

Hemangiosarcoma of the nictitant membrane in a Brazilian Fila dog: case report

[*Hemangiosarcoma em membrana nictitante de cão da raça Fila Brasileiro: relato de caso*]

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ABSTRACT

It was reported a case of a 9-year-old Brazilian Fila male dog that had been affected by a tissular formation of the nictitant membrane of the right eye with four months of evolution. Conjunctival hyperemia and edema, serosanguinolent secretion, and a conjunctival neof ormation at the nictitant membrane were observed. Surgical exeresis of the neof ormation was performed. Endothelial cells slightly differentiated and pleomorphic, with an intense vascular neof ormation compatible to nictitant membrane hemangiosarcoma, were found at the histological exam.

Keywords: dog, hemangiosarcoma, nictitant membrane

RESUMO

Relata-se o caso de um cão, macho, da raça Fila Brasileiro, com nove anos de idade, acometido por neof ormation tecidual na membrana nictitante do olho direito, com cerca de quatro meses de evolução. Realizou-se exame oftálmico rotineiro, a partir do qual se notaram hiperemia e edema conjuntivais, secreção ocular serossangüinolenta e neof ormation saliente na conjuntiva da membrana nictitante. Realizou-se a exérese cirúrgica da neof ormation. À histopatologia, encontraram-se células endoteliais pouco diferenciadas e pleomórficas que originavam intensa neof ormation vascular, compatíveis com hemangiossarcoma da membrana nictitante.

Palavras-chave: cão, hemangiosarcoma, membrana nictitante

INTRODUCTION

Primary neoplasms of the nictitant membrane, especially of vascular origin, are seldom found affecting dogs (Peiffer et al., 1978; Lavach and Snyder, 1984; Murphy et al., 1989). Nevertheless, carcinoma, sarcoma, melanoma, angioceratoma, and linfossarcoma have been reported (Schaffer et al., 1994).

Hemangiosarcomas (HSA) are aggressive malignant tumors, and mainly affect 9 to 10-year-old dogs. Due to its vascular endothelial origin, they may occur in any part of the body including bones, the central nervous system,

muscles, and the gastrointestinal tract. In dogs, they are most commonly seen in spleen and heart. The clinical signs vary according to their primary location (Moulton, 1990). Morphologically, they are classified anaplastic to well defined, with cavernous dilation of the blood vessels and local invasion (Moulton, 1990; Multari et al., 2002). Hemangioma and hemangiosarcoma tend to be superficial, although they may be recurrent when their removal is not accomplished (Miller and Dubielzig, 1998).

In this case report, the authors present a hemangiosarcoma of the nictitant membrane affecting a Brazilian Fila male dog.

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CASE REPORT

A 9-year-old Brazilian Fila male dog was referred with history of a neof ormation of the nictitant membrane in the right eye and serosanguinolent ocular secretion for four months. The animal was submitted to routine ophthalmic examination including the Schirmer Tear Test¹, slit-lamp biomicroscopy², applanation tonometry³, indirect binocular ophthalmoscopy⁴, and fluorescein test¹. Intraocular pressure values were normal at applanation tonometry. The biomicroscopy revealed conjunctival hyperemia, edema, thickening of the nictitant membrane, and reddish defined neof ormation over the palpebral conjunctiva of the nictitant membrane, measuring approximately 0.8x1.0cm, which was not encapsulated, and without hemorrhage (Fig. 1). No other ophthalmic alterations were observed on the posterior edge of the membrane.

The neof ormation was verified only at the nictitant membrane, so no neighboring ocular structure presented alterations. Due to a characteristic lesion, surgical excision was indicated. Complete ablation of the neof ormation under general inhaled anesthesia was performed with a wide security edge preserving the nictitant membrane. Antibiotic therapy was used, at regular intervals of six hours for 10 days. Following this first part of the post-surgical period, the cicatrization showed evidence of healing. Neof ormation fragments were maintained in buffered 10% formaline, processed for paraffin inclusion, at 4µm of thicknesses, and stained by hematoxyline-eosine.

Under microscopic examination, a fragment of the conjunctival neof ormation showed proliferation of undifferentiated cells, which showed nuclear and cellular pleomorphisms. The nuclei were either allonged or rounded and presented a loose chromatin and prominent nucleolus. Some abnormal figures of mitosis and several pyknotic nuclei were observed (Fig. 2a). The cytoplasms were lightly basophilic and rare. The allonged undifferentiated cells, when proliferated, formed groups and became vessels, which had red cells and polymorphonuclears in their interior. These vessels tended to be confluent forming a net of irregular anastomosis (Fig. 2b), similar to a cavernous tissue

(Fig. 2c). The vascular walls were composed by endothelial cells already differentiated and, sometimes, joined allonged undifferentiated cells were also observed near the walls of some vessels (Fig. 2d). Vascular necrosis was also seen, with hemorrhage and fibrin precipitates forming a cyst externally limited by metaplastic conjunctival epithelium.

DISCUSSION

Hemangiosarcoma affects dogs of any breed, although it is more common in large animals. Some reports indicate a higher incidence in males, while others do not mention a gender preference (Oksanen, 1978; Arp and Grier, 1984). Primary HSA has been reported in heart, spleen, muscular tissue, lungs, liver, kidneys, bladder, and eyes of dogs (Hargis et al., 1978; Oksanen, 1978; Kirschner et al., 1986; Moulton, 1990; Multari et al., 2002).

In a retrospective study, 38 cases of conjunctival hemangiosarcoma were identified out of the 108 conjunctival vascular tumors. Hemangiosarcomas comprised 1.14% of canine ocular neoplasms examined during that period of study. Thirteen cases involved the nictitating membrane, with 11 of them occurring along the leading edge and two cases on the palpebral surface (Pirie et al., 2006), highlighting the low frequency of tumor in the nictitant membrane. Moreover, in the present study, the tumor was in the deepest part of the nictitant membrane.

The macroscopic findings of the neof ormation reported here were compatible with those described for vascular tumors, characterized by a prominent and soft red mass, frequently local, which presented visible vessels (Miller and Dubielzig, 1998).

According to Peiffer et al. (1978), hemangioma of the nictitant membrane is presented as a proliferative, reddish, and hemorrhagic mass. Tumor hemorrhages of a vascular origin are probably due to their own nature and may vary according to the amount of blood in the vascular space and how fragile the capillary is (Moulton, 1990). Hemorrhages were also observed in this study.

¹Ophthalmos - Ribeirão Preto, Brazil.

²Slit Lamp SL14, Kowa Company Ltd. - Tokyo, Japan.

³Applanation tonometer (Tono-pen), Mentor Medical Systems - Norwell, USA.

⁴Indirect binocular ophthalmoscope (Omega 180), Heine Optotechnik - Herrsching, Germany.

Hemangiosarcoma of the nictitant...

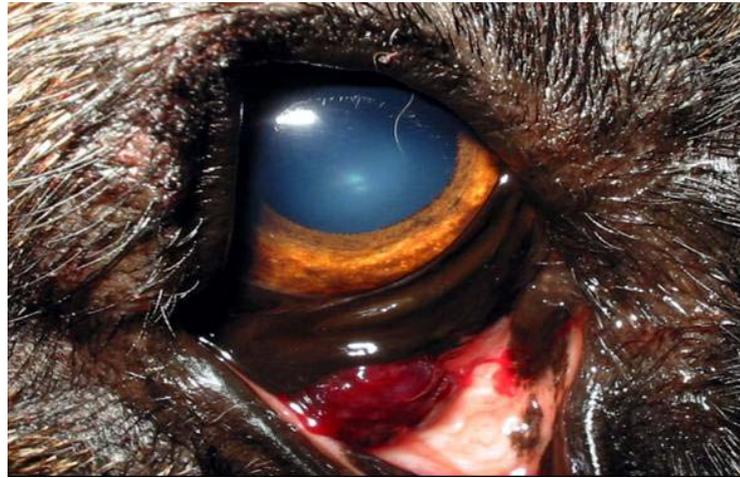


Figure 1. Eye of a Brazilian Fila male dog. Neof ormation of reddish coloration under the conjunctive palpebral of the nictitante membrane (arrow).

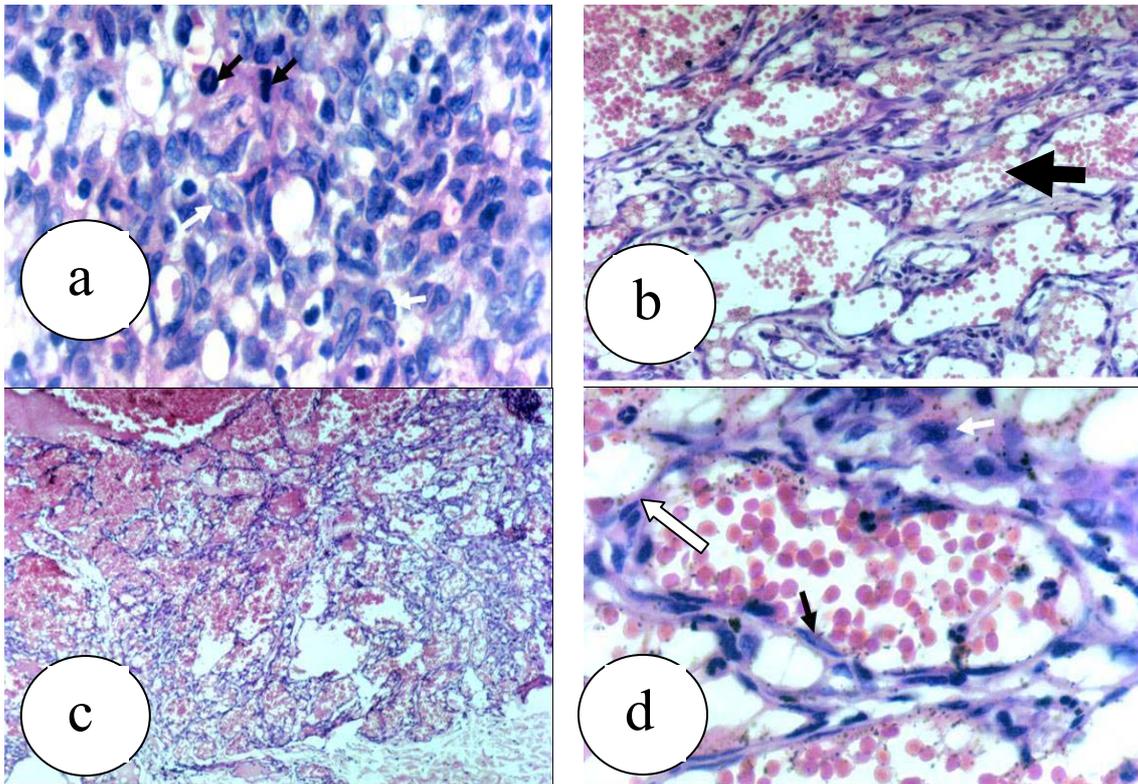


Figure 2. Hemangiosarcoma in mucous conjunctival of the nictitant membrane in the dog. a: undifferentiated cells in the tumoral area. Figures of mitosis and nuclear hyperchromatism (black arrows) and nuclear pleomorphism (white arrows). HE. 1000x. b: vessel anastomosis with contour and irregular caliber, which have red cells in their interior. HE. 400x. c: vascular proliferation of anarchical arrangement in the mucous conjunctival, similar to a cavernous tissue. HE. 40 x. d: detail of the vessels of the hemangiosarcoma. Typical endothelial cell limiting the vascular fire (black arrow); in the interstice, undifferentiated cells (white arrow). HE. 1000x.

Conjunctival hemangiomas and HAS are associated with a good prognosis. Histologically, a distinction between hemangioma and HSA is made based on the histologic degree of differentiation and local tissue invasion (Dubielzig, 2002). The capacity to differentiate the type of neoplasms is based on the histopathological evaluation and the presence of cysts and proliferative lesion, that might be present at the conjunctiva and nictitant membrane (Murphy et al., 1989; Ward, 1998).

A great number of cells, predominantly pleomorphic and, spread, interconnected to a solid base, are observed in HSA. Vascular differentiation was seen only as a gap (like a slit) between tumoral cells filled by red blood cells. Tumoral cells with little cytoplasm and hyperchromatin nucleus were also found. Nuclear pleomorphism with some large and irregular nucleus, anisocytosis, anisocaryosis and, sometimes, typical mitosis, active and moderate, were also present (Moulton, 1990; Multari et al., 2002; Liapis and Genovese, 2004).

Despite of a low occurrence, primary hemangioma has been described in affected third eyelid of dogs (Peiffer et al., 1978), although primary HSA of nictitant membrane has only been reported in a cat and a dog (Multari et al., 2002; Liapis and Genovese, 2004). Conjunctival neoplasia metastasis of vascular origin seems to be rare (Hargis et al., 1978), and its biological behavior has not been fully understood (Miller and Dubielzig, 1998). It is believed that recurrences are mainly observed when, for occasion of its excision, security edge will not be carefully respected.

The choice of treatment earlier reported was surgery associated with cryotherapy (Glaze and Gelatt, 1999). However, in this case, just surgical treatment was done and, after 20 months elapsed from the surgery, recurrence of the neoplasia was not observed. According to Pirie et al. (2006), the follow-up information was available for 20 cases; all seven cases with incomplete excision reported no recurrence.

CONCLUSION

On the basis of the histological features, it is concluded that the findings of this case report were consistent with the diagnosis of

hemangiosarcoma of the nictitant membrane. The findings indicate that hemangiosarcoma must be considered on the diagnosis of the neoplasm that affects the eyes and annexa of dogs and that its complete removal prevents relapses.

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Hemangiosarcoma of the nictitant...

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