Abbey Veterinary Services
DIAGNOSTIC HISTOPATHOLOGY AND CYTOLOGY

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CASE OF INTEREST

A case of Strealensia infection in a dog.

By Richard Fox, Veterinary Pathologist and Liora Waldman, Veterinary Dermatologist.

A four year old entire male Terrier presented after being stolen and kept in poor conditions. He presented with generalised macules or ecchimosae according to the referring veterinary surgeon. The dog displayed generalised pruritus. Due to the skin lesions the animal's clotting profile was assessed. His PT, PTT and haemogram were within normal parameters.

Two weeks later he developed urticarial-like lesions with papules and was still moderately pruritic. On referral, lesions were present on the trunk, legs and head. He had multiple papules on all legs (Figure 1). He was pyrexic with a temperature of 40.1C.

Figure 1. Gross photography of the discrete macular and nodular erythematous lesions with alopecia of the left foreleg.

Three punch biopsies were taken of affected skin and blood was taken for Erlichia PCR. The PCR gave a positive result and during the next three weeks Doxycycline at 10mg/kg per day was administered.

The skin biopsies revealed only specific changes in one biopsy. The nodules identifed clinically were composed, histologically, of a dilated follicular ostium which contained parts of a larval arthropod, and showed a marked pseudoepitheliomatous follicular hyperplasia and a perifollicular mucinosis (Figure 2). Additional step sections were initially required to identify the components of the arthropod.

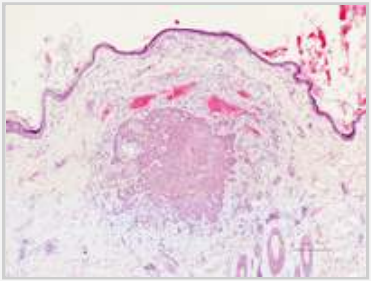

Figure 2. Histological section of haired skin with a peripheral section of the dilated and hyperplastic follicular infundibulum surrounded by mucinotic dermis and mononuclear inflammation (H&E) Scale Bar=200um.

The larva was present within the section but the surrounding refractile eosinophilic, sometimes mineralised, amorphous tube (Stylosome) which opens at the epidermal surface and communicates with the underlying dermis was evident (Figure 3). Lymphocytes and plasma cells were relatively abundant and surround the expanded hair follicle infunduibulum together with moderate fibrosis. Hyperaemic and dilated dermal vasculative were evident and the overlying epidermis displayed moderately hyperplastic.

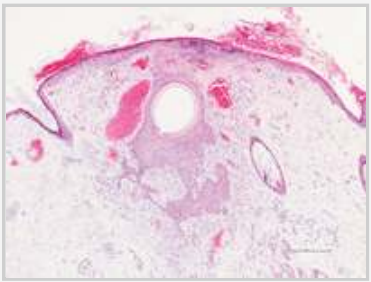

Figure 3. Histological section of haired skin with a central section of the dilated and hyperplastic follicular infundibulum containing the glassy membrane representing th sytolosome. (H&E) Scale Bar=200um).

Upon receiving the biopsy results Ivermectin injectable at 300mcg/kg was initiated on a 2 weekly basis and Fipronil spray.

The trombidioid mite *S cynotis* induces a typical nodular dermatitis in dogs living in south and south-west France. Five species have now been described in the genus Straelensia, the first

In this issue:

JOURNAL Articles(with e-links)

1. Glos K, Linek M, Loewenstein C, Mayer U, Mueller RS. The efficacy of commercially available veterinary diets recommended for dogs with atopic dermatitis. Vet Dermatol. 2008 Oct;19(5):280-7. Epub 2008 Aug 7. Link

The classical treatments for dogs with atopic dermatitis have traditionally been oral antipruritic drugs, allergen-specific immunotherapy and topical therapy. Fifty dogs with atopic dermatitis were included in this multicentred, double-blinded, randomized study to compare clinical response to an 8-week period of feeding one of three commercial veterinary foods marketed for dogs with atopic dermatitis (diets A-C) or a widely distributed supermarket food (diet D). Atopic dermatitis was diagnosed using Willemse's criteria and through the exclusion of differential diagnoses. Fourteen dogs were assigned to diet A and 12 dogs each to diet B, C or D. Flea and tick control using a monthly fipronil spot-on product was administered for a minimum of 4 weeks prior to inclusion in the study and during the study period. Evaluations were made monthly. These included lesion scores, using an established scoring system (canine atopic dermatitis extent and severity index, CADESI-03) and owner evaluation of pruritus level using a visual analogue scale. After 8 weeks on the new diets, there was a significant improvement in CADESI and pruritus scores with diet B (Wilcoxon test, P = 0.043 and paired t-test, P = 0.012, respectively), in pruritus scores with diet A (paired t-test, P = 0.019) and in CADESI scores with diet D (Wilcoxon test, P = 0.037). No significant changes were detected with diet C. Based on the results of this study, in addition to the conventional therapies, changing the diet of dogs with atopic dermatitis may be a useful adjunctive therapeutic measure.

2. Kafarnik C, Rawlings M, Dubielzig RR.Corneal stromal invasive squamous cell carcinoma: a retrospective morphological description in 10 horses. Vet Ophthalmol. 2009 Jan-Feb;12(1):6-12. Link

This paper describes the pathomorphological features of corneal stromal invasive squamous cell carcinoma (CSI-SCC) in horses. MA total of 87 equine SCC in the Comparative Ocular Pathology Laboratory of Wisconsin database were retrieved. The signalment and anatomical distribution were summarized. Ten CSI-SCC out of 87 SCCs were further investigated focusing on pathomorphological description. All 10 cases were stained with H&E, periodic acid-Schiff stain and Verhoeff's elastic stain. Four Appaloosas, two Quarter horses, two American Paint, one Pinto and one Thoroughbred horse were affected. The mean age at the time of enucleation/keratectomy was 16.7 +/- 5.2 years. Out of 10, five horses were clinically diagnosed as chronic stromal keratitis, 3 of 10 had a previous biopsy diagnosed as SCC, 1 of 10 was described as stromal mass, and 1 of 10 as invasive SCC. Previous keratectomies before enucleation were performed in 3 of 10 horses, of which 2 also had additional lasertherapy/cryotherapy. Seven of 10 cases showed tumor infiltration in the anterior-mid stroma, 3/10 in the mid-deep stroma. The anterior epithelium had no contact with the CSI-SCC in 8 of 10 cases, 7 of 10 had intact and normal epithelium, and 3 of 10 showed intact, dysplastic corneal and conjunctival epithelium. The limbus was not pigmented in 8 of 10 specimens. There was a mild-moderate lymphoplasmacytic inflammation between the neoplastic islands. Solar elastosis was present in 2 of 10 samples. The CSI-SCC shows a distinctive intrastromal tumor growth pattern with a smooth, intact corneal epithelium. The tumor can be underestimated and misdiagnosed as chronic active stromal keratitis. A deep biopsy is necessary for the definitive diagnosis.

specimen being *Straelensia europea* found attached to the eyelid of a young wolf in Bulgaria. The other species are *Straelensia tiani*, *Straelensia taurica*, both collected from hares, and *Straelensia africana* found on an African mongoose.

As in most trombidioid diseases, mild to moderate *S cynotis* infestation is not detrimental to the health of the host animal. However, more severe generalised infestations induce pain to the touch, decreased food intake and fatigue.

As opposed to most trombidioid infections, S. cynotis larvae are in the follicular ostium. When larva attach to the skin, it injects its saliva, which is very rich in proteolytic enzymes, thus causing the digestion of the host tissues. The surrounding skin hardens and a feeding tube called a stylostome is formed. The digested material is then reabsorbed through this structure. The nature of the stylostome is unknown, but it is hypothesized that it derives from the salivary secretions of the mites.

Recommended treatments include systemic Ivermectin (Virbamec®; Virbac de Portugal Laboratorios LDA, Almeirim, Portugal, 1 mg/kg, s.c., in the first week; 0.5 mg/kg, s.c., weekly, for 1 month) and oral antibiotic therapy (amoxicillin-clavulanic acid, Clavamox®; Bial Laboratory, S. Mamede do Coronado, Portugal, 22 mg/ kg q 12 h, p.o. for 2 weeks).

This disease is not recorded in the UK but animals travelling to Europe on the pet pastport scheme maybe exposed to this mite and therefore, as with other diseases such as Leishmaniosis, warrant consideration when dogs return from the Continent.

References:

1. Seixas F, Travassos PJ, Pinto ML, Correia J, Pires MA. Dermatitis in a dog induced by Straelensia cynotis: a case report and review of the literature. Vet Dermatol. 2006 Feb;17(1):81-4.

2. Le Net JL, Fain A, George C, Rousselle S, Théau V, Longeart L. Straelensiosis in dogs: a newly described nodular dermatitis induced by Straelensia cynotis. Vet Rec. 2002 Feb 16;150(7):205-9.

Acknowledgments:

Many thanks to Liora Waldman, BVM&S CertSAD MRCVS, Haifa, Isreal for the clinical information and photography.

3. Zanna G, Fondevila D, Bardagí M, Docampo MJ, Bassols A, Ferrer L. Cutaneous mucinosis in Shar-pei dogs is due to hyaluronic acid deposition and is associated with high levels of hyaluronic acid in serum. Vet Dermatol. 2008 Oct;19(5):314-8. link

Cutaneous mucinosis affects primarily Shar Pei dogs. Hyaluronic acid (HA) is considered to be the main component of mucin and CD44 is the major cell surface receptor of HA, necessary for its uptake and catabolism. The aims of this study were to identify the composition of the mucin in cutaneous mucinosis of Shar Pei dogs, investigate the correlation between the deposition of HA and the expression of CD44, and determine whether Shar Pei dogs with cutaneous mucinosis presented with elevated levels of serum HA. In skin biopsies, the mucinous material was stained intensely with Alcian blue and bound strongly by the hyaluronan-binding protein. No correlation was found between the degree of HA deposition in the dermis and the expression of CD44 in the skin of Shar Pei dogs affected or unaffected by cutaneous mucinosis. A clear positive correlation was found between the existence of clinical mucinosis and the serum HA concentration. In control dogs, serum HA ranged from 155.53 to 301.62 microg L(-1) in Shar Pei dogs; without mucinosis it ranged from 106.72 to 1251.76 microg L(-1) and in Shar Pei dogs with severe mucinosis it ranged between 843.51 to 2330.03 microg L(-1). Altogether, the results reported here suggest that mucinosis of Shar Pei dogs is probably the consequence of a genetic defect in the metabolism of HA.

BIOPSY TIPS

The main benefits of permenant tissue markers for surgical margin identifation.

• Margins composed of mostly fat are often hard to identify on histology as it is relatively transparent. Adipose tissue processes poorly (and fragments) due to the lipid content and is hard to section as it has little connective tissue in it.

• Obtaining futher sections is easier as margins are already marked and easier to orientate.

• The use of different colours can relate to different aspects of the tissue i.e. caudal, cranial, deep etc instead of using suture material in which the orientation often gets lost after the first sections are taken. Visceral organs including gut can be marked not only skin samples.

• The professional tissue markers are quite thick and so don't run like India ink (which is also suitable).

• Tissue fragments on transportation, processing, embedding and sectioning and therefore marking can help when this occurs.

n.b. DO NOT USE QUINK!

Example of a tissue marking set:

LATEST NEWS

FDA: First Drug to Treat Cancer in Dogs Approved

The U.S. Food and Drug Administration today announced the approval of Palladia (toceranib phosphate), the first drug developed specifically for the treatment of cancer in dogs.

Palladia is approved to treat canine cutaneous (skin-based) mast cell tumors, a type of cancer responsible for about 1 out of 5 cases of canine skin tumors. The drug is approved to treat the tumors with or without regional lymph node involvement.

Palladia is a tyrosine kinase inhibitor and works in two ways: by killing tumor cells and by cutting off the blood supply to the tumor. In a clinical trial, Palladia showed a statistically significant difference in tumor shrinkage when compared with an inactive substance (placebo).

More info: US Palladia Webiste

SIDE STORY

Topical flea and tick products come under EPA scrutiny

A recent spike in the number of adverse reactions to spot-on flea and tick products reported in 2008 prompted the Environmental Protection Agency's April 16 announcement that it is stepping up its evaluation of these products.

Adverse reactions reported from the spot-on products range from mild effects, such as skin irritation, to more serious effects, such as seizures, and, in some cases, death. More than 44,000 potential incidents associated with registered spot-on products were reported to the EPA in 2008

Further information External Link (EPA 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

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