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Pododermatitis & How to really lick it!

Introduction

Pododermatitis is a complex of diseases affecting the pads or interdigital haired skin. They are common and can be frustrating. Most are inflammatory. The underlying causes include infections (bacterial, fungal and parasitic), allergic (atopy and food), immune mediated, neoplastic and environmental diseases. Psychogenic causes are usually not involved.

The canine foot is a special microenvironment and is similar to the ears. The secondary infections and primary diseases are common to both. This is because both are infolded haired skin that when swollen and irritated become occluded, with poor drainage and retained secretions that are an ideal environment full of nutrients for *Staphylococci* and *Malassezia*.

Handy Hints

As with any syndrome, always remember common diseases occur commonly. The feet are skin, look at the whole skin, body and ears, a lesser complicated dermatitis elsewhere may reflect the underlying cause.

Diagnosis

[1] Chronic persistent foot licking and chewing.

Commonly the area irritated is behind the carpus and the interdigital area. The foot is mildly swollen, erythematous and has little hair in the carpus. Often clients will advise the dog does not like walking on wet grass. Common causes are atopy (especially to grass pollens) with or without *Malassezia* and Staph infections. Less frequent is food allergy and if lots of scale and crust, consider severe *Malassezia* dermatitis. Tests of value are cytology for infections, then treat and remove. If still a problem, then try performing an allergy test (IDEXX/VPS ELISA) or skin test for atopy, or an elimination diet for



1a) Uncomplicated Atopic pododermatitis to grass pollens. 1b) Atopy with swollen feet, and secondary superficial staph infection.



1c) Food allergy, note swollen feet. 1d) *Malassezia* pododermatitis.

food allergy.

[2] Swollen painful interdigital skin.

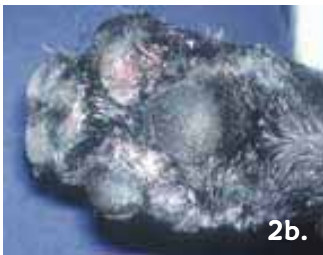
These are often more painful than itchy with lameness and careful licking. There is scale and crust with nodules, sinuses and exudation. Always check the prescapular and popliteal lymph nodes, and if swollen, then consider Demodex and deep bacterial infections. Common causes are Demodex and/or furunculosis with Staph or *Pseudomonas*.

Tests: Deep skin scrapes under sedation and if negative then biopsy is indicated. A pluck of hair under oil may reveal mites attached to the hair if you are lucky. Culture can be useful but is easily contaminated. If no Demodex, a month course of Cephalexin 20mg/kg BID and Pyohex foot baths before re-examining is a valuable first step. If improved, but still itchy and erythematous, consider furunculosis secondary to allergy, see [1] above for tests.





2a.



2b.



2c.

2a) Demodex pododermatitis, 2b) Interdigital Demodex pododermatitis, 2c) Staph folliculitis, secondary to Atopy.

[3] Nodules +/- Sinuses

There are several diseases presenting as nodules and sinuses. Interdigital cyst syndrome usually occurs in short coated dogs i.e. Staffies, Bull Terriers, Great Danes and Rottweilers. In these breeds the short bristle hair is easily pushed into the follicle by the dog's weight and toe movement. These cases will have another folliculitis predisposing cause. Commonly it is an allergy i.e. atopy and rarely contact and food allergy. Allergy signs may be mild, therefore look at the ears are they erythematous, is there licking of the forearm or body erythema evident? Look for signs of scratching, rolling or face rubbing. If only one foot is involved, consider grass seed foreign body. For approach see [1] & [2] above.

Single lesions can be tumours, however some tumours occur as multiple lesions. The common paw tumours are epitheliotrophic lymphoma, fibrosarcoma, metastatic adenocarcinoma, mast cell and squamous cell carcinomas. Others are the so-called sterile nodular granulomas which are Langerhans histiocytic disorders. There are four categories of histiocytic disorders:

1. Histiocytoma (button tumour) is a common benign and solitary fleshy tumour of young adults.
2. Cutaneous histiocytoses are multiple haired nodules on the feet and body that respond to steroids.
3. Systemic histiocytoses are similar to the cutaneous type but involve the skin and mucous membranes and respond to cortisone with Imuran.
4. Canine histiocytic sarcomas and canine malignant histiocytosis occur in Golden Retrievers, Labrador Retrievers, Bernese Mountain dogs and Rottweilers. These are difficult to treat, however some new anti cancer drugs are showing promise.



3a.



3b.

3a) Interdigital cysts a.k.a. Staph obstructed furunculosis, 3b) Sterile pyogranuloma (cutaneous histiocytosis)



3c.



3d.

3c) Focal adnexia dysplasia, 3d) Systemic histiocytosis (there were lesions in the nose)

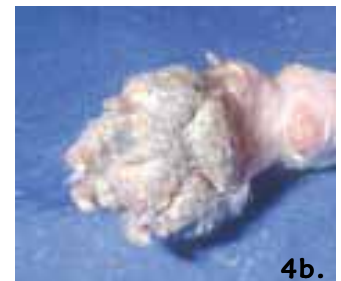
Adnexal dysplasia is a benign nodule that may ulcerate. They are usually single but can occur as interdigital swelling in multiple feet.

In cats, Xanthoma, a fat granuloma can occur associated with diabetes mellitus, lipid metabolic disorders and as a side effect of megestrol acetate.

Tests: A biopsy will give an accurate diagnosis. Some cases will be simple to treat however in others a serious prognosis will be revealed, or the biopsy will lead to an investigation of a systemic disease.



4a.

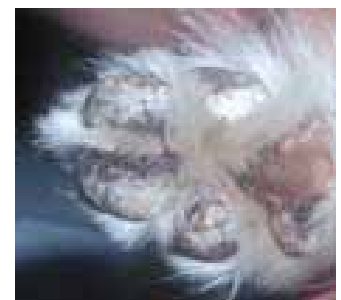


4b.

4a) Pemphigus foliaceus, 4b) Hepatocutaneous syndrome



4c.



4c) Actinic dermatitis, 4d) Cutaneous lupus in a Border Collie

[4] Crusted and/or Hyperkeratotic Foot Pads

In mature dogs without pruritus and involving multiple feet, these may be:

- a) immune mediated (Pemphigus foliaceus, lupus, drug eruption),
- b) or rarely infections (protothecosis)
- c) or metabolic (Hepatocutaneous syndrome).



In young dogs they can be:

- a) zinc deficiency
- b) generic dog food syndrome and
- c) in bull terrier pups, lethal acrodermatitis, a zinc and infection related genetic disease.

Mosquito bite allergy in cats is a seasonal pruritic dermatitis that can show pad hyperkeratosis, in association with papules and crusts on the nose and ears.

White bull terriers with actinic dermatitis may have hyperkeratosis of non pigmented pads.

Evaluation for systemic signs and biopsy is the appropriate test to reveal the diagnosis.

[5] Ulcerated Foot Pads

The causes may be traumatic, infection, immune mediated or neoplastic disease.

Depigmentation and/or ulceration of one or more pads in aged dogs may be the only presentation of Epitheliotropic lymphoma.

Contact allergy can occur at any age. Contact allergy to Wandering Jew should be considered if there are papules and macules on the non haired ventral abdomen skin as well.

Drug eruptions are a rare cause of pad ulceration, the mucous membranes are usually involved as well.

Idiopathic plasma cell pododermatitis is a rare disease in the cat, which may respond to Doxycycline and Nicotinamide.

Some interdigital bacterial infections associated with allergy may ulcerate from the edge.



5a) Epitheliotropic lymphoma aka Mycosis fungoides, 5b) Drug eruption to triamcinalone



5c) Bacterial ulceration underrunning pads from interdigital dermatitis, 5d) Trauma caused ulceration of benign tumour (focal adnexal dysplasia)

References

K Marcia Murphy., Pododermatitis. In The 5 - Minute Veterinary Consult Canine and Feline. 2nd Ed, P.46.

Customer Service Tip



Why not send home your hospitalised patients fluffy, shiny and sweet smelling, after a short stay. Cases without wounds can be bathed in Aloveen Shampoo and finished off with Aloveen Leave on Conditioner. Others may just need a brush and a spruce up with your hospital size pack (500mL) of Aloveen Leave on Conditioner. It may not be the most important part of your day but customer service goes a long way to putting you ahead of the rest!

P.S. Did you Know that Aloveen Leave on Conditioner can be used after a M:web bath to hydrate and soothe inflammation. The Way Cats and Dogs Think:

You give me food every day. You give me a warm place to sleep. You keep me brushed and clean. You love me. I must be GOD.



You give me food every day. You give me a warm place to sleep. You keep me brushed and clean. You love me. You must be GOD.

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Insects Implicated In Allergic Disease

We are all aware of the implication of the Flea in allergic disease but it is easy to forget about other insects that may play a major role in an insect allergic patient. Some of the most common insects causing reactions are ants, cockroaches, flies, mosquitoes, moths and of course midges. Possible routes of sensitization include bite, sting, inhalation, ingestion and percutaneous absorption. Allergenic cross-reactivities across diverse insect families may also be significant for some patients.



New Staff

Dermcare-Vet welcomes Janet Hooker to the fold. Janet is our new Business Manager, and along with her friend Billy she is here to help Dermcare move onward and upward. Janet will take on tasks from Letitia McKinnon who is on maternity leave.



Dermcare-Vet would like to wish everyone a safe and Happy Christmas and New Year.

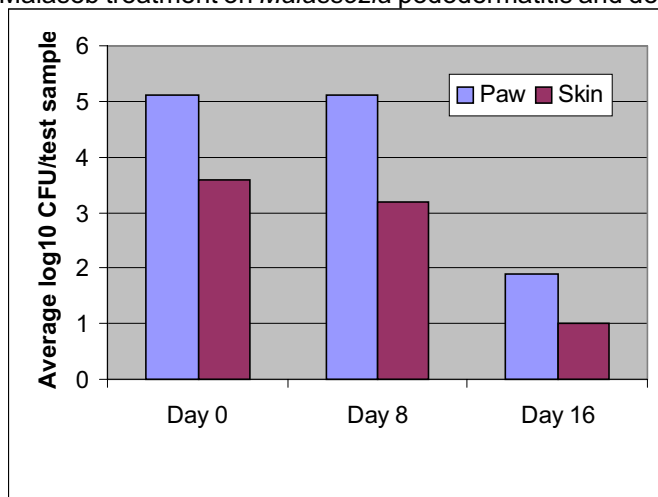


We are closed the 25th & 26th of December and the 1st of January

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New Research

Researchers at the Royal Veterinary and Agricultural University, Copenhagen, Denmark were able to quantitate *Malassezia* in pododermatitis by placing the foot in a plastic bag of a saline washing solution, then massaging the feet to release the yeasts. They then counted the yeasts. By using this technique they were able to demonstrate the efficacy of weekly Malaseb treatment on *Malassezia* pododermatitis and dermatitis. See graph



Effect of Malaseb^R on the population of *Malassezia pachydermatis* on paws and other skin areas from dogs with chronic skin problems. From each patient 2-3 lesion areas with an increased population of *M. pachydermatis* were selected, based on findings on day 0. Samples were collected from these areas on all 3 days. A total number of 20 patients were examined (20 paws and 24 other lesion areas). There were no significant differences between results obtained on day 0 and 8 for paws and other lesion areas, respectively ($p > 0.10$), but differences between day 0 and 16 and between day 8 and 16, on the other hand were highly significant ($p < 0.0001$).

These results are to be published in the Veterinary Record soon.

References

Marlene Skjodt Jensen, *In vivo* effect of Malaseb^R on *Malassezia pachydermatis* in dogs with chronic dermatitis. Masters Thesis, The Royal Veterinary and Agriculture University, Frederiksberg, Denmark.