

## **Treatment of Corneal Ulcer Complicated In Domestic Canine, With the Complementary Use of Homeopathy, Moxabustion and Autologous Serum**

Roberto Luiz Ferrone Neto<sup>1</sup>; Maria Leonora Veras de Mello<sup>2</sup>; Denise de Mello Bobany<sup>2</sup>

<sup>1</sup>*Autonomous Veterinarian- Teresopolis, RJ Brazil*

<sup>2</sup>*Professors - Veterinary Medicine- University Center Serra dos Orgãos - UNIFESO - Teresopolis, RJ Brazil*

*Corresponding Author\*: Denise de Mello Bobany<sup>2</sup>*

---

**Abstract:** *The corneal ulcer or ulcerative keratitis is one of the most common eye diseases in dogs, which can lead to vision loss. It is characterized by superficial or deep corneal erosion with loss of epithelium and stroma exposure. The causative agents may be trauma, defects eyelid, lachrymal system disorders, infections caused by fungi, bacteria and viruses. This paper approaches the conventional treatment aided by integrative therapies. Refers to the case report of a dog of breed French Bulldog, male, one year old, treated at the outpatient clinic of the Faculty of Veterinary Medicine of University Center Serra dos Orgãos - UNIFESO. Treatment was initiated and eyedrops were used with antibiotics and anti-inflammatory associated with autologous blood plasma, and homeopathic medications associated in low potencies, which resulted in clinical cure of the patient reported.*

**Keywords:** *Ophthalmology, Canis familiaris, Integrative therapies.*

---

Date of Submission: 12-03-2018

Date of acceptance: 31-03-2018

---

### **I. Introduction**

Corneal ulcer or ulcerative keratitis is one of the most common eye diseases in dogs, which can lead to loss of vision. It is characterized by superficial or deep erosive processes in the cornea, with loss of epithelium and stromal exposure [1].

The causative agents may be trauma, eyelid defects, lacrimal system disorders, fungal infections, bacteria and viruses. Severe unhealed ulcerative keratitis puts vision at risk due to the development of secondary conditions such as: endophthalmitis, glaucoma and phthisis bulbi, which is a decrease in ocular size and loss of vision [2].

Dogs of middle age, seven to nine years old, or elderly of different breeds are more likely to acquire corneal ulcer, and this is independent of the sex of the animal, but some authors consider males as being more prone to it [3].

Dogs suffering from ulcerative keratitis may present miosis, with pain and photophobia, inflammation; hypotonia due to a reduction in aqueous humor production and corneal edema [2].

The epithelium has a great ability to regenerate, and in a short time the cells of the basal layer of the epithelium begin to equalize by sliding, covering the corneal defect. The authors cite that the re-epithelization of an entirely damaged cornea occurs between four to seven days, occurring mitosis and migration of melanocyte-like cells in limb to transparent areas. There may be pigmentation and lipid deposition, and the deeper the initial lesion, the more dense and permanent the scar will be [2,4].

In the conventional treatment of corneal ulcer, one of the following antibiotics is chosen: chloramphenicol, gentamicin sulfate and neomycin sulfate, which can increase the cicatrization time. Although tobramycin is harmful to corneal reepithelialization, it causes less morphological changes and cytopathologic effects than fluoroalkonones. Ciprofloxacin 0.3% heals the cornea in 15 days, but heals disorganized. Gatifloxacin 0.3% at low frequency can heal the cornea within 15 days. Ofloxacin can generate stromal edema and conjunctival polymorphonuclear infiltrate, long and disordered cicatrization [3].

Chondroitin sulfate 100 mg / ml associated with tobramycin 3 mg / ml heal 78% of indolent dog ulcers within 4 weeks. Chondroitin sulfate 200 mg / ml and ciprofloxacin 3 mg / ml present an effect equal to the previous one. Topical anti-inflammatories are divided into two categories according to their predominant mode of action: astringents and emollients. Used topically, they inhibit epithelial regeneration, infiltration of inflammatory cells, fibroblastic activities and endothelial regeneration [4].

The use of steroids is contraindicated in cases of corneal ulcer, since it potentiates the action of the collagenases enzymes injuring the corneal tissue [5].

Surgical therapy is a procedure used in deep refractory ulcers and descemetocells. It includes third eyelid flaps, corneal debridement, conjutival grafts, tarsorrhaphy, superficial keratomies and keratoepitelioplasty[6].

The complementary therapies that were used in this study were the use of autologous serum (blood plasma) and Homeopathy. Protein rich blood plasma (PRP) is used as an unconventional treatment, consisting of 90% water, proteins (fibrinogen, globulins and albumin). PRP promotes tissue regeneration and repair by controlling the local inflammatory response, as well as having great mitogenic and anabolic activity. The  $\alpha$ -platelet degranulation, which contains the growth factors, is responsible for the curative function of protein-rich blood plasma [7].

The use of PRP on the injured corneal surface serves as a suitable vehicle to increase its concentration in the damaged tissues, allowing a modulation of the repair process, reducing cicatricial formation, the release of growth factors occurs with three to five days and remains active for seven to ten days [8]. The same one says that the eye drops can be used during a week and stored at 4°C [7].

Regarding homeopathic treatment, Veterinary Homeopathy was officially recognized and supported by Resolution No. 625, dated March 16, 1995, of the Federal Council of Veterinary Medicine [9]. Veterinary Homeopathy was inaugurated by Hahnemann himself, who said: "If the laws I proclaim are those of Nature, they will be valid for every living being." His horse suffered from an ophthalmia, and treated it with *Natrum muriaticum* [10].

Homeopathy does not treat diseases or specifically target microorganisms. It acts on the symptoms and capacity for life reaction of each individual. To facilitate the initial understanding, when we refer to the vital reaction, it is understood that it results in an amplification of the individual's immune response, fighting the disease and returning to health status [11].

## II. Case Report

A 1-year-old male French Bulldog was taken to the clinic of Veterinary Medicine at UNIFESO, located in the city of Teresópolis, for a clinical examination. The reason for the consultation was an inflammation in the right eye of the animal, with continuous lacrimation, morphological changes such as enlargement of the eyeball, lack of vision, discomfort and pain. The animal was prostrate. During the anamnesis, the owner reported that the animal would have corrective entropion surgery of the lower right eyelid 3 months before the symptoms appeared.

During the clinical examination it was verified that the animal presented a deep ulceration in the right cornea, probably resulting and incorrect management after the surgery. The stromal layer was altered, there was extravasation of the descemet membrane with descemetocoele due to rupture and perforation of the cornea. The animal had serous ocular secretion, vessel congestion, intense corneal edema, photophobia, continuous lacrimation and increased ocular pressure, as well as rupture of different layers of the cornea (figures 1 and 2).

**Figure 1** - Side view of clinical signs observed in the animal reported during the first visit



**Figure 2** - Front view of clinical signs observed in the same animal reported during the first visit



The recommended initial therapy was the use of 0.3% tobramycin-based antibiotic eye drops, combined with sodium diclofenac sodium-based eye drops, without good evolution of the condition (figure 3).

Topical treatment with PRP was then added, collected from the animal itself and kept at a cooling temperature of 2 to 8 ° C., for 3 days, 1 drop every 8 hours on the affected eye (figure 4).

**Figure 3** - Appearance of the animal's eye after conventional treatment



**Figure 4** - 4th day of conventional treatment, during the use of antibiotic and anti-inflammatory eye drops and the concomitant treatment of blood plasma



And the homeopathic treatment was added when two tablets of the following compound were prescribed orally: Conium 12 ch, Rhus tox 12 ch, Silicea 12 ch, Arnica Montana 3 ch, Euphrasia 4 ch, tablets administered four times a day until curing (Figure 5).

**Figure 5** - 7th day of treatment, after the beginning of the alternative medication with homeopathy, after the end of the use of blood plasma (frontal and lateral vision)



After 25 days of conventional topical treatment, supplemented alternatively with Homeopathy and PRP, it was found that there was no more ocular secretion, or vessel congestion, without lacrimation and normal ocular pressure. The cornea was smooth, transparent, lubricated and avascular. However, the animal presented sequels, such as uneven diameter and density of the left eye, corneal scar, opacity and irregular profile, but keeping part of the vision (figure 6).

**Figure 6** - 25th day of treatment, after the end of treatment with antibiotics and anti-inflammatories, still using homeopathy. The improvement of the symptoms and appearance of the scar occurs



### III. Discussion

In the case reported, it was possible to observe that the fact that the animal was brachiocephalic made it prone to develop ocular alterations as Hvenegaard[3] affirms, however, the incorrect treatment after the entropy surgery and the delay to enter with correct therapeutic measures aggravated the signs. Clinical characteristics of the animal contributed to the sequelae after treatment.

The worsening of the ocular lesion increased the time required for wound healing due to, according to Singh et al. [2], the difficulty of repairing the lesions involving depth and type of corneal injury involved.

Although Singh [2] and Baungarten[12] report that eye drops containing the antibiotic tobramycin, one drop every 8 hours for 21 days, and topical non-steroidal anti-inflammatory, one drop every 8 hours for 15 days would have large efficacy in animals with ulcerative keratitis with regression of the signs within 21 days, the similar therapeutic protocol, by the use of topical tobramycin and diclofenac, used in the present report were not enough, which led to the decision of the use of complementary therapy.

The reported clinical case had an alternative and differential treatment to other studies, since it used blood plasma and homeopathy, along with conventional treatment, which led to a rapid evolution in the animal studied.

### IV. Conclusion

The association of autologous blood plasma and associated homeopathic medications in low dynamizations contributed to the clinical cure of the patient of the reported case, without the need for surgical files.

### References

- [1]. T. J. Kern, Afecções de córnea e esclera, in S. J. Birchard, R. G. Sherding, *Manual Saunders: clínica de pequenos animais*, 3. (São Paulo: Roca, 2008), 1373-1385.
- [2]. N.P. Singh, S.K. Jhirwal, T.K. Gahlot, Management of Corneal Ulcer. *Research & Reviews: Journal of Veterinary Sciences*, 2(1), 2016, 4-5.
- [3]. A. P. F. do A. Hvenegaard, *Estudo retrospectivo do tratamento ambulatorial da úlcera indolente em cães da raça Boxer, master diss.*, Universidade de São Paulo, SP, 2010.
- [4]. D.H. Slatter, *Manual de cirurgia de pequenos animais*. 2. (São Paulo: Manole, 1998).
- [5]. C.B. Martins, P.D. Galera, Semiologia oftálmica em cães e gatos – Revisão de literatura. *Medvep - Revista Científica de Medicina Veterinária - Pequenos Animais e Animais de Estimação*, 9(31), 2011, 612-620.
- [6]. A.P.S.M. Silva, P.R. F. Assis, F.A.B. Viana, A.V.C. Amaral, Flap de Terceira Pálpebra para Tratamento de Úlcera de Córnea Colagenolítica Difusa em Cão: relato de caso. *Enciclopédia Biosfera, Centro Científico Conhecer*, v.11 n.22, 2015. 1296-1305.
- [7]. N.B. Merlini, J.F. Fonzar, C.S. Perches, M.G. Sereno, V.L. Souza, C.A. Estanislauet al., Uso de plasma rico em plaquetas em úlceras de córnea em cães. *Arquivo Brasileiro de Medicina Veterinária e Zootecnia*, 66(6), 2014, 1742-1750.
- [8]. C. Donatti, C.V.S. Brandão, J.J.T. Ranzani, C.S. Perches, C.R. Padovani, C.H. Pellizzon, M.G. Sereno, Uso do plasma rico em plaquetas no reparo de úlceras de córnea profundas induzidas em coelhos. Avaliação clínica e histomorfométrica. *Arquivo Brasileiro de Medicina Veterinária e Zootecnia*, 65(3), 2013, 809-818.
- [9]. CRMV/RJ. *Manual do Médico Veterinário e do Zootecnista*: org. do CRMV/RJ, Rio de Janeiro, 2004.
- [10]. M.L.V. Mello, Homeopatia Veterinária através do tempo, in A. F. Dias, *Fundamentos da Homeopatia* (Rio de Janeiro: Editora Cultural Médica, 2001), 103-107.
- [11]. M.L.V. Mello, *Amando a Homeopatia e os Animais para os Homeopatas e Estudantes de Homeopatia*, 1. (Rio de Janeiro: Editora Clube dos Autores, 2015).
- [12]. L. B. Baungarten, P. M. C. Freitas, G. M. Silva, A. E. P. Salgado, D. Eurides, Abordagem clínica de úlcera de córnea associado ao Blue Eye em cão: Relato de caso. *Medvep, Curitiba*, 6(18), 2014, 174-176.

\*Denise de Mello Bobany "Treatment of Corneal Ulcer Complicated In Domestic Canine, With the Complementary Use of Homeopathy, Moxabustion and Autologous Serum." *IOSR Journal of Agriculture and Veterinary Science (IOSR-JAVS)* 11.3 (2018): 38-41.