Abbey Veterinary Services
DIAGNOSTIC HISTOPATHOLOGY AND CYTOLOGY

Clinicopathological Newsletter | August 2009 / issue 17

CASE OF INTEREST

A case of Rhabditic dermatitis in a dog.

By Richard Fox, Veterinary Pathologist.

Case Donated by Judith Hargreaves, Veterinary Pathologist.

A six month old Dogue de Bordeaux presented with a three month history of perineal pruritis. On examination the lesions were present on the haired skin of the perinium and tail base identifed as papulocrustous lesions with hyperaemia and alopecia. The lesions did not respond to a protracted course of broad-spectrum antibiosis. Two punch biopsies were taken of affected areas and sent for histopathology.

The skin biopsies revealed only specific changes in one biopsy. The epidermis in this biopsy (Figure 1) was focally hyperplastic which extended into the follicular infundibulum. Beneath the rest of the follicle was effaced by pyogranulomatous inflammation with multiple in-situ nematode larve of approx. 30µm in diameter.

Figure 1. Histological section of haired skin with an area of furunculosis characterised by large numbers of neutrophils and macropahges (H&E).

These are normally identified as having paired lateral alae, platymyrian musculature and hardly a discernible intestine (Figure 2). Due to the constraints of the biopsy these were poorly defined but not compatible with demodex mite morphology (a differential diagnosis).

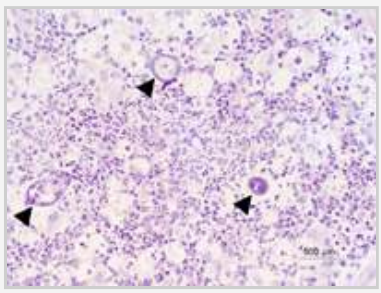

Figure 2. Histological section of haired skin highlighting the area of pyogranulomatous inflammation with characteristic nematode larvae (arrowheads) (H&E).

Upon receiving the biopsy results the dog was treated by removing it from its environment (normally outside on a farm) and its perineum bathed and cleaned. Unfortunately clinical signs were was still present for a further 3 months and the lesions again biopsied with a similar result.

Pelodera (Rhabditis) strongyloides is a small free-living saprophytic nematode that normally completes its entire life cycle in organic matter. This species includes a particular strain referred to as *P. (R.) strongyloides dermatitica*, the third-stage larvae of which are capable of invading the skin, although rarely, causing dermatitis in several mammalian species, including the dog and man. As decaying organic matter is a natural habitat of *P. strongyloides*, damp straw bedding is often present in the history of dogs suffering from *Pelodera* dermatitis. For the same reason, the hallmarks of *Pelodera* dermatitis, such as erythema, alopecia, papulocrustous skin lesions and pruritis, are usually seen wtih skin in contact with the ground and decaying organic matter. The case reports of canine *Pelodera* dermatitis are predominantly from central Europe or the Midwestern United States.

The typical histopathological findings of *Pelodera* dermatitis are very similar to those of canine demodicosis, but as the the sections are usually cut in 4-µm sections only fragments of longitudinally or transversely cut larvae can be seen. These fragments of *Pelodera* larvae accompanied by typical histopathological changes can easily be misinterpreted as demodicosis. Paired lateral alae of the cuticle, the platymyarian musculature, an intestine composed of uninucleate cells and the absence of jointed appendages in *Pelodera* are features enabling

In this issue:

JOURNAL Articles(with e-links)

1. Ledbetter EC, Kim SG, Dubovi EJ. Outbreak of ocular disease associated with naturally-acquired canine herpesvirus-1 infection in a closed domestic dog colony. Vet Ophthalmol. 2009 Jul-Aug;12(4):242-7. Link

Complete ophthalmic examinations were performed and ocular samples collected for CHV-1 polymerase chain reaction and virus isolation on Twenty-seven 10- to 16-week-old laboratory Beagles. The prevalence of ocular morbidity was 100% in examined dogs. Lesions were restricted to the ocular surface and included bilateral conjunctivitis (100% of dogs); punctate, dendritic, or geographic ulcerative keratitis (26% of dogs); and non-ulcerative keratitis (19% of dogs). Conjunctival petechiae were detected in 22% of dogs. Punctate and dendritic corneal ulcers were frequently organized into discrete groups or linear arrangements. Non-ulcerative keratitis appeared clinically as a perilimbal ring of superficial corneal vascularization and leukocyte infiltration. CHV-1 was detected in ocular samples by polymerase chain reaction or virus isolation in all dogs sampled. In susceptible populations of domestic dogs, CHV-1 may be associated with outbreaks of highly contagious ocular infection in the absence of concurrent overt systemic disease. This naturally-acquired outbreak of CHV-1 infection provides an opportunity to report the spectrum and prevalence of ocular lesions associated with primary ocular CHV-1 infection in dogs. Conjunctivitis was the most frequent ocular lesion detected. Ulcerative and non-ulcerative keratitis were less prevalent and of variable clinical appearance. Dendritic ulcerative keratitis, a classic and relatively specific ocular lesion associated with alphaherpesvirus infection, was detected in < 20% of dogs.

2. Shoieb AM, Hanshaw DM. Anal sac gland carcinoma in 64 cats in the United Kingdom (1995-2007). Vet Pathol. 2009 Jul;46(4):677-83. Epub 2009 Mar 9. Link

A retrospective study was performed to characterize 64 cases of anal sac gland carcinoma (ASGC) in cats. All ASGCs diagnosed between 1995 and 2007 at a private diagnostic laboratory in the UK were reviewed. Apocrine gland origin was confirmed in a subset of these tumors by immunohistochemistry and the use of the glandular cytokeratin antibody (CAM 5.2). Associated clinical, gross, and histologic features were compared with those of canine ASGC. Anal sac gland carcinoma accounted for 0.5% of all feline skin neoplasms. Thirty-nine of the cats with ASGC were female, with a female male ratio of 1.56. Fifty-two (81.1%) of the 64 tumors were in Domestic Shorthair cats, 5 (7.8%) in Siamese, 3 (4.8%) in Domestic Longhair, 2 (3.1%) in Burmese, and 1 (1.6%) each in a Birman and a Persian cat. Significant differences in prevalence of ASGC among breeds were not detected. Cats ranged in age from 6 to 17 years (median and mean age, 12 years). More than three quarters of the affected cats for which postsurgical outcome was known were euthanased or died as a direct consequence of the neoplasm, with a median survival of 3 months. Survival rates at 1 and 2 years were 19 and 0%, respectively.

3. Berg RI, Sykes JE, Kass PH, Vernau W. Effect of repeated arthrocentesis on cytologic analysis of synovial fluid in dogs. J Vet Intern Med. 2009 Jul-Aug;23(4):814-7. link

Serial arthrocentesis and synovial fluid examination can be used to monitor treatment efficacy in immune-mediated polyarthritis (IMPA), but whether this procedure induces inflammation that interferes with test result interpretation is unknown. The aim of this study was to determine the effect of repeated arthrocentesis on synovial fluid cytology in healthy dogs. Nine healthy client-owned dogs. Prospective study. Arthrocentesis was performed under sedation on 4 joints (both carpi, 1 tarsus, 1 stifle) on each dog every 3 weeks, a total of 4 times. Automated cell counts were done on stifle fluid, smears were made, and differential cell counts done on smears from all joints. Slides were evaluated microscopically for erythrocyte numbers, total nucleated cell count, differential cell count, and cell

differentiation even if only a few transversal sections of the parasite are observed in a biopsy sample.

Effective treatment consists primarily of removing and destroying moist, infested bedding material and moving the animal to a clean, dry environment. Usually, spontaneous recovery ensues. It may be desirable to dip or spray the affected animals with an insecticidal preparation at least twice at weekly intervals. Short-term use of corticosteroids may be indicated if pruritis is severe.

References:

1.Diseases of the Adnexa. In: Skin Diseases of the Dog and Cat, 2nd edition (2005), Gross, Ihrke, Walder and Affolter pp. 449-450.

2. Saari SA, Nikander SE. Pelodera (syn. Rhabditis) strongyloides as a cause of dermatitis - a report of 11 dogs from Finland. Acta Vet Scand. 2006 Sep 5;48:18.

morphology. Data were analyzed by 2-way analysis of variance. A total of 144 synovial fluid samples were examined. Repeated arthrocentesis was not associated with increases in synovial fluid neutrophil numbers. Mild mononuclear inflammation was detected in 13 samples from 6 dogs. Serial arthrocentesis at 3-week intervals can rarely be associated with mild mononuclear joint inflammation, but does not appear to induce neutrophilic inflammation, at least in healthy dogs, and can be useful to monitor treatment response in canine IMPA.

CYTOLOGY TIPS

Synovial fluid

• Restraint: Good restraint allows for controlled manipulation and immobilistaion of the joint. This reduces damage of tissues outside and inside the joint that often leads to sample contamination i.e. haemorrhage.

• Equipment: 1-5 ml syringes and 1 inch 20-22 ga needles should be used but if the joint is very small then a 25 ga needle can be used.

• Appropriate approach: It is important to have the proper approach so collection of adequate amounts of joint fluid can be obtained. Further details are available in good veterinary text books such as Diagnostic cytology and hematology of the dog and cat (3rd Ed available)

• Sample handling: Normal synovial fluid does not clot but in most pathological conditions and with sampling haemorrhage they may. Immediate smearing (air dried) and collection in EDTA is indicated. Formalin may be added in a spare sample especially if a delay in processing is anticipated (labellled accordingly). EDTA artefact, cell autolysis as well as bacterial overgrowth all occur with a delay in processing joint fluid.

• Bacteriological culture cannot be performed on EDTA samples or one with formalin added. Fresh fluid submission is advisable over fluid soaked swabs.

Intersting Article: Berg RI, Sykes JE, Kass PH, Vernau W. Effect of repeated arthrocentesis on cytologic analysis of synovial fluid in dogs. J Vet Intern Med. 2009 Jul-Aug;23(4):814-7.

LATEST NEWS

Ulcers frequent among all types of horses, company says

Experts agree that everyday stressors can contribute to gastric ulcer formation in horses. All breeds and disciplines have been found to develop ulcers, sometimes in as little as five days.

An awareness campaign led by Merial sought to bring greater exposure to the issue of gastric ulceration in horses by hosting gastroscopy events across the country this past year.

More info: JAVMA Website

SIDE STORY

List of Inherited disorders in cats - confirmed and suspected

On the Feline Advisory Bureau's website there is a list that has compiled to bring feline inherited disorders together. It has been divided into specific cat breeds and within each breed section it is divided into different body systems.

This is followed by a more general section which addresses conditions that can affect many different breeds of cat or non-pedigree cats, and also includes conditions which appear to affect certain breeds (or at least certain breeding lines of certain breeds) more frequently than others.

n.b. However, some of the conditions on this section may be multi-factorial in nature and may possibly result from breed-related management practices rather than resulting solely from genetics.

Further information External Link (FAB Website)

MESSAGES

SEMINARS

We have recently been asked to give clinicopathological and pathological seminars by groups of practices and specialist groups.

If you have a request for us to give a talk on a particular subject, especially if you are have a specialist interest or are a member of a specialist referral centre we would like to hear from you.

We have a team of very experienced pathologists with a broad knowledge of disease in a wide variety of animals. Many of our pathologists are accustomed at presenting talks. Just Let us know!

OUR DETAILS

Abbey Veterinary Services
89 Queen Street
Newton Abbot
Devon
U.K.
TQ122BG

admin@abbeyvetservices.co.uk

Tel: +44 (0)1626 353598
Fax: +44 (0)1626 335135

Where we are: Multimap Link

DOWNLOADS

- Submission Forms
- Postal Labels