



CASE OF INTEREST

A Case of a Nictitans Gland Carcinoma in a Cat

By Richard Fox, Veterinary Pathologist

A seven-year-old domestic short haired cat presented with a protruding mass from the third eyelid of the left orbit but also involving the upper and lower eyelid. The external aspect of the mass was approximately 18 mm in diameter and covered by hyperaemic conjunctival epithelium.

Surgical biopsies of the centre of the lesion identified a subconjunctival mass extending to both deep and lateral biopsy margins in submitted tissue sections. In one section the mass was composed primarily of tubulo-acinar structures formed from discrete polygonal to cuboidal cells. These cells had scant eosinophilic cytoplasm and variably sized but typically large oval nuclei, with a single prominent nucleolus. Mitotic figures were approximately 3 per 10 hpfs. The glandular lumen occasionally contained neutrophilic or mucinous debris and neutrophils were scattered in the scant supporting collagenous stroma.

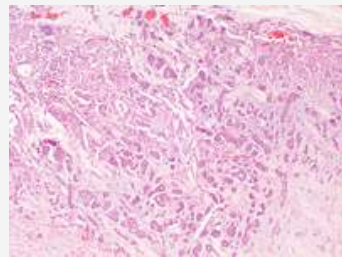


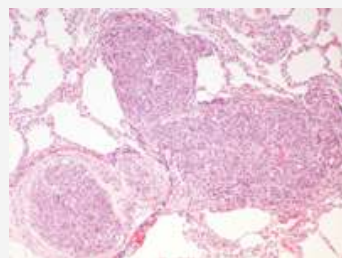
Figure 1. Neoplasm. Biopsy specimen identifies a well demarcated mass composed of epithelial cells forming tubuloacinar structures. obj. x10. HE Stain.

Following the histological diagnosis the eye was enucleated and fixed in formalin. It was prepared for photography as shown below.



Figure 2. Globe including eyelids: The neoplasm appears to extend throughout the upper lid but also in the (small off-white mass) lower lid.
(Gross photo courtesy of John Mould, Eye Vet Clinic, Herefordshire)

The cat was presented, four months later, inappetent and with increased respiratory effort. There was no response to symptomatic treatment and was euthanased. Samples of liver and sternal lymph node were taken during a limited post mortem examination and submitted for histopathology. Two sections of lung tissue displayed multifocal interstitial infiltration by neoplastic cuboidal epithelial cells forming tubulopapillary structures. These formed discrete nodules surrounded by residual pulmonary parenchyma. Throughout the pulmonary capillaries were large numbers of neoplastic cells which were also present within large muscular arteries. A section of sternal lymph node identified marked intrasinusoidal infiltration by similar-appearing neoplastic epithelial cells.



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JOURNAL Reviews(with e-links)

1. Palmeiro BS, Morris DO, Goldschmidt MH, Mauldin EA. Cutaneous reactive histiocytosis in dogs: a retrospective evaluation of 32 cases. *Vet Dermatol.* 2007 Oct;18(5):332-40. [Link](#)

32 cases of canine cutaneous histiocytosis were retrospectively evaluated. Median age at onset was 4 years. Lesions included nodules and plaques affecting the head/face, trunk and limbs, and erythema, swelling and depigmentation of the nasal planum/nares. Systemic involvement was not ruled out in all cases. All dogs had complete resolution of dermatological lesions after initial treatment (median 45 days). Median follow up was 25 months. 9 dogs had a recurrence of cutaneous histiocytosis (median days to recurrence 130 days), with 7 of 9 having more than one recurrence. At study completion, 6 dogs were deceased (no lesions at the time of death) and 26 of 32 were alive with no lesions. 10 of 26 dogs were on maintenance treatment (8 tetracycline/niacinamide, 1 azathioprine, 1 vitamin E). Previous dermatological disease and season had no detectable influence on recurrence. Recurrence was significantly more likely in dogs with nasal planum/nares lesions than dogs without these lesions. Tetracycline/niacinamide was an effective treatment option for dogs in this study population.

2. Demko JL, Cohn LA. Chronic nasal discharge in cats: 75 cases (1993-2004). *J Am Vet Med Assoc.* 2007 Apr 1;230(7):1032-7. [Link](#)

This study's objective was to identify the most common aetiological diagnosis and any historical, physical, or other diagnostic variables associated with a definitive aetiological diagnosis for chronic nasal discharge in cats. Design-Retrospective case series. Medical records of affected cats were reviewed for information on signalment, clinical signs, duration and type of nasal discharge, results of clinical examination, laboratory findings, and advanced imaging findings. A specific aetiological diagnosis for nasal discharge was identified in only 36% of cats. Neoplasia (carcinoma or lymphoma) was the most common aetiological diagnosis. Character and location of nasal discharge did not contribute greatly toward a specific aetiological diagnosis. Sneezing and vomiting were the most common concurrent clinical signs. Routine CBC, serum biochemical panel, and urinalysis did not contribute to a specific aetiological diagnosis. An aetiological diagnosis was more likely in older cats and cats that underwent advanced imaging studies and nasal biopsy. Although advanced diagnostic testing, including imaging studies and biopsy, increases the likelihood of achieving an aetiological diagnosis, the cause of chronic nasal discharge in cats often remains elusive.

3. E. M. Romansik, C. M. Reilly, P. H. Kass, P. F. Moore and C. A. London. Mitotic Index Is Predictive for Survival for Canine Cutaneous Mast Cell Tumors. *Vet Pathol* 44:335-341 (2007) [Link](#)

Figure 3. Lung. Tumour cells are present within the pulmonary parenchyma and within large muscular arteries. obj. x10. HE Stain.

Adenocarcinomas arising from the nictitans gland are a rare neoplasm in the cat. Their behaviour is sparsely documented. They are believed to be locally invasive.

In dogs, where this tumour is somewhat more commonly reported, adequate excision with wide margins can be curative. Whether that also applies to these tumours in the majority of cats is unknown. Widespread metastasis of this tumour has been reported in one case in the cat and obviously occurred in this case. Because of the sparsity of prognostic data and because of the cytological malignancy of this mass, a guarded prognosis was initially given in this case and was thus justified given the outcome.

References:

1. D. Dubielzig (1990). Tumours of the eye. In:Meuten, D. J. (ed.). Tumors of Domestic Animals, 4th ed. Iowa State Press, Ames, 2002., p743.
2. Komaromy AM, Ramsey DT, Render JA, Clark P. Primary adenocarcinoma of the gland of the nictitating membrane in a cat. J Am Anim Hosp Assoc. 1997 Jul-Aug;33(4):333-6.
3. Schäffer EH, Pflieger S, Gordon S, Knölseder M. Malignant nictitating membrane tumors in dogs and cats. Tierarztl Prax. 1994 Aug;22(4):382-91.

The purpose of the study was to evaluate the utility of MI as a predictor of biologic behavior and survival in dogs with cutaneous mast cell tumors (MCTs). Medical records from 148 dogs with histologically confirmed MCTs were reviewed. Information regarding tumor grade, local recurrence, metastatic disease, date of death/last follow-up, and outcome was obtained. The MI correlated directly with tumor grade (P < .0001). The median survival time for dogs with an MI ≤5 was significantly longer (70 months) than for those with an MI >5 (2 months), regardless of grade (P < .001). For grade II tumors with an MI ≤5, the median survival time (MST) was 70 months, compared with 5 months for those with an MI >5 (P < .001). For grade III tumors with an MI ≤5, the MST was not reached, compared with <2 months for those with an MI >5 (P < .001). In conclusion, MI is a strong predictor of overall survival for dogs with cutaneous MCTs and should be included as a prognostic indicator when determining therapeutic options.

LATEST NEWS

Feline Interstitial cystitis - Update

An excerpt from "Hill's symposium on lower urinary tract disease"

Interstitial cystitis is apparently a misnomer. Recent research has led to a reconceptualisation of the syndrome in both humans and domestic cats, in which it has been referred to as "feline interstitial cystitis" (FIC).

The identification of multiple, complex abnormalities of the nervous and endocrine systems and the recognition of the presence of a range of comorbid disorders in affected cats suggest that the bladder is more likely to be a victim rather than the perpetrator of the syndrome.

Enhanced central noradrenergic drive in the face of inadequate adrenocortical restraint seems to be associated with the disease process.

Environmental enrichment means provision of all necessary resources, control of interactions with owners, a tolerable intensity of conflict with other cats in the household, and thoughtful institution of change.

It is thought that a change in food also may be associated with recurrence of lower urinary tract signs in some patients. Behavioural research suggests that cats prefer to eat individually in a quiet location where they will not be startled by other animals, sudden movement, or sudden activity such as an air duct or appliance that may operate unexpectedly.

Reference:

Hill's Symposium on lower urinary tract disease, Florida, 2007

Additional info: [External Link](#) (PDF)

SIDE STORY

Dog flea treatments killing cats - FAB website

The VPIS report highlighted the lethal risks of permethrin based dog spot-on treatments being inappropriately applied to cats.

Toxic effects can also occur from cats coming into close physical contact with dogs in the same house (through sharing beds or grooming) that have been appropriately treated with permethrin.

These products are available in pet shops and many supermarkets, and have been mistakenly or unwittingly used on cats, frequently causing severe illness and even death. Cats poisoned with permethrin may need 2-3 days of intensive veterinary treatment to aid recovery.

The report is a review of 286 cases reported to VPIS where such canine spot-on permethrin preparations have been used on cats. Of these cases, 97 per cent of the cats had signs of poisoning, 88 per cent had twitching or convulsions and 10.5 per cent of the cats died or were euthanased. Although these data are startling, the VPIS feels that they are an under-representation of the scale of the problem.

The veterinary press often receives letters on the topic from vets in practice and the Veterinary Medicines Directorate (VMD) highlighted the problem in 2000 - 'These spot-on products are sold through UK pet stores or supermarkets and veterinary surgeons should be alert to the possibility of being presented with feline cases' (Gray, Veterinary Record 147, p556).

Further info: [Full FAB cats website article](#)

BIOSPY TIPS - Lymph nodes

- Biopsies of lymph nodes should be representative. Small biopsies are often fragmented and display marked artefact. Large wedge biopsies or excision biopsies should be taken.
- Gentle handling of lymph node tissue is recommended as crush artefact is easily induced with rough handling.
- Formalin is the recommended fixative. Immunohistology on tissue fixed by other means is often not possible. Abundant amounts of fixative (10% formalin, 5-10 times the volume of the specimen) should be used.

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