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Evaluation of Eye Diseases Encountered in Cats: A Retrospective Study (2020-2023)

Emine ÇATALKAYA[1,a,✉], Berna ERSÖZ-KANAY[1,b], Sadık YAYLA[1,c], Nahit SAYLAK[1,d], Ahmet BAYAT[1,e]

[1]Department of Surgery, Faculty of Veterinary Medicine, Dicle University, Diyarbakır/TÜRKİYE

[a]ORCID: 0000-0001-7884-5407; [b]ORCID: 0000-0001-5165-0618; [c]ORCID: 0000-0001-6734-421X
[d]ORCID: 0000-0003-2008-5403; [e]ORCID: 0000-0003-1336-3196

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Abstract

The eye is a sensory organ sensitive to external factors, infections and metabolic disorders and eye diseases have a very important place among surgical diseases. This study aimed to report the distribution of eye diseases encountered in cats brought to Dicle University Veterinary Faculty Hospital in the last 4 years (2020-2023) and to contribute to veterinary practice. The study material consisted of 291 cats of different ages, genders and breeds diagnosed with eye disease, brought to Dicle University Veterinary Faculty Animal Hospital between January 2020 and September 2023. Following the history of the cats, a detailed eye examination was performed and the diagnosed eye problem was recorded. In the cats included in the study, conjunctivitis (21.15%), keratitis (19.59%), corneal ulcer (14.09%), keratoconjunctivitis sicca (9.62%), glaucoma (3.44%), uveitis (4.12%), iris staphyloma (4.12%), symblepharon (3.78%), panophthalmitis (3.44%), corneal necrosis (3.09%), membrane nictitans protrusion (1.72%), chemosis (1.72%), entropion (1.37%), cataract (1.03%), hypopion (0.69%), proptosis (0.34%), local retinal detachment (0.34%) and dermoid cyst (0.34%) were seen. As a result, conjunctiva and corneal diseases were commonly encountered in cats. In order to prevent visual impairment, it is important not to neglect routine eye examinations and to diagnose and treat diseases early.

Key Words: Cat, conjunctivitis, cornea, eye, keratitis

Kedilerde Karşılaşılan Göz Hastalıklarının Değerlendirilmesi: Retrospektif Bir Çalışma (2020-2023)

Öz

Göz, dış etkenlere, enfeksiyonlara, metabolik bozukluklara duyarlı bir duyu organıdır ve göz hastalıkları cerrahi hastalıklar içerisinde önemli bir yere sahiptir. Bu çalışmada Dicle Üniversitesi Veteriner Fakültesi Hastanesine son 4 yıl içinde (2020-2023) getirilen kedilerde karşılaşılan göz hastalıklarının dağılımını bildirmek ve veteriner pratiğe katkı sağlamak amaçlandı. Çalışma materyalini Ocak 2020 ile Eylül 2023 yılları arasında Dicle Üniversitesi Veteriner Fakültesi Hayvan Hastanesi getirilen göz hastalığı teşhisi konan farklı yaş, cinsiyet ve ırktaki 291 kedi oluşturdu. Anamnezi takiben kedilerin detaylı göz muayeneleri yapıldı ve teşhis edilen göz problemi kayıt altına alındı. Çalışma kapsamına alınan kedilerde konjunktivitis (%21.15), keratitis (%19.59), kornea ülseri (%14.09), keratokonjunktivitis sikka (%9.62), glokom (%3.44), uveitis (%4.12), iris stafilomu (%4.12), simbleferon (%3.78), panoftalmi (%3.44), kornea nekrozu (%3.09), membrana niktitans protrüzyonu (%1.72), şemozis (%1.72), entropion (%1.37), katarakt (%1.03), hipopion (%0.69), proptozis (%0.34), lokal retinal ayrılma (%.34) ve kist dermoid (%0.34) vakaları görüldü. Sonuç olarak kedilerde yaygın olarak konjunktiva ve kornea hastalıkları ile karşılaşıldı. Görme işlevinin bozulmaması için rutin göz muayenelerinin aksatılmaması, hastalıkların erken tanı ve tedavisinin yapılması önemlidir.

Anahtar Kelimeler: Göz, kedi, keratitis, konjunktivitis, kornea

INTRODUCTION

The eye, which has an important function such as vision, is an organ that is sensitive to external influences and diseases (1-3). Eye health is important for the continuity of visual function and for this, early diagnosis and treatment of diseases is necessary (2,4,5). Many eye problems; cause decreased vision, vision loss and pain. This situation negatively affects the patient's comfort in life. Diseases of the eye and its appendages in cats may be congenital or acquired. In addition, infectious causes or metabolic diseases (2,3), trauma and allergic causes can also be seen among the causes (2,3,6). In some cases, systemic diseases may be reflected clinically in the eye. The eye is affected early and significantly in many infectious, neoplastic, autoimmune, nutritional, toxic and metabolic diseases (3,7-9). Since the structures that make up the eye are sensitive, homeostasis may be disrupted due to direct injury or local or systemic diseases. Even a slight deterioration in eye homeostasis negatively affects visual function (1,3,9,10). Conjunctivitis, keratitis, keratoconjunctivitis sicca, uveitis, corneal ulcer and corneal necrosis are among the common eye problems in cats (3,4,11).

In this study, it was aimed to evaluate the eye diseases encountered in cats brought to Dicle University Veterinary Faculty Hospital between 2020-2023 and to contribute to veterinary practice in this context.

MATERIAL AND METHODS

The study material consisted of 291 cats of different ages, genders and breeds diagnosed with eye disease among the cats brought to Dicle University Veterinary Faculty Animal Hospital between January 2020 and September 2023. In all cases, following the anamnesis information, the anatomical structures of the eye, such as the eyeball, palpebrae and conjunctiva were examined in a bright environment. The cats' movements and sensitivity to the environment were then monitored. In all cases, Schirmer I test was performed before manually examining the eye and its surroundings to ensure that the amount of tears was not affected by manipulations during the examination. For this purpose, the notched part of the schirmer test strip (ERC Schirmer test strip, ERC Sağlık A.Ş. Türkiye) was folded, placed on the inside of the lower eyelid and kept for 1 minute. The amount of tears absorbed by the strip was then determined. Subsequently, intraocular pressure was measured with a tonometer (İcare Tonovet, Finland). It was considered normal for the Schirmer I test to be in the range of 10-20 mm/min and the intraocular pressure to be in the range of 15-30 mm/Hg. Then, the cats were taken into a dark room and examined with a light source for pupillary light reflex and other visual reflexes. Additionally, the anatomical structures that make up the eye (camera anterior and posterior, lens, retina) were examined with an ophthalmoscope (Gowlands Otoscope Ophthalmoscope set, Irland). Ultrasonographic examinations of the cases were also performed. Abnormalities detected in the retina during ultrasonographic and ophthalmoscopic examination were photographed with a fundus camera. (ClearView 2, USA).

Fluorescein staining was performed in cases with suspected corneal damage. By staining the cornea green and other examinations, the depth and severity of corneal damage were tried to be determined and the diagnosed diseases were recorded.

RESULTS

It was determined that a total of 3271 cats came to Dicle University Veterinary Faculty Animal Hospital between January 2020 and September 2023, and 291 (8.9%) of these cats were diagnosed with eye disease. The cats diagnosed with eye disease were of different breeds, ages and genders. The distribution of cat breeds diagnosed with eye problems is given in Figure 1. The age range was determined to be 1 month to 6 years (average 9.9 months). 139 (47.76%) of the cases were male and 152 (52.23%) were female.

Conjunctivitis (n=79), keratitis (n=57) and corneal ulcer (n=41) were identified as the most common eye problems. Additionally, keratoconjunctivitis sicca (n = 28), uveitis (n = 12), iris staphyloma (n = 12), symblepharon (n = 11), glaucoma (n = 10), panophthalmitis (n = 10), corneal necrosis (n =9), membrane nictitans protrusion (n=5), chemosis (n=5), entropion (n=4), cataract (n=3), hypopion (n=2), proptozis (n=1), cases of dermoid cyst (n=1) and local retinal detachment (n=1) were seen. Images of some cases encountered in cats are given in Figures 2, 3, 4 and 5. Additionally, the distribution of eye problems by years is given in Table 1.

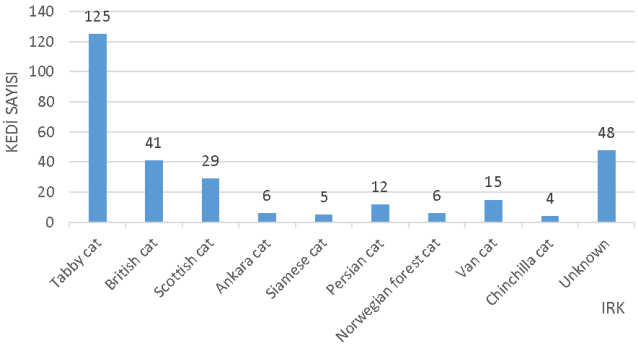

Figure 1. Distribution of cat breeds diagnosed with eye problems

Figure 2. A. A case of keratoconjunctivitis sicca in a Siamese kitten. B. Symblepharon case encountered in a tekir cat.

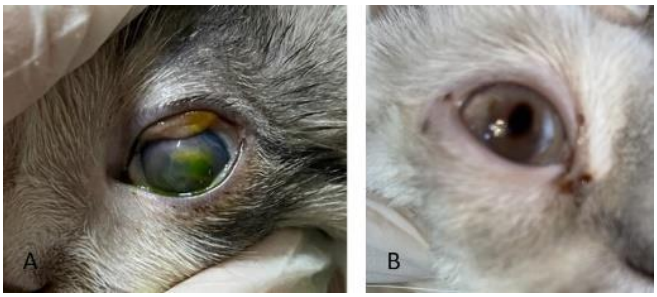

Figure 3. A. Fluorescein staining of the cornea due to corneal damage in a case of keratitis in a tekir cat. B. A case of corneal necrosis observed in a Scottish cat.

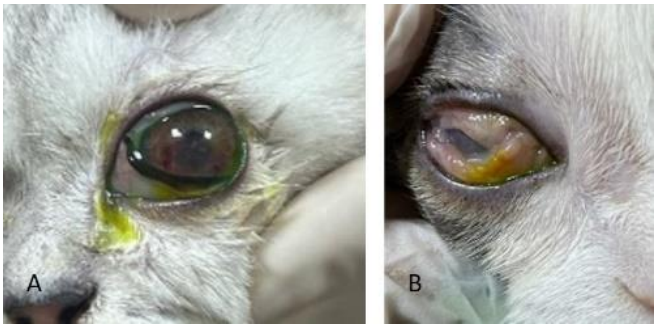

Figure 4. A. A case of uveitis in a British cat. B. A case of chemosis in a Tekir cat.

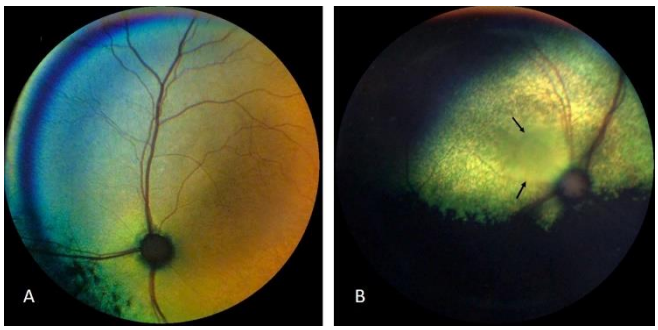

Figure 5. Retinal images of some cases. A. Healthy cat retina, B. Local retinal detachment (shown between black arrows)

Table 1. Distribution of cases by years

Disease	2020	2021	2022	2023	Total	%
Conjunctivitis	11	20	23	25	79	21.15
Keratitis	12	17	17	11	57	19.59
Corneal ulcer	5	10	17	9	41	14.09
Keratoconjunctivitis sicca	8	7	7	6	28	9.62
Glaucoma	2	4	2	2	10	3.44
Uveitis	4	3	3	2	12	4.12
Iris staphyloma	-	4	5	3	12	4.12
Symblepharon	2	2	4	3	11	3.78
Panophthalmia	3	3	2	2	10	3.44
Corneal necrosis	1	1	3	4	9	3.09
Membrane nictitans protrusion	-	1	2	1	5	1.72
Chemosis	1	2	1	1	5	1.72
Entropion	-	1	2	1	4	1.37
Cataract	1	-	1	1	3	1.03
Hypopion	-	1	1	-	2	0.69
Proptosis	-	-	1	-	1	0.34
Cyst dermoid	-	-	1	-	1	0.34
Local retinal detachment	-	-	-	1	1	0.34
Total	50	76	92	73	291	100

DISCUSSION AND CONCLUSION

The eye is a very complex organ in terms of structure and function. Direct and/or indirect disorder or infection in its anatomical structures affects the function of the eye (1,12). Studies on the eye and its structures are very important as ocular interventions require more experience, skill and sensitivity, and also in preventing vision loss. Previous papers or reports published on eye diseases can provide information about the prevalence of ocular diseases and also contribute to clinical practice on diagnostic possibilities and treatment options (3,12,13). Eye disease has been reported in different studies, respectively Han et al. (2) 278 cases (9 different species; cat, dog, cattle, sheep, goat, rabbit, horse, bird, turtle), Uzunlu et al. (11) 78 cats and 90 dogs, Deveci et al. (4) 64 cats and 137 dogs. In a study conducted by Şirin et al. (3), they reported that they detected ocular pathology in 35.05% of the cats examined. In this study, cats diagnosed with eye problems between January 2020 and September 2023 were evaluated and eye problems were detected in 291 of 3271 cats (8.9%) in this date range. Uzunlu et al. (11) reported in their study that ocular pathologies were more common in mixed-breeds in both dogs and cats (34.44% and 93.59%, respectively). Şirin et al. (3) reported a rate of 29.8% in mixed breed cats. In this study, only eye problems encountered in cats were evaluated and eye problems were determined to be common in Tekir cats (42.96%). This may be related to the fact that homeless and untracked cats largely consist of Tekir cats.

All cats, regardless of breed or gender, are susceptible to conjunctivitis. Sometimes the infection begins in a small area and spreads to other tissues of the eye over time (14). Conjunctivitis is one of the most common eye problems in cats (3,11,13,15,16). The conjunctiva is an important anatomical structure both for maintaining the health of the cornea and for the mobility of the eyelids and bulbous oculi. It may become inflamed with various etiologies, alone or together with other anatomical structures of the eye (11,16). Sometimes ignored or overlooked cases of conjunctivitis cause corneal keratitis, corneal ulcer and damage to the cornea with tissue loss (14). Deveci et al. (4), Akinrinmade and Ogungbenro (13) reported in their studies that conjunctivitis was the most common eye infection (58.01%, 17.91%, respectively). Han et al. (2) stated that they mostly encountered keratitis (34.17%), followed by conjunctivitis (31.29%). In this study, conjunctivitis (21.15%) was the most common eye problem.

Kumar et al. (12) reported that the common eye diseases were keratoconjunctivitis (21.7%), corneal ulcer/injury (21.7%), corneal opacity (18.3%), epiphora (11.6%) and eye clouding. (8.3%). Deveci et al. (4) reported that the most common eye diseases were conjunctivitis (17.91%) and membrane nictitans protrusion (11.94%). Han et al. (2) emphasized that there was more keratitis (34.17%). In this study, conjunctivitis (21.15%), corneal lesions (keratitis (19.59%), corneal ulcer (14.09%), keratoconjunctivitis sicca (9.62%) were encountered. Although corneal lesions were encountered in all breeds, they were more common in Scotish and British cat breeds. This may be attributed to the fact that the eyes of races such as British and Scotish are exophthalmic compared to other races, the cornea is larger, the eyelids do not close completely, the cornea is not sufficiently covered with tears, and the cornea tends to dry out. In addition to conjunctival and corneal lesions, glaucoma (3.44%), uveitis (4.12%), iris staphyloma (4.12%), symblepharon (3.78%), panophthalmia (3.44%), corneal necrosis (3.09%), membrane nictitans protrusion were observed in the cats included in the study. (1.72%), chemosis (1.72%), entropion (1.37%), cataract (1.03%), hypopion (0.69%), proptosis (0.34%), cyst dermoid (0.34%) and local retinal detachment (0.34%) cases were observed.

As a result, eye problems are frequently encountered in cats and among these, conjunctiva and corneal lesions are more common. In order to protect eye health and prevent negative effects on vision, it is important to have routine eye examinations regularly and to start diagnosis and treatment at an early stage.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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✉ **Corresponding Author:**
Emine ÇATALKAYA
Dicle University Faculty of Veterinary Medicine
Department of Surgery, 21200, Diyarbakır/Türkiye
E-posta: eminecatalkaya21@gmail.com