CORNEAL AND CONJUNCTİVAL FOREİGN BODİES İN CATS AND DOGS

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Summary
Corneal and conjunctival foreign bodies are frequently seen in dogs and cats. These bodies are usually consisted of organic materials, wild barleys, awns, glass and glass fibers. Foreign bodies can cause serious corneal/conjunctival damage and reactions, and vision loss, if they do not be removed as soon as possible. In this study, ocular findings of corneal and conjunctival foreign bodies were examined and results of medical/surgical treatments were evaluated in dogs and cats. Fourteen dogs and 58 cats were brought to the clinics with complaints of variable blepharospasm, pain, epiphora, hyperaemia, chemosis and secondary uveitis. Ophthalmic examinations revealed foreign bodies on conjunctival surface, in bulbar surface of third eyelid and/or in cornea. Foreign bodies that adhered to conjunctival surfaces were removed with topical anesthesia. If it had been embedded within deeper corneal layers or penetrated into anterior chamber, general anesthesia was preferred for careful removal from either corneal surface or anterior chamber. After removal of foreign bodies, medical treatment was performed. In terms of vision, prognosis was mostly considered successful.
Keywords: *Cat, conjunctiva, cornea, dog, foreign body*

Introduction

Corneal and conjunctival foreign bodies are most frequently seen in dogs and cats. They are organic materials (grass awn, rose thorns, wild barley, fragments of plant material), sand, metal and glass, lead or air gun pellets foreign bodies. Foreign bodies can cause serious corneal/conjunctival damage and reactions, and vision loss. Perforating wounds require immediate treatment (Maggs, 2008; Lew et al., 2015) After removal foreign bodies from the eye, especially perforating wounds require immediate treatment due to severe pain and to prevent secondary bacterial infection. The time between an injury and initiation of medical and surgical treatment affects the severity of complications (Davidson et al., 1991).

In this study, ocular findings of corneal and conjunctival foreign bodies were examined and results of medical/surgical treatments were evaluated in dogs and cats.

Materials and Methods

In the study, 14 dogs and 58 cats were brought to the clinics with complaints of variable blepharospasm, pain, epiphora, hyperaemia, chemosis and secondary uveitis. Ophthalmic examinations revealed foreign bodies on conjunctival surface, in bulbar surface of third eyelid and/or in cornea (Figure 1). Foreign bodies that adhered to conjunctival surfaces were removed by using local anesthetics with lidocaine. If it had been embedded within deeper corneal layers or penetrated into the anterior chamber, general anesthesia was preferred for careful removal from either corneal surface or anterior chamber. After removal of foreign bodies, the cornea tested with fluorescein staining for damage.

Figure 1. Foreign bodies on conjunctival surface (1, 3 and 4) in bulbar surface of third eyelid (2).

In cats with uveitis (anterior or posterior), ultrasonography was performed under local anesthesia due to eye pain and severe blepharospasm. B mode ultrasonography of the orbital and ocular structures was performed with a 10 mHz transducer. Prob placed directly on the cornea and sclera, coated with a gel.

Postoperative medical therapy included topical and/or systemic broad-spectrum antibiotics, cyclopentolate sodium drops to reduce severe pain and/or acetylcysteine drops to induce mytotic epithelial activity. Third eyelid flap or tarsorraphy was performed in cats with severe corneal ulcus or descematocele.

Results

The corneal foreign body was found in 3 of 14 dogs. In all cats, just conjunctival foreign body was found but in 42 of 58 cats corneal damage occured with variable degrees because of the conjunctival foreign bodies. In 49 cats, foreign body was in bulbar surface of third eyelid. In 3 cats, foreign body penetrated to upper eyelid conjunctiva, in 6 cats it was lower eyelid conjunctiva. In dogs, 2 conjunctival foreign bodies were under the third eyelid. Seven of them penetrated to upper and 2 of them to lower conjunctival surface.

The most common clinical signs included blepharospasm, conjunctival hyperaemia and severe pain. Corneal and conjunctival foreign body complications included iris prolapse (n=6 in cats, n=1 in dogs), melting corneal ulcer (n=8 in cats, n=3 in dogs), severe corneal ulcer and descematocele (n=28 in cats, n=2 in dogs), panophthalmitis (n=1 in cats, n=0 in dogs), secondary uveitis (n=32 in cats, n=4 in dogs) (Figure 2).

Figure 2. Corneal and conjunctival foreign body complications included severe corneal ulcer and descematocele (A), panophthalmitis (B), iris prolapse (C) and melting corneal ulcer (D).

Third eyelid flap or tarsorraphy was performed for protecting the corneal surface in 17 cats and 1 dog. Although medical treatment was performed as soon as possible, in 2 cats and 1 dog, the eye did not answer the treatment because its structures damaged seriously.

Discussion

When a dog or cat is brought to the clinic with complaints of blepharospasm and pain, the eye must be examined in detail for corneal and conjunctival foreign bodies. This is important for the prognosis. In the study, in all cats and dogs with eye problem, detail examination was performed by using local anesthetic drops.

In corneal/conjunctival foreign bodies, early intervention is very important. Especially in corneal foreign bodies early surgical interventions allow to restore the transparency of the cornea and reconstruct the anatomy inside the damaged eye (Lew et al., 2015). In the study, corneal foreign bodies were removed immediately in dogs. After removal the bodies, medical treatment was performed to reduce inflammatory processes and to preserve vision properly.

In cases of corneal perforation or conjunctival damage with metallic foreign bodies, the risk of infection is lower than organic foreign bodies. Hence, after removal of the bodies, broad-spectrum topical and/or systemic antibiotic should be used (Bussanich and Rootman, 1981; Sansom and Labruyere, 2012) In the study, most of the cats had organic foreign bodies and broad-spectrum topical antibiotics were used in all of them. Systemic antibiotics were preferred if organic foreign body penetrated corneal and conjunctival surfaces deeply.

For removal of corneal foreign bodies, hydropulsion can be also used successfully (Labelle et al., 2014). In this study, 2 dogs with foreign body which penetrated corneal layers, removed carefully with a suitable forceps under general anesthesia.

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