



RETROSPECTIVE STUDY OF OPHTHALMOPATHIES IN 337 DOGS

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ABSTRACT

Retrospective studies about ophthalmic diseases contribute to establish preventive measures, its diagnosis and treatment. The aim of this study was to carry out a survey of dogs treated at the Ophthalmology Service of Veterinary Medicine Hospital of Federal University of Bahia between January and December 2013. After data collection in the medical records, the main ophthalmic disorders were separated and analyzed for gender, age, breed and unilateral or bilateral ocular involvement. There was a homogeneous distribution between males and females among the 337 animals, most overaged 7 years old, who have been diagnosed with at least one ophthalmopathy. The corneal ulcer was the most frequent illness, followed by uveitis, KCS, cataract and glaucoma. The data obtained in this study underscore the importance of the casuistry in ophthalmic care that can assist in the adoption of preventive measures, and consequently enabling the improvement of animal's health.

KEYWORDS: cataract, keratoconjunctivitis sicca, glaucoma, corneal ulcer, uveitis.

ESTUDO RETROSPECTIVO DE OFTALMOPATIAS EM 337 CÃES

RESUMO

Estudos retrospectivos de enfermidades oftálmicas contribuem para o estabelecimento de medidas profiláticas, diagnóstico e tratamento das mesmas. O presente trabalho tem o objetivo de realizar um levantamento dos cães atendidos no serviço de oftalmologia do Hospital de Medicina Veterinária da Universidade Federal da Bahia, no período de janeiro a dezembro de 2013. Após a coleta das informações contidas nos prontuários, as principais afecções oftálmicas foram separadas e analisadas quanto ao sexo, idade, raça e acometimento ocular uni ou bilateral.

Dentre os 337 animais houve distribuição homogênea entre machos e fêmeas, a maioria com idade acima dos 7 anos, os quais foram diagnosticados com ao menos uma oftalmopatia, e a úlcera de córnea foi a afecção ocular mais frequente, seguida de uveíte, CCS, catarata e glaucoma. Os dados obtidos neste estudo ressaltam a importância sobre a casuística de atendimentos oftálmicos, que pode auxiliar na adoção de medidas preventivas, e, conseqüentemente possibilitar a melhoria da qualidade de vida do animal.

PALAVRAS-CHAVE: catarata, ceratoconjuntivite seca, glaucoma, úlcera de córnea, uveíte.

INTRODUCTION

The increased demand for treatment of animals with ocular disorders, the development of technologies and staff improvement has enhanced the ophthalmology as an important area of veterinary medicine. These advances accompany the technical improvements for human ophthalmology (DEL RÍO et al., 2011). However, the knowledge about symptoms and treatment is necessary to enable an early diagnosis and the life quality increasing of the animal, since the ophthalmopathies has a rapid evolution and can lead to loss of vision (DEL RÍO et al., 2011).

In order to improve the approach and treatment of illnesses, epidemiological studies are indispensable, once that allows a better comprehension of the studied areas and can assist in the establishment and adoption of preventive measures (TEMPORINI & KARA-JOSÉ, 2004).

Ketatoconjunctivitis sicca (KCS), corneal ulcers, uveitis, glaucoma and cataract are the ocular diseases with major occurrence in veterinary ophthalmology. KCS is an ocular surface disease associated with aqueous tear deficiencies and abnormalities on the lipid or mucin tear components, caused by removal of nictitans gland, trauma, infectious disease, as well as neurogenic, idiopathic and autoimmune conditions (GELATT, 2007; BALICKI et al., 2008; MAGGIO & PIZZIRANI, 2009).

Ulcerative keratitis consists in the loss of integrity of the corneal epithelium with stroma exposure. Trauma, foreign bodies, infectious diseases, KCS and eyelid abnormalities are between the major causes of corneal ulcers (KIM et al., 2009; HAZRA & PALUI, 2011; JHALA et al., 2011; MAGGS et al., 2013).

Uveitis is an inflammatory condition from uveal tissue (iris, ciliary body and choroids) that can be secondary to infectious (viral, bacterial, fungal, protozoal and rickettsial) and non-infectious diseases (diabetes, ulcerative keratitis and cataracts) (MASSA et al., 2002; GELATT, 2007; MAGGS et al., 2013).

Glaucoma is associated with an increase of the intraocular pressure and is defined as a group of ocular diseases that follows as progressive loss of sensibility and function, death of retinal ganglion cells, optic nerve damage, optic disc cupping and gradual loss of vision. It's a severe disease with discrete clinical appearance, which is, in general, unnoticed by owners (GELATT, 2007; MARTINS et al., 2006; MAGGS et al., 2013).

Cataract is one of the most common ophthalmic disorders in senile animals and its major cause of vision loss. These opacities may manifest in a focal or diffuse form and can be hereditary or secondary to metabolic disorders (diabetes mellitus), trauma, intraocular disorders, lens luxation, chronic uveitis and progressive retinal atrophy (RANZANI et al., 2004; GELATT, 2007; ACEVEDO et al., 2011).

To perform a proper diagnosis and assist on treatment of ophthalmic diseases is essential to know the casuistry of veterinary ophthalmology; therefore, the development of retrospective studies provides basis for the adoption of preventive measures and awareness of the owners.

Thus, the objective of the present study was to carry out a retrospective study about the frequency of ophthalmopathies in dogs screened in the Veterinary Medicine Hospital of Federal University of Bahia, between January and December 2013.

MATERIALS AND METHODS

A retrospective study of medical records from the Ophthalmology Service of Veterinary Medicine Hospital of Federal University of Bahia (HOSPMEV - UFBA) was conducted between January and December 2013.

From all treated cases included in this study, some incomplete records were excluded. Information regarding age, gender and ophthalmic diagnosis were collected.

Animals were separated in age groups: \leq 03 years, between 03 and 07 years, and $>$ 07 years old. In addition, the dogs were classified according to breed in: group 01 - with 85 mongrel dogs and group 02 - with 79 poodles, because of their large number of individuals; group 03 - with 51 Shih-Tzu, 09 Pugs, 06 Bulldogs, 04 Lhasa Apso, 04 Maltese, 02 Boxers, 02 Shar-Pei and 01 Pekinese dog, for having similar anatomical characteristics; and group 04 - with 19 Pinschers, 15 Yorkshires, 13 Cocker Spaniels, 07 Pit Bulls, 05 Rottweiler, 05 Labradors, 05 Dachshunds, 05 Chow chows, 04 Schnauzers, 03 German Shepherd, 03 Beagles, 02 Brazilian Mastiff, 02 Golden Retriever, 01 Bull Terrier, 01 Great Dane, 01 Samoyed, 01 Chihuahua, 01 Siberian Husky and 01 Fox, due to restrict number of animals.

All data collected were assessed using Chi-Square test to analyze the main ophthalmopathies distribution according gender, age and breed group. A P-value of <0.05 was considered significant in all tests.

RESULTS AND DISCUSSION

Three hundred thirty-seven dogs were diagnosed with at least one ophthalmopathy during the study. Age varied between 2 months and 17 years old, and 51% were female. The major casuistry was of animals overaged 7 years old (40.6%) and belonging to group 4 (27.9%). Ulcerative Keratitis was the most frequent illness, followed by uveitis, KCS, glaucoma and cataract. These findings differ from MÜLLER et al. (2002), in which cataract, males and dogs between 1.1 and 3 years old obtained higher percentage.

Cases of ulcerative keratitis most were of young dogs belonging to group 3, as demonstrated in table 1. Similar results were found by KIM et al. (2009), who reported that dogs with up to 3 years and Shih-Tzu, Pekinese and Yorkshire breeds were the most affected. Breed predisposition and anatomical conformation may contribute for corneal ulcers occurrence, what is consistent with previous findings, which report brachycephalic dogs as more predisposed to ocular surface disease due its major ocular exposure (CASTELLÓN et al., 2009). In addition, 79 from 170 animals with corneal ulcer had some palpebral abnormality in the present study, what is widely known that these abnormalities may cause corneal friction and, consequently, epithelium erosion (GELATT, 2007; VIANA et al., 2006, MAGGS et al. 2013).

KCS was more frequently noticed in animals overaged 7 years belonging to groups 3 and 4 (Table 1). BALICKI et al. (2008) reported that 75% of the animals diagnosed with dry eye were overaged 6 years and the major casuistry was composed by mongrel dogs. However, HADZI et al. (2013) observed dogs between 3 and 8 years old among the most occurring in its retrospective study. Breeds predisposed to KCS occurrence, such as Yorkshire, Cocker Spaniel, Shih-Tzu, Lhasa Apso, Pekinese, English Bulldog and Schnauzers (MAGGS et al., 2013), were also found in groups 3 and 4 of this investigation, where this ocular disorder was commonly observed.

MASSA et al. (2002) observed that adult dogs of different breeds were affected by uveitis, caused by idiopathic/immunomediated, neoplastic and infectious factors. In the present study, poodles and animals with age over 7 years were the most affected, along with cases of cataract and glaucoma (table 1), enabling correlation among these three ophthalmopathies. However, possible etiologies for this illness were not investigated.

Cataract, such as reported in this investigation, is one of the ophthalmopathy in senile dogs, poodles, Cocker spaniels and mongrel dogs (RANZANI et al., 2004; TARAFDER & SAMAD, 2010). WILLIAMS et al. (2004) also agreed when determined this ocular disease prevalence, and verified that dogs overaged 13.5 years had some lens opacity degree.

According GELATT & MACKAY (2004), 81% of secondary glaucoma patients had a cataract formation associated and, approximately 20% of dogs with lens opacity developed glaucoma in at least one eye. However, STROM et al. (2011) found that anterior uveitis, lens luxation, intraocular surgeries and neoplasia were the major risk factor to glaucomatous syndrome.

The intense inflammatory response elicited by cataract, glaucoma and uveitis is a factor that connects these ophthalmopathies (GELATT, 2007; ORÍA et al., 2008; MAGGS et al., 2013), reported by some authors and also correlated in this investigation.

TABLE 1 – Analysis of association between the ophthalmopathies diagnosed in dogs (n=337) treated at the Ophthalmology Service of HOSPMEV-UFBA, from January to December 2013, according to gender, age and breed.

VARIABLE	N	KCS (%)	ULCER (%)	UVEITIS (%)	GLAUCOMA (%)	CATARACT (%)	OTHERS (%) °
Gender		p=0.672	p=0.299	p=0.008	p=0.815	p=0.640	p=0.874
Male	165	12.8	26.1	10.7	4.8	7.4	7.4
Female	172	11.2	24.3	18.1	5.3	6.8	7.4
Age (years)		p=0.413	p=0.005	P=0.003	p=0.000	p=0.000	p=0.401
≤ 3	105	6.5	19.6	5.6	0.6	0.6	5.3
> 3 e ≤ 7	95	6.2	13.9	7.4	1.8	3.8	4.7
> 7	137	11.3	16.9	15.8	7.7	9.8	4.7
Breed		p=0.285	p=0.000	P=0.000	p=0.046	p=0.000	p=0.406
Group 1	85	5.0	10.1	7.7	2.7	2.4	4.7
Group 2	79	4.8	9.2	10.4	4.2	6.5	2.7
Group 3	79	5.6	16.6	2.7	1.2	0.9	2.7
Group 4	94	8.6	14.5	8.0	2.0	4.4	4.7

* The percentages refer to each line N and sum over 100% because the animal could have more than one ophthalmopathy. ° Among these ophthalmopathies, the most frequent were: nictitans gland prolapse (3.9%), lacrimal duct obstruction (1.9%), conjunctivitis (1.2%) and blepharitis (1.2%); the others were observed in less than 1% of the animals.

In the present study, no significant differences were observed comparing results between males and females for KCS, ulcerative keratitis, cataract and glaucoma. Females were the most affected gender by uveitis, but for the best of our knowledge, there is no data regarding sexual predisposition in this condition.

KCS, uveitis and cataract demonstrated, in its majority, bilateral ocular involvement. Nevertheless, corneal ulcers and glaucoma were most observed unilaterally (Table 2), such as reported by others authors (BALICKI et al., 2008; STROM et al. 2011; VARSHNEY et al., 2012; HADZI et al., 2013; MAGGS et al., 2013).

TABLE 2 – Frequency of the most diagnosed ophthalmopathies in dogs at the Ophthalmology Service of HOSPMEV-UFBA from January to December 2013, regarding unilateral and bilateral ocular involvement.

OPHTHALMOPATY	BILATERAL		UNILATERAL		TOTAL
	N	%	N	%	
KCS	69	85.2	12	14.8	81
Ulcer	49	28.8	121	71.2	170
Uveitis	81	83.5	16	16,5	97
Glaucoma	12	35.3	22	64.7	34
Cataract	40	83.3	8	16.7	48

CONCLUSION

The findings of the present study highlight the need of a periodic ophthalmic monitoring, mainly of senile animals and of breeds predisposed to ocular diseases, since that the occurrence of disorders such as ulcerative keratitis, uveitis, glaucoma and cataract can be correlated with age group and breed.

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