia have also shown a high prevalence of ocular disease; 22.3% of horses 15 years of age and older in Queensland were reported to have ocular discharge, making this the fourth most common clinical sign mentioned by owners.<sup>6</sup> A clear positive correlation was noted between the presence of ocular discharge and increasing age. Again, although ocular discharge seemed to be common, only 3.3% of owners reported ocular problems in their horses and only 2.6% perceived eyesight as an important health issue. It seems that a large number of aged horses may have undetected ocular disease that could be a source of chronic

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Conflicts of Interest: The author declares no conflicts of interest.

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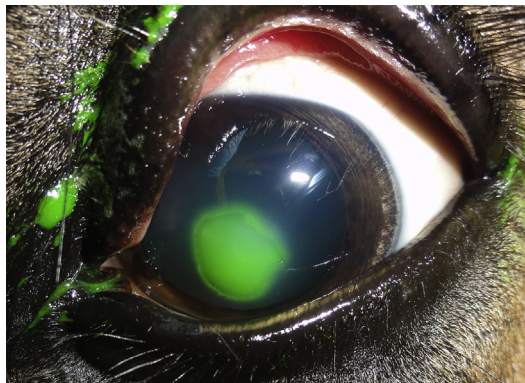
low-grade discomfort. In addition, some of these ophthalmic abnormalities may have a significant effect on the horses' vision, with important human safety and animal welfare implications. This article reviews the most common ocular abnormalities in geriatric horses.

## CORNEAL DISEASE

Corneal disease is a common problem in equine practice.<sup>7</sup> In a study assessing the prevalence of disease in a geriatric ( $\geq 15$  years old) population, corneal lesions were detected in 2.6% of the horses examined.<sup>3</sup> These abnormalities included corneal edema, opacities, and scarring.

As part of the aging process, changes occur that affect the ocular surface. In humans, the lacrimal gland has been shown to decrease its secretion with age.<sup>8</sup> Tear deficiency and evaporative dry eye syndromes are rare in horses,<sup>9</sup> but these may become more common with increasing age.<sup>10</sup> Although studies have shown no difference in the amount of tear production between young and old horses,<sup>11</sup> orbital fat loss may result in enophthalmos and inadequate spreading and stability of the tear film.<sup>10</sup> In addition, the composition of the tear film also varies. The levels of lactoferrin and lysozyme, two potent antimicrobial agents, have been shown to decrease with age.<sup>8,12</sup> Other factors can also influence the immune response on the ocular surface in older animals, such as a reduced phagocytic activity of polymorphonuclear leukocytes and impaired T-cell function.<sup>12</sup> This combination of factors can increase the susceptibility to microbial disease, especially keratomycosis, and may make these conditions more difficult to treat as horses get older. For these reasons, it may be advisable to select bactericidal rather than bacteriostatic antimicrobials when treating bacterial keratitis. In addition, topical corticosteroids should be used with caution where these are warranted for ocular conditions.<sup>12</sup>

Superficial ulcerative keratitis is one of the most commonly observed ophthalmic problems in horses. In most cases the ulceration heals without complications in 24 to 72 hours<sup>13</sup>; however, on some occasions these ulcers show a prolonged healing time or fail to epithelize. These superficial, nonhealing corneal ulcers are characterized by the presence of chronic ( $>1$  week) ulceration with redundant, loose epithelial borders and no evidence of stromal involvement, infectious agents, or inflammatory cellular infiltrate<sup>7,13-15</sup> (**Fig. 1**). Superficial nonhealing corneal ulcers can



**Fig. 1.** Superficial, nonhealing, corneal ulcer in a 15-year-old mare. Note the poorly defined ulcer margins and the underrunning of fluorescein beyond the edge of the ulcer, indicating poorly adhered epithelium.

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