

CASE REPORT

Lymphosarcoma with conjunctival manifestation in a guinea pig

Ingrid Allgoewer,* Anja Ewringmann* and Stephan Pfleghaar†

*Klinik und Poliklinik fuer kleine Haustiere an der Freien Universitaet Berlin, Oertzenweg 19b, 14163 Berlin, Germany, †Praxis fuer Tierpathologie Dr. med. vet. D. v. Bombard, Postfach 210502, 80689 Muenchen, Germany

Address communications to:

I. Allgoewer

Tel./Fax: + 49-30-80905777

e-mail:

100517.2013@compuserve.com

Abstract

A guinea pig with multicentric lymphosarcoma and conjunctival manifestation is described. Primary clinical signs were bilateral infiltrative conjunctival masses. Antemortem diagnosis was based on the cytology of biopsies of conjunctival tissue, fine-needle aspirates of peripheral lymph nodes, and peripheral blood smears.

Key Words: conjunctiva, guinea pig, lymphosarcoma, ocular

CASE REPORT

A 2.3-year-old male guinea pig was presented with ocular discharge of several weeks duration. The guinea pig's appetite was reduced.

On the initial examination both eyes showed small amounts of mucopurulent discharge. Prominent firm masses of light-red color protruded bilaterally over the lid margins of the lower lids (Figs 1 and 2). They were covered by conjunctival epithelium which was pigmented in some areas. No other ophthalmologic abnormalities were noted. When conjunctival snip biopsies were taken there was no bleeding at the site of the biopsies indicating that there was only sparse vascularization of the masses. An impression smear was made, and the biopsies were submitted for a histopathologic exam.

On general examination the guinea pig was emaciated. All peripheral lymph nodes were markedly enlarged. CBC and serum biochemistry profile indicated anemia (hematocrit: 21.7%, erythrocytes: $2.72 \times 10^6/\mu\text{L}$, hemoglobin: 7.68 gm/dL), leukemia (white blood cells 323 000/ μL), and thrombocytopenia (106 000/ μL). A peripheral blood smear was made and a fine-needle aspiration (FNA) of the lymph nodes performed. Cytologic evaluation yielded a diagnosis of leukemia/lymphoma. The guinea pig was euthanized because of its poor physical condition.

Histologically, the conjunctival biopsies consisted of densely packed, uniformly round to oval basophilic lymphoid cells with anisonucleosis and polymorphous nuclei showing multiple mitoses and nucleoli. The epithelium was partly pigmented (Fig. 3a,b). Grossly, there was systemic lymph node enlargement and hepatosplenomegaly. Histologically, lymph nodes, liver and spleen as well as myocardium were variably infiltrated by lymphoblastic cells. Neither orbital nor intraocular infiltration was present.

Multicentric lymphosarcoma (LSA) with ocular and/or periocular involvement is commonly encountered in dogs and cats.^{1,2} In dogs the reported incidence of ocular involvement with lymphosarcoma is between 33 and 37% with anterior uveitis being the most common clinical sign.³ In both dogs and cats LSA contributes to the common

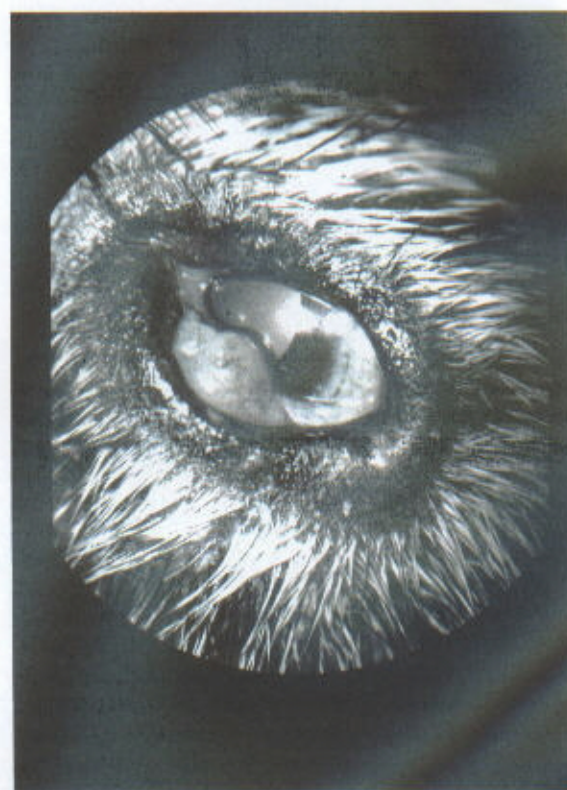


Figure 1. Guinea pig, left eye. Proliferative conjunctival mass consisting of small-sized round to oval lymphoid cells.

retrobulbar tumor types.⁴ In ferrets LSA has also been reported as retrobulbar mass with multicentric involvement.⁵ LSA with conjunctival infiltration has been described in humans,⁶ horses,⁷ dogs^{8,9} and in one cat.¹⁰

LSA is relatively rare in the general guinea pig population but may occur sporadically in about 2–3.3%.^{11,12} Certain

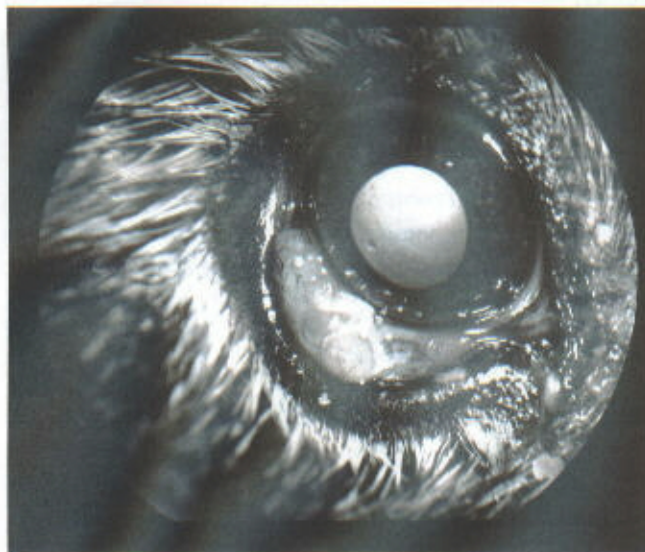
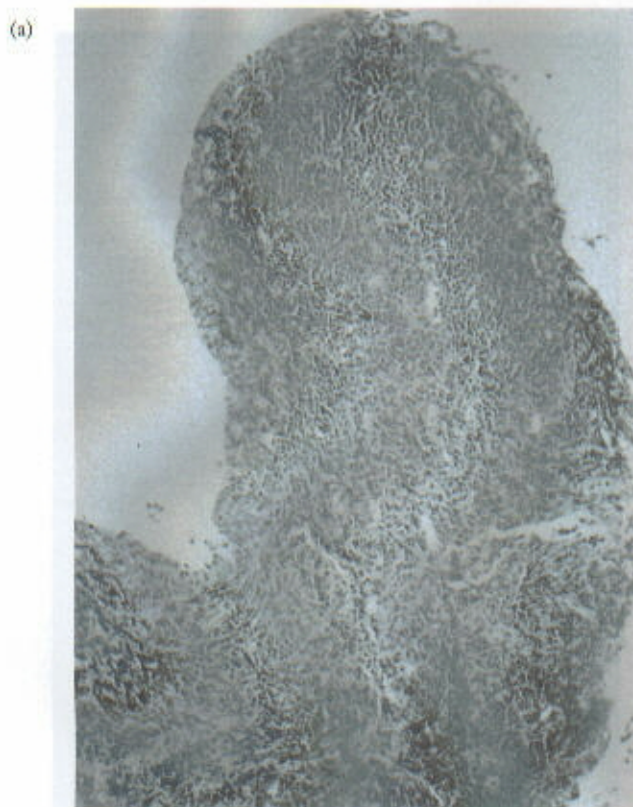


Figure 2. Guinea pig, right eye. Mucopurulent discharge with infiltrative conjunctival lymphosarcoma.



inbred strains of guinea pig have a high incidence of leukemia associated with oncornaviruses.^{11,12} LSA in the guinea pig is expressed most commonly as leukemia but may also present as aleukemic lymphoma with cervical or generalized lymphadenopathy.^{11–13} Initial signs are often vague and nonspecific.^{11,12} The age of onset is typically more than 2 years of age.¹¹ In the guinea pig one case of lymphosarcoma with choroidal infiltration has been reported.¹⁴

In summary, a guinea pig with multicentric LSA is described. Primary signs were infiltrative conjunctival lesions, lymphadenopathy, and leukemia. Antemortem diagnosis was based on the cytology of biopsies of conjunctival tissue, FNA of peripheral lymph nodes and peripheral blood smears.

REFERENCES

- 1 MacEwen EG, Young KM. Canine lymphoma and lymphoid leukemias. In: *Small Animal Clinical Oncology* (eds Withrow SJ, MacEwen EG), W.B. Saunders, Philadelphia, 1989: 451–479.
- 2 MacEwen EG. Feline lymphoma and leukemias. In: *Small Animal Clinical Oncology* (eds Withrow SJ, MacEwen EG), W.B. Saunders, Philadelphia, 1989: 479–495.
- 3 Collins BK, Moore CP. Canine anterior uvea. In: *Veterinary Ophthalmology* (ed. Gelatt KN), Lea & Febiger, Philadelphia, 1991: 357–395.



Figure 3. Conjunctival biopsy-histologic section. (a) Densely packed lymphoid cells, H&E $\times 20$; and (b) close up of lymphoid infiltration, H&E $\times 40$.

- 4 Krohne SG. Ocular tumors in the dog and cat. In: *Cancer in Dogs and Cats* (ed. Morrison WB), Williams & Wilkins, Baltimore, 1998: 731-758.
- 5 McCalla TL, Erdmann SE, Kawasaki TA. Lymphoma with orbital involvement in two ferrets. *Veterinary and Comparative Ophthalmology* 1997; 7(1): 36-39.
- 6 Voelker HE, Naumann GOH. Conjunctiva. In: *Pathology of the Eye* (ed. Naumann GOH, Apple DJ), Springer, 1986: 249-305.
- 7 Barnett KC, Crispin SM, Lavach JD, Matthews AG. Conjunctival neoplasia. In: *Equine Ophthalmology* (eds Barnett, KC, Crispin SM, Lavach JD, Matthews AG), Mosby-Wolfe, St Louis, 1995: 93-95.
- 8 Cello RM, Hutcherson B. Ocular changes in malignant lymphoma of dogs. *Cornell Veterinarian* 1962; 52: 492-523.
- 9 Brooks DE. Canine conjunctiva and nictitating membrane. In: *Veterinary Ophthalmology* (ed. Gelatt KN), Lea & Febiger, Philadelphia, 1991: 290-306.
- 10 Nassise MP. Feline ophthalmology. In: *Veterinary Ophthalmology* (eds Gelatt KN, Lea & Febiger, Philadelphia, 1991: 529-575.
- 11 Huerkamp MJ, Murray KA, Orosz SE. Guinea pigs. In: *Handbook of Rodent and Rabbit Medicine* (eds Laber-Laird K, Swindle MM, Flecknell P), Elsevier Science Ltd, Amsterdam, 1996: 130.
- 12 Van Hoosier GL, Robinette JR, Robinette LR. Viral and chlamydial diseases. In: *The Biology of the Guinea Pig* (ed. Wagner JE, Manning PJ), Academic Press, 1976: 137-152.
- 13 McEwan NA, Callanan JJ. A needle aspirate as an aid to diagnosis of lymphosarcoma in a guinea pig. *Veterinary Record* 1993; 133: 218.
- 14 Congdon CC, Lorenz E. Leukemia in guinea pigs. *American Journal of Pathology* 1954; 30: 337-359.