

Evaluation of eye diseases in cats and dogs: A retrospective study: 200 cases (2021-2022)

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ABSTRACT

In this study, the incidence of ocular diseases in cats and dogs brought to Burdur Mehmet Akif Ersoy University Animal Hospital Surgery Clinic between 2021-2022 was investigated. The material of study consisted of 200 patients (103 dogs and 97 cats). Ocular pathology was diagnosed in 35.05% of the examined cats and 35.92% of the examined dogs. The most common cat breed with ocular pathologies was mixed breeds with a rate of 29.8%, and the most common dog breed was Golden Retrievers with a rate of 82.3%. When the anatomical localization of the pathologies encountered in the cats and dogs included in the study was evaluated, it was seen that the most common anatomical region with pathologies in cats was the cornea, and the most common anatomical region with pathologies in dogs was the lens. According to the data recorded this study the study, the most common ocular pathologies were corneal damage 14.7% for cats, and senile nuclear sclerosis 36.75% for dogs. In conclusion, this study aimed to help veterinarians to approach ocular diseases by identifying the most common ocular diseases in cats and dogs.

INTRODUCTION

The eye is the organ that has undertaken an important function such as vision and is the most sensitive to external factors and diseases (Kahn, 2007). Ocular diseases form an important part of small animal practice (Scountzou, 2003). The occurrence of ocular diseases may be caused by physical effects such as traumas, infectious and metabolic factors (Akin & Samsar, 2005). Congenital or acquired ocular and palpebral diseases are frequently encountered in cats and dogs (Glaze, 1997; Narfstrom 1999). It can also be seen in congenitally developing disorders specific to species and breeds (Akin & Samsar, 2005). In some cases, systemic diseases can be clinically reflected in the eye. Early and prominent ocular findings can be observed in all infectious, neoplastic, autoimmune, nutritional, toxic, and metabolic diseases (Ollivier et al., 2013; Schaer et al., 2006).

The eye is very sensitive organ, the function of which may be affected even with a mild insult to its homeostasis, due to direct injury or other local or systemic diseases and studies on ocular affections may provide information on the prevalence of ocular diseases and also help to limit diagnostic possibilities and treatment options (Kumar et al., 2018).

In this study, the ocular diseases of 97 cats and 103 dogs brought to Burdur Mehmet Akif Ersoy University Veterinary Faculty Animal Hospital Surgery Clinic between 2021-2022 were evaluated retrospectively.

MATERIAL and METHODS

The material of this study consisted of 97 cats and 103 dogs brought to Burdur Mehmet Akif Ersoy University Animal Hospital Surgery Clinic between 2021-2022. Routine eye examinations were performed after obtaining the anamnesis of all cases. In addition to a routine ocular examination, Schirmer tear test and fluorescein test were used when necessary. As a result of routine ocular examinations, the incidence of healthy and pathological cases was determined on the basis of species. While evaluating the pathological cases, the breeds in which the pathology was seen most frequently, the frequency and localization of the lesion on the basis of breed were determined. The pathological cases encountered as a result of the examinations made for this purpose were recorded on the basis of species and their photographs were taken.

RESULTS

In this study, 97 cats and 103 dogs brought to Burdur Mehmet Akif Ersoy University Animal Hospital Surgery Clinic between 2021-2022 were examined. The recorded pathologies and breeds were converted into data by calculating their values in the percentile system. Ocular pathology was diagnosed in 35.05% of the examined cats and 35.92% of the examined dogs (Figure 6, Figure 7). The cat breed with the most ocular pathologies was mixed breed with a rate of 29.8% (Figure 8). The dog breed with the most ocular pathologies was Golden Retrievers with a rate of 82.3% (Figure 9). Ocular disease diagnosed in cats were recorded as corneal necrosis, synechia, blepharospasm, heterochromia, herpes virus infection, uveal melanoma, symblepharon, lens luxation, uveitis, bacterial in-

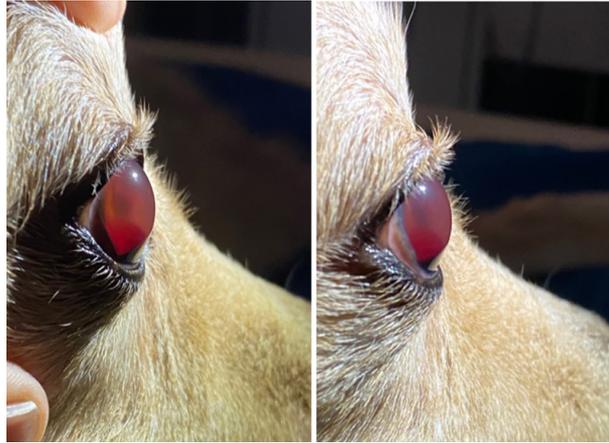


Figure 1. A case of hyphema caused by neoplasia in a dog.



Figure 2. A case of microphthalmia in a dog.



Figure 3. A case of fluorescein positive corneal necrosis in a cat.

fection, hyphema, descemetocoele hernia, cartilage eversion, entropion, anisocoria, corneal damage, foreign body, corneal ulcer (Figure 3, Figure 4, Figure 5). Ocular disease diagnosed in dogs were recorded as senile nuclear sclerosis (SNS), ca-

taract, corneal damage, microphthalmia, papilloma, hyphema, glaucoma, corneal edema, neoplasia, heterochromia, scleral hemorrhage, and uveitis (Figure 1, Figure 2). The anatomical localization of the pathologies encountered in the cats and

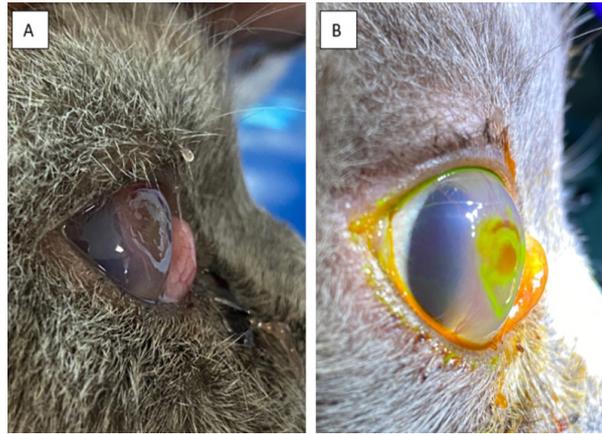


Figure 4. Corneal ulcer caused by trauma in a cat (A), fluorescein dye positive appearance (B).



Figure 5. A case of synechia in a cat.

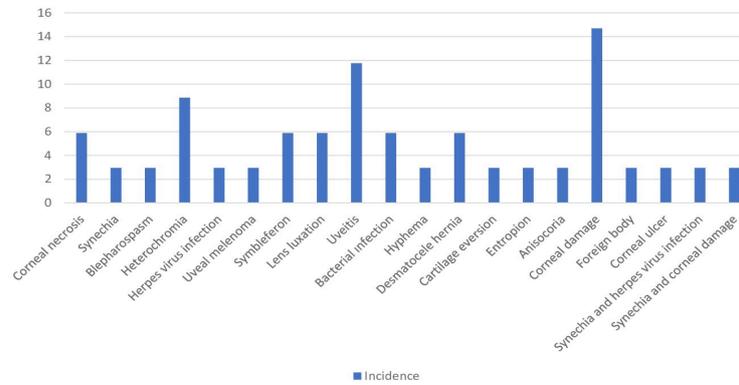


Figure 6. The percentage incidence of eye pathologies recorded in cats is shown in the graphic.

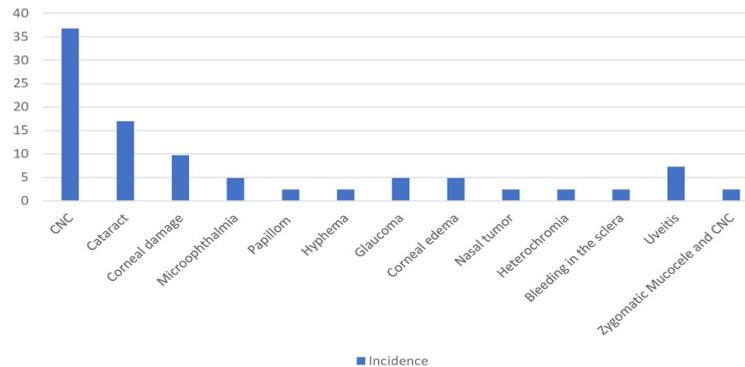


Figure 7. The percentage of occurrence of eye pathologies recorded in dogs is shown in the graphic.

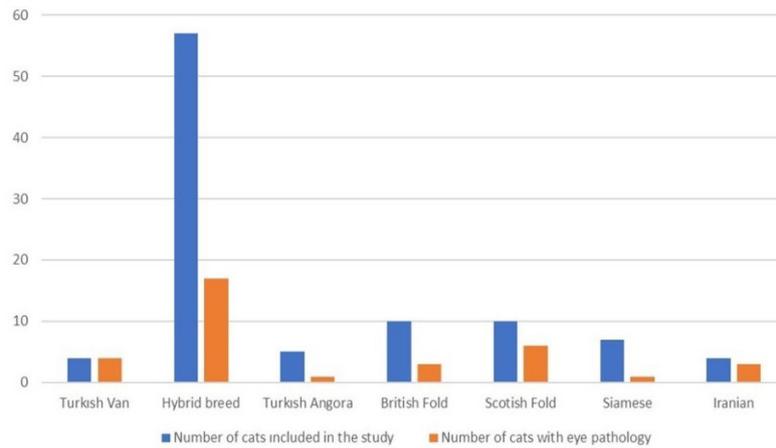


Figure 8. Cat breeds (Blue) included in the study and the number of cats with eye pathology (Orange) by breed are shown in the graphic.

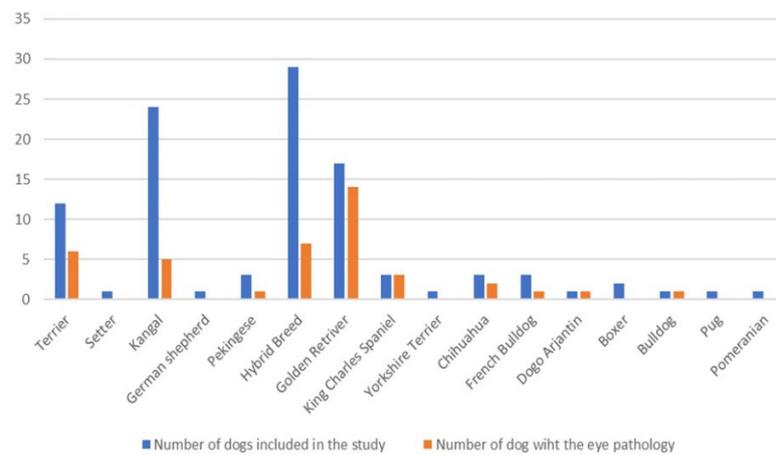


Figure 9. The dog breeds (Blue) included in the study and the number of dogs with eye pathology (Orange) by breed are shown in the graphic.

dogs included in the study was evaluated, it was seen that the most common anatomical region with pathologies in cats was the cornea, and in dogs was the lens. The most frequently diagnosed ocular disease in cats was recorded as corneal damage with rate of 14.7%, and in dogs was recorded as SNS with a rate of 36.75%.

DISCUSSION

Akinrinmade and Ogungbenro (2015), reported a total of 231 cases of ocular disease out of a total of 3,488 cases examined in their study. Kumar et al. (2018), reported a total of 4500 dog clinical cases with different clinical effects over a period of more than one year, and 60 dogs were brought with ophthalmological complaints by their owners. Han et al. (2019), examined 278 animals from 9 species (cat, dog, cattle, sheep, goat, horse, bird, turtle, rabbit) with ocular disease. Devci et al. (2020), evaluated 30 ocular and palpebral diseases of different localization and type in a total of 201 cases in cats and dogs (64 cats and 137 dogs). Uzunlu et al. (2020), diagnosed ocular disease in 78 (46.43%) cats and 90 (53.57%) dogs out of 5000 patients in their study. In this study, 200 cases (97 cats and 103 dogs) brought to Burdur Mehmet Akif Ersoy

University Animal Hospital Surgery Clinic between 2021-2022 were examined.

Kumar et al. (2018), found the incidence of ocular involvement in dogs to be 1.33%. In this study, ocular pathology was diagnosed in 35.05% of the examined cats and 35.92% of the examined dogs. Kumar et al. (2018), when they evaluated the distribution of cases by breed, Pugs (28.3%) showed the highest prevalence of ocular diseases, followed by mixed breeds (21.7%) and Labrador Retriever (20%). Ocular affections were also reported in other breeds like Spitz (15%), German Shepherd Dog (11.7%) whereas Bully breed had the least incidence (3.3%) of ocular affections. Akinrinmade and Ogungbenro (2015), evaluated breeds with ocular disease in their study, they found that the Alsatian breed was the most affected (22.08%), while other breeds such as Toy breed, Rottweiler, Boerboel and Mongrel were equally and moderately affected. They identified the Caucasian breed as the breed with the lowest incidence (2.16%). Uzunlu et al. (2020), revealed that the dog breed with the most ocular disease was the mixed breed (34.44%), and the cat breed with the most common ocular disease was the mixed breed (93.59%). In the study, the cat breeds with the most common ocular disease were mixed breeds with a rate of

29.8%, while the dog breed with the most ocular disease was the Golden Retriever breed with a rate of 82.3%.

Akinrinmade and Ogungbenro (2015), classified ocular diseases anatomically in their study, they were observed that the highest involvement occurred in the palpebra and/or conjunctiva (58.01%) and the least involvement in the lens (22.51%) and cornea (19.48%) occurred. Gültekin (2020), revealed the corneal lesions (48.3%) are the most common ocular diseases in brachiocephalic breeds. Han et al (2019), reported that the most commonly affected anatomical regions were the cornea (39.93%), conjunctiva (36.7%), retina (6.48%), palpebra (5.8%). When the anatomical localization of the pathologies encountered in the cats and dogs included in this study was evaluated, in cats was the cornea, and in dogs was the lens.

Kumar et al. (2015), reported the most observed ocular diseases as pigmentary keratitis/keratoconjunctivitis (21.7%), corneal ulcer/injury (21.7%), corneal opacity (18.3%), epiphora (11.6%), and cloudy eye (8.3%). Deveci et al (2020), reported that the most common ocular diseases were conjunctivitis (17.91%) and glandula nictitans prolapse (11.94%). Han et al. (2019), reported that the most common ocular diseases in all 278 cases were keratitis (34.17%) and conjunctivitis (31.29%). In a study conducted by Pandey et al. (2018), on the incidence of ocular diseases in dogs, they stated that the cataract in dogs. In this study, the ocular pathologies diagnosed in these cats are corneal necrosis, synechia, blepharospasm, heterochromia, herpes virus infection, uveal melanoma, symbleron, lens luxation, uveitis, bacterial infection, hyphema, descemetocoele hernia, cartilage eversion, entropion, anisocoria, foreign body damage, and corneal ulcer. The ocular pathologies diagnosed in dogs were SNS, cataract, corneal damage, microphthalmia, papilloma, hyphema, glaucoma, corneal edema, neoplasia, heterochromia, scleral hemorrhage, and uveitis. When the incidence of ocular pathologies diagnosed in cats was examined, corneal damage was recorded as 14.7%, and SNS was the most common pathological case in dogs with a rate of 36.75%.

In a study of 47 dogs with palpebral tumors in dogs, the most common palpebral tumor was found to be meibomian epithelioma (36.17%), and papilloma was observed in 1 dog (2.12%) (Kaya et al., 2018). In this study, the incidence of papilloma in dogs was recorded as 2.43%.

CONCLUSION

As a result; in this study, a retrospective evaluation of 200 cases in cats and dogs with various ocular and palpebral diseases is presented in this study. It has been determined that many of the ocular and palpebral diseases are more common in cats than in dogs.

DECLARATIONS

Ethics Approval

This study does not present any ethical concerns.

Conflict of Interest

The authors declared that there is no conflict of interest.

Consent for Publication

Not applicable.

Author Contributions

Idea, concept and design: ÖŞŞ, MNC

Data collection and analysis: ÖŞŞ, MNC, BN

Outline of the article: ÖŞŞ, MNC, BN

Critical review: ÖŞŞ

Data Availability

The author has provided the required data availability statement, and if applicable, included functional and accurate links to said data therein.

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