



## CASE OF INTEREST

Progressive Dendritic Cell Histiocytosis in a DLH cat

By Ann Pocknell, Veterinary Pathologist

A 9 years 8 months old, spayed female, DLH cat developed firm masses and hairless, scaly plaques in the skin over a period of at least four months. The first mass was noted in a foot, with subsequent plaques appearing primarily on the face and forelimbs with a few on the shoulders and dorsum. Treatment with dexamethasone and antibiotics resolved some secondary inflammation but the masses and plaques themselves did not improve. Biopsies of three representative lesions were submitted for histology.

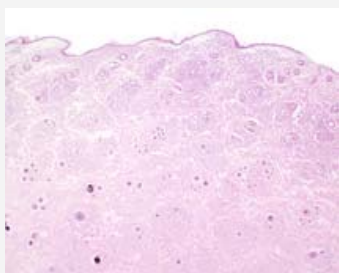


Figure 1. Low power overview of lesion (obj x10, HE stain). Click to enlarge.

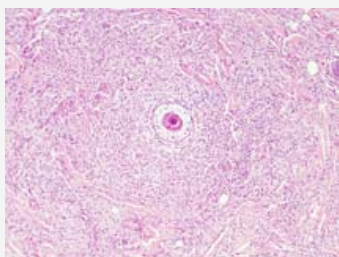


Figure 2. High power view of histiocytic infiltrate sparing hair follicles (obj x20, HE stain.) Click to enlarge.

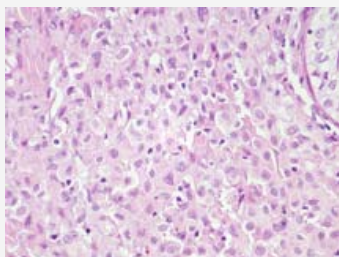


Figure 3. High power view of plump often monomorphic histiocytes (obj x40, HE stain.) Click to enlarge.

The lesions consisted of unusual proliferations of fairly bland-appearing histiocytoid cells. Immunohistochemistry was performed in order to rule out other round cells. The cells in these lesions stained only with histiocytic markers, so confirming the diagnosis of feline progressive dendritic cell histiocytosis.

The presentation is typically of solitary or multiple plaques or small masses in the skin, especially in the face, feet and legs. A recent study shows that cats of any age or breed may be affected. Females have been affected more often than males.

This is an uncommon condition of unknown aetiology. Until recently, sparse data were available regarding its clinical course and prognosis. A very recent study of 30 cases suggests that this condition should be considered as an indolent neoplasm that slowly progresses. Lesions often remain confined to the skin for months or up to 3 years. The infiltrate then progresses to the lymph nodes. In 7 out of 30 cats in the study. There was terminal widespread visceral involvement, which at this late stage was indistinguishable from histiocytic sarcoma. A number of chemotherapeutic, immunomodulatory and immunosuppressive therapies were attempted in this study, but none was successful.

Diagnosis of the condition hinges on biopsy with histopathology and often with confirmatory immunostaining.

### References:

- Affolter, V.K. and Moore P.F. Feline Progressive Histiocytosis. Vet Pathol 43(5), pp. 646-655, September 2006.

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## JOURNAL Articles(with e-links)

1. **Retrospective study on the diagnostic value of full-thickness biopsies from the stomach and intestines of dogs with chronic gastrointestinal disease symptoms.** Kleinschmidt S, Meneses F, Nolte I, Hewicker-Trautwein. Vet Pathol. 2006 Nov; 43(6): 1000-3. [Link](#)

An evaluation of histologic findings in full-thickness biopsies from the gastrointestinal tract (GIT) from 64 dogs with chronic GIT disease symptoms was performed. In the majority of cases (38/64; 59%), intestinal lymphangiectasia and mucosal oedema of unknown aetiology were present. In 10 dogs (16%) an eosinophilic colitis, either alone or together with gastritis and/or enteritis, was found. In 5 dogs (8%) lymphocytic-plasmacytic enteritis or enterocolitis was diagnosed. Five dogs (8%) had an intestinal T-cell lymphoma. Samples from the remaining cases were histologically normal or did not allow for a final diagnosis. In contrast to reports about findings in endoscopic biopsies (which often are of varying quality or inadequate for diagnosis), in the majority of cases of this study, examination of full-thickness biopsies from the GIT allowed us to make a definitive histopathologic diagnosis. Furthermore, the study revealed that transmural biopsies are very helpful for diagnosing lymphoma.

2. **Diagnostic value of cytologic examination of gastrointestinal tract tumors in dogs and cats: 83 cases (2001-2004).** Bonfanti U, Bertazzolo W, Bottero E, De Lorenzi D, Marconato L, Masserdotti C, Zatelli A, Zini E. J Am Vet Med Assoc. 2006 Oct 1; 229(7): 1130-3. [link](#)

Results of cytologic examination of fine-needle aspirates (n = 67) or impression smears (31) were compared with the histologic diagnosis, and extent of agreement was classified as complete, partial, none, or undetermined. Results suggest that there was moderate agreement between results of cytologic examination of fine-needle aspirates from dogs and cats with gastrointestinal tract neoplasia and the definitive histologic diagnosis. The agreement between results of cytologic examination of impression smears and the histologic diagnosis appeared to be higher.

3. **Histologic features and clinical outcomes of melanomas of lip, haired skin, and nail bed locations of dogs.** Schultheiss, P.C. J Vet Diagn Invest. 2006 Jul; 18(4): 422-5. [Link](#)

Outcomes, signalments, and the relationship of histologic features with the outcome of melanomas located in lip, nail bed, and haired skin of dogs were reviewed. These melanomas were diagnosed as benign or malignant based on histologic features. Melanomas of the lip arose from mucous membrane in most cases. 32 dogs with lip melanomas that had histologic features of malignancy, 22 died because of the tumor within 1 year and 10 were tumor free for at least 1 year following removal. Of 10 dogs with melanomas with benign histologic features on the mucous membrane of the lip, 9 were tumor free for at least 1 year. Of 4 dogs with benign appearing tumors of the haired skin of the lip, 3 were tumor free for at least 1 year. Melanomas with histologic features of malignancy occurred in many locations of haired skin, and 11 of 24 dogs were tumor free for at least 1 year. All nail bed melanomas had histologic features of malignancy and all invaded the third phalanx, but 6 of 14 dogs were tumor free for at least 1 year after amputation of the digit. Among these dogs, the 1-year survival rates for tumors classified as malignant by histologic features were 69% for lip, 46% for haired skin, and 43% for nail bed. However, the clinical outcome of an individual malignant tumor could not be predicted accurately by any specific histologic features.

• Feline Progressive Dendritic Cell Histiocytosis In: Skin Diseases of the Dog and Cat, 2nd edition (2005), Gross, Ihrke, Walder and Affolter pp. 845-848.

• Kraje, A.C., Patton, C.S., and Edwards, D.F. Malignant Histiocytosis in 3 Cats. J Vet Intern Med 15: 252-256, 2001.

## LATEST NEWS - By Malcolm Silkstone

### Are you aware of Cutaneous Bacterial Overgrowth Syndrome?

Cutaneous bacterial overgrowth syndrome (BOG) has been recently recognised as a superficial cutaneous disorder affecting mainly adult dogs suffering from chronic dermatitis, especially allergic skin disease. There may be accompanying Malassezia overgrowth. It is due to hyperproliferation of S intermedius that is unaccompanied by typical signs of superficial or deep pyoderma.

#### How is it diagnosed?

The differential diagnosis is wide, and includes all localised and generalised pruritic and seborrhoeic disorders, including parasitism, Malassezia dermatitis and allergic skin disease. The diagnosis is based on the history, clinical signs and examination of sellotape impression smears.

There is usually a history suggesting a chronic underlying disorder. Clinical signs include localised, regional or generalised pruritic lesions that may be characterised by greasy seborrhoea, an offensive odour, erythema, lichenification, hyperpigmentation, excoriation and alopecia.

Stained sellotape impression smears of lesional skin, examined under oil immersion, show an increased number of cocci, with or without rods, in comparison to preparations from clinically normal skin. Malassezia yeasts may also be detected in this way.

Culture is usually not necessary unless the condition is severe and rods are numerous. The rods may be indicative of a Gram-negative infection such as E coli, Pseudomonas and Proteus.

Histopathology is not diagnostic of BOG. In one study, cocci were seen in the stratum corneum in only 50 % of dogs with BOG. There is usually an accompanying superficial perivascular, spongiotic and hyperplastic dermatitis, which likely reflects the underlying disorder, but which is also fairly non-specific, diagnostically.

#### Treatment of BOG.

Once the likelihood of BOG is established, treatment is with topical and systemic antibacterials. Localised lesions may be treated topically but it has been shown that the bacterial overgrowth is often more generalised than the clinical picture suggests in such cases. Topical therapy includes clipping and the application of antibacterial shampoos.

Recommended bactericidal oral antibiotics include cephalixin (30mg/kg/day, divided in two doses), amoxicillin and clavulanic acid (25mg/kg/day, divided in two doses) and baquiloprim and sulfadimethoxine (30 mg/kg/ every other day). Marbofloxacin (2mg/kg per day) can be used to treat rare Gram negative BOG.

Dogs should be re-examined after 2 weeks and again after 4 weeks of therapy. Significant improvement is usually seen within 14 days. Persistence of pruritus despite resolution of the clinical lesions suggests an underlying allergy. Resolution of pruritus but persistence of seborrhoea and alopecia suggests an underlying cornification disorder and/or an endocrinopathy. In rare cases, there is complete resolution of clinical signs. The underlying cause of the BOG in such cases isn't known.

#### KEY FACTS

- Clinically significant bacterial overgrowth often complicates an underlying dermatitis.
- Typical signs of pyoderma are often not present.
- There may be concurrent Malassezia overgrowth.
- The diagnosis requires consideration of the history, clinical signs and examination of sellotape impression smears.
- Bacterial culture is seldom required.
- Treatment is with topical and systemic (bactericidal) antibiotics.
- The response to treatment often helps identify the nature of the underlying dermatitis.

#### References:

1) Prospective Study of Bacterial Overgrowth Syndrome in Eight Dogs, by Pin and others, in Vet Record 2006; 158; 437-41

2) Microbial Overgrowth: Topical and Systemic Therapy, by Didier Pinn; and  
3) What is the Importance of Microbial Overgrowth in Allergic Skin Disease , also by Didier Pinn  
In: Proceedings of the 21 st Annual Congress of the ESVD-ECVD, 2006

## BIOPSY TIPS - Eyes

Enucleation specimens are frequently bisected or punctured prior to submission to a pathologist. This is thought to ensure correct fixation. However this usually destroys the intraocular architecture and complicates the interpretation.

Fixative should generally not be injected into the globe unless the same quantity of fluid is removed with a syringe at the corneal/limbal border. This leads to over-distension. Injection of formalin is not required however. The eye should have the majority of fat and muscles removed. If the eye is enucleated by suturing the eyelids, together they should be reopened and the eyelids removed if deemed not to be relevant.

Fixation is achieved by immersion in 10 times the volume of buffered 10 formal saline> fixation is usually complete in 48 hours.

## SIDE STORY

### Feline Injection Site Sarcoma Study

A multidisciplinary study is currently being conducted at the Animal Health Trust (AHT) and Faculty of Veterinary Medicine, University of Glasgow (GUVS), to investigate the epidemiology, histopathological features and proteomics of FISS.

Important historical and clinical information from both veterinary surgeons and owners of cats with, and without, FISS, is required to identify risk factors for the development of FISS. The participating pathologists have defined the histopathological criteria for inclusion of cases in the study. Cases will be initially identified at the collaborating pathology services (Abbey Veterinary Services; AHT; Department of Veterinary Medicine, University of Cambridge; GUVS; and IDEXX Laboratories).

All members of the profession are encouraged to help/become involved in this study, as it is important that as much information is collected as possible. If colleagues have recently diagnosed a FISS or have clinical suspicion of one in the future, please contact Rachel Dean at the AHT. Client confidentiality will be maintained and guaranteed at all levels.

During this study attempts to calculate the incidence of FISS in the UK will be made and to consider the effectiveness of treatment of FISS and survival of affected cats. The results of the study will also provide data about vaccination practices and protocols in veterinary practices in the UK, and attitudes among cat owners towards preventive health care. For further information about this study please contact Rachel Dean at the address below, telephone 01638 750659 ext 1228, rachel.dean@aht.org.uk.

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