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Nodular lymphocytic conjunctivitis in a horse - case report

[*Conjuntivite linfocítica nodular em equino - relato de caso*]

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ABSTRACT

The case of an equine with nodular lymphocytic conjunctivitis is described. A 14-year-old crossbred mare was seen presenting with development of a mass in the nasal angle of the right eye, behind the third eyelid. The tutor reported slow growth over 4 years, always accompanied by epiphora, and that no treatment had been performed prior to consultation. The histopathological and immunohistochemical results found a nodular, subepithelial structure, composed predominantly of densely packed small lymphocytes. Through the exams, associated with studies with monoclonal anti B lymphocyte antibodies and polyclonal anti T lymphocyte antibodies, the diagnosis of nodular lymphocytic conjunctivitis was reached. Only clinical pharmacological treatment was chosen, based on the use of topical and intralesional hydrocortisone acetate. After one month of treatment the mass completely disappeared without sequelae.

Keywords: equine, nodular lymphocytic conjunctivitis, mass, immunohistochemistry, lymphocytes

RESUMO

Descreve-se o caso de um equino com conjuntivite linfocítica nodular. Uma égua, mestiça, de 14 anos, foi atendida apresentando desenvolvimento de uma massa no ângulo nasal do olho direito, atrás da terceira pálpebra. O tutor relatou um crescimento lento durante 4 anos, sempre acompanhado de epífora, para o qual não foi realizado tratamento prévio à consulta. Os resultados histopatológico e imuno-histoquímico constataram uma estrutura nodular e subepitelial, composta predominantemente por linfócitos pequenos densamente agrupados. Por meio dos exames, associados a estudos com anticorpos monoclonais antilinfócitos B e anticorpos policlonais antilinfócitos T, chegou-se ao diagnóstico de conjuntivite linfocítica nodular. Optou-se apenas pelo tratamento clínico farmacológico, baseando-se na utilização de acetato de hidrocortisona tópica e intralesional. Após um mês de tratamento, a massa involuiu por completo, sem deixar sequelas.

Palavras-chave: equino, conjuntivite linfocítica nodular, massa, imuno-histoquímica, linfócitos

INTRODUCTION

Conjunctivitis, as the name implies, is the inflammation of the ocular conjunctival mucosa, either bulbar or palpebral (Zapata and Sande, 2020). It is a common affection in veterinary medicine and most often bilateral (Silva, 2017), of traumatic, allergic, or even infectious etiology (Thomassian, 2005). In turn, nodular lymphocytic conjunctivitis in equine has sporadic reports, being also known as conjunctival pseudotumor, and consists of a proliferative inflammatory lesion, developed from lymphoid tissue (Giuliano, 2011). It is suspected that this equine affection may also have an immune-mediated pathogenesis, based on the characterization of the inflammatory cell infiltrate, and the absence of infectious agents or foreign bodies (Moore *et al*., 2000).

Conjunctival pseudotumors manifest uni or bilaterally, through pink conjunctival masses, non-ulcerated, nodular, or smooth (StoppiniI *et al*., 2005). In a study of five horses by Moore

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and co-workers (2000), for example, in two cases the masses were nodular and relatively flat, while in the other three, they were diffuse. Furthermore, in the same study, in three of the animals there was involvement of the third eyelid, and of the bulbar conjunctiva in the others. Nodular lymphocytic conjunctivitis should be differentiated from other palpebral masses or edema, sarcoid, habronema, fungal granuloma, allergic or inflammatory reactions due to foreign bodies, or neoplasms such as papilloma and squamous cell carcinoma (Brooks, 2002; Shank *et al*., 2018; Crausaz *et al*., 2020).

Therefore, biopsy and immunohistochemistry are essential for a definitive diagnosis (Stoppini *et al*., 2005). Surgical reduction of the mass has proven efficient for a positive prognosis in affected animals, associated with an adequate therapeutic protocol, promoting the involution of the structure without leaving sequelae. The objective of the present study is to report a case of an equine animal with lymphocytic nodular conjunctivitis, its diagnostic methodology, treatment, and results.

CASUISTRY

A 14-year-old mixed-breed equine was seen with a mass of 2.5cm x 1.5cm in size, approximately, in the nasal angle of the right eye, presenting behind the nictitating membrane. Slow growth of the structure over a 4-year period was described by the owner, and that the animal was always presented with epiphora (Fig. 1), and no treatment had been performed prior to the consultation. The mass originated at the base of the conjunctiva in the nasal angle region of the right eye, without invading the cornea or the internal face of the third eyelid. Direct and indirect ophthalmoscopy (Neitz Bx-alpha ophthalmoscope and 20 dioptres Volk lens) revealed that the other tissues as well as the contralateral eye were unaltered, and clinical examination of the regional lymph nodes showed no morphological changes.

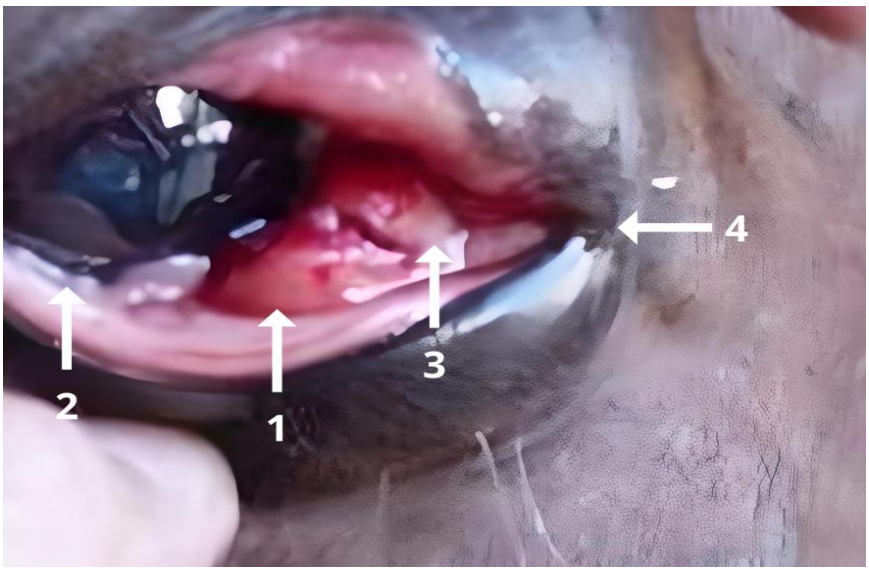

Figure 1. Right eye of the 14-year-old mixed-breed equine, with a 4 year growth mass of approximately 2.5cm x 1.5cm, originating from the base of the conjunctiva in the nasal angle region, without invading the cornea or the internal fascia of the third eyelid. Arrow 1) Mass of approximately 2.5cm x 1.5cm; Arrow 2) Nictitating membrane; Arrow 3) Epiphora; Arrow 4) Nasal angle of the right eye.

To perform the exams, an anesthetic block of the motor nerve was performed with 2% Xylocaine and local topical anesthesia with 0.5% Proparacaine. With previous installation of 1 drop of phenylephrine 1% (Phoroneus, Argentina), a vasoconstrictor to control hemorrhage, a partial excisional sample was collected for histopathological and immunohistochemical studies. The respective examinations revealed a nodular and subepithelial structure, composed predominantly of small densely packed lymphocytes and, to a

lesser extent, lymphoblasts and histiocytes, with no tendency to form follicles. Lymphocytic exocytosis was also observed in the conjunctival epithelium (Fig. 2). In addition, immunohistochemical tests were performed with monoclonal anti B lymphocyte antibodies and polyclonal anti T lymphocyte antibodies. Most of the small lymphocytes present in the lesion were negative to the markers used and only a few were positive to both antibodies, distributed irregularly in the lesion.

Based on the ophthalmologic tests and examinations performed, nodular lymphocytic conjunctivitis was considered the main presumptive diagnosis. However, differential diagnoses were considered, such as several neoplasias, granulomatous infectious processes, inflammatory reaction to foreign bodies and immune-mediated alterations. The therapeutic protocol was based on a single administration of 0,7mL of topical and intralesional hydrocortisone acetate (50mg/mL), and topical prednisolone 1% associated with phenylephrine 0.12% (Prednefrin forte, Allergran, Argentina, 1 drop every 8 hours). The mass involuted until it disappeared without sequelae after one month of treatment (Figure 3).

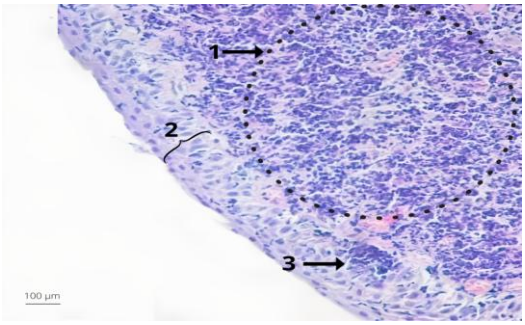

Figure 2. Histopathological section of the mass with hematoxylin and eosin staining (H-E), Bar: 100µm. Arrow 1) The delimited area shows small densely packed lymphocytes; Arrow 2) Conjunctival epithelium; Arrow 3) Lymphocytic exocytosis in the conjunctival epithelium.

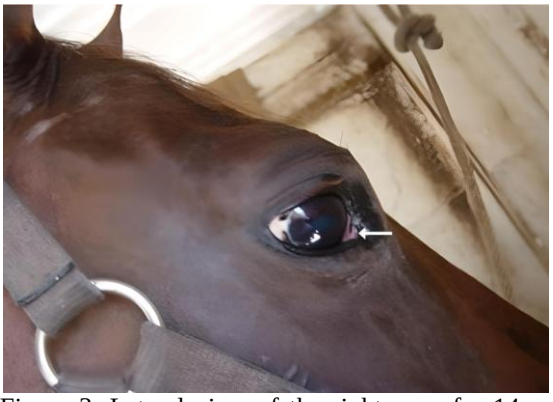

Figure 3. Lateral view of the right eye of a 14-year-old crossbred horse diagnosed with nodular lymphocytic conjunctivitis, after 1 month of treatment with a single administration of 0.7 mL topical and intralesional hydrocortisone acetate (50mg/ml) and 1 drop every 8 hours of 1% topical prednisolone associated with 0.12% phenylephrine. The arrow indicates the nictating membrane and the absence of mass.

DISCUSSION

The animal in question presented a unilateral smooth mass, originating at the base of the conjunctiva in the nasal angle region of the right eye, without invading the cornea or the internal face of the third eyelid. Stoppini *et al.* (2005), in turn, presented a case of bilateral conjunctival mass, where the mass in the left eye was smooth and located in the dorsal bulbar conjunctiva, and the right one was lobular and located in the basal portion of the third eyelid. Moore *et al.* (2000), on the other hand, reported five cases of unilateral non-ulcerated masses, three with third eyelid involvement, and two with the bulbar conjunctiva and cornea being affected. In addition, two were nodular and three were relatively flat.

Despite the different locations, appearance and affected structures among the three studies in question, the histological and immunohistochemical examinations were similar. Microscopically, the structures were nodular, well delineated, with a predominance of B and T lymphocytes, plasma cells and histiocytes, characterizing inflammation. Moreover, no infectious agents, parasites or foreign bodies were observed in any of the cases (Estell, 2017).

For the present study, the differential diagnosis of equine lymphosarcoma was the main consideration. Such disease has been widely presented as a possible cause of conjunctival lesions and infiltrates, mainly bilateral (Stoppini *et al.*, 2005; Giuliano, 2011). However, the aggressive behavior of the tumor leads to visceral involvement, lymph node enlargement and systemic disease rapidly (Rebhun and Piero, 1998), which was not observed in the equine of this study. The regional lymph nodes were not reactive to palpation, the general physical condition of the patient was adequate, and his blood tests were as expected.

For the therapeutic protocol, the patient was treated with a single administration of 0.7mL of topical and intralesional hydrocortisone acetate (50mg/mL), and topical prednisolone 1% associated with phenylephrine 0.12% (Prednefrin forte, Allergran, Argentina, 1 drop every 8 hours), right after a partial excision of the mass for exams, reaching total involution after one month. In the study by Stoppini *et al.* (2005), the authors report a recurrence of the mass in the left eye after performing complete excision. Then, they associated a local therapy with tobramycin and dexamethasone ointment (Tobradex, Alcon Italia Spa) every 8h for about four weeks, with total reduction of the pseudotumors. Moore *et al.* (2000) also performed the treatment with total or partial excision of the masses along with anti-inflammatory drugs, reporting a good prognosis.

Inflammatory processes can affect the eye and its appendages, putting vision at risk by different alterations in ocular tissues. Proliferative nodular lymphocytic conjunctivitis is a very sporadic presentation in horses, and for this reason the histopathological and immunohistochemical evaluation is essential to reach the final diagnosis and establish a correct treatment. Evaluating the case in question and the related studies, the idea of an immune-mediated pathogenesis to lymphocytic nodular conjunctivitis is supported, due to the positive response to the use of corticosteroids and other immunosuppressive agents.

CONCLUSIONS

The histopathology exam confirmed the diagnosis of nodular lymphocytic conjunctivitis and the mass involution after immunosuppressive treatment with corticosteroids suggests good efficacy in choosing this therapeutic protocol for these cases.

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