

## PODODERMATITIS AND CLAW DISEASES

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Skin diseases prominently involving the feet, footpads, and nails are a challenge to diagnose and treat. These conditions typically fall into four categories: (1) diseases mostly involving the footpads; (2) diseases mostly involving the interdigital areas; (3) diseases mostly involving the claw or nailbed; and (4) diseases mostly involving pedal pruritus.

### **Diseases Involving Mostly the Footpads**

- Pemphigus foliaceus: the primary lesion is a superficial pustule or bulla. The primary lesions develop and burst rapidly, leaving behind circular areas of scaling, crusting, and hair loss. The lesions typically are found on the bridge of the nose, face, ears, mucocutaneous junctions, and trunk. Many animals have affected footpads, with peeling, scaling, and crusting lesions in layers.
- Hepatocutaneous syndrome: is a rare syndrome where distinctive skin lesions are present along with one of several types of liver disease. This syndrome is a metabolic disease of uncertain pathogenesis. ANY liver disease can be associated with hepatocutaneous syndrome. Many dogs with this syndrome are diabetic. The skin lesions consist of erosions, ulcerations, and fissuring of the skin of the muzzle, mucocutaneous areas of the face, distal limbs, and footpads. There is sometimes pain and difficulty walking.
- Note that these two diseases should be distinguished from physiologic “digital hyperkeratosis” which is prominent in some older dogs, and is not pathologic.

Laboratory and imaging evaluations are useful in differentiating these syndromes. The key to obtaining a specific diagnosis is to take a skin biopsy, preferably from early lesions. In hepatocutaneous syndrome, there will be evidence of liver disease on blood work or imaging.

### **Diseases Involving Mostly the Interdigital Area**

- Interdigital pyoderma: a deep folliculitis and furunculosis caused by *Staphylococcus pseudintermedius* bacteria. In addition to bacterial infection, hair shaft material trapped in the furuncles acts as a foreign body. If the condition becomes chronic, scar tissue may form and entrap hair material or foci of infection, worsening the prognosis for eventual cure. Typically, the initial lesion is a firm or fluid-filled nodule between the toes. This disease was sometimes called “interdigital cysts,” and some cases actually do represent ruptured cystic hair follicles with secondary infection. Treatment consists of oral antibiotic administration to control the infection component. It is important that treatment is continued for at least 2 weeks past clinical resolution. This means 6 or more weeks of antibiotics! Systemic corticosteroids should not be used in these cases. In cases where chronic scarring is involved, relapse may occur rapidly after antibiotics are stopped because of the foreign body reaction. In this case, there may be no choice but to treat the dog with topical corticosteroids applied interdigitally, as palliative treatment. Surgical removal is possible if the lesions are focal and resectable. Immunostimulant preparations have met with little success in chronic interdigital pyoderma.

- Pododemodiosis is an infestation and overgrowth of *Demodex canis* mites in the interdigital areas and skin of the toes and feet. In demodiosis, there is in theory always an underlying problem with the immune system. In a very young dog, an inherited immunologic defect is present. In adult-onset demodiosis, any underlying systemic disease may be possible. Clinical signs include alopecia, furuncles and draining tracts on the distal limbs and interdigitally. Secondary bacterial infection is always present. One must distinguish this from interdigital pyoderma without mites; they often look very similar. The prognosis for pododemodiosis is always somewhat worse than with other cases of demodiosis. Even if the mites are eventually gone, the chronic, scarring changes may leave the dog predisposed to chronic interdigital pyoderma.

### **Diseases Involving Mostly the Claw or Nailbed**

- Bacterial paronychia: there is erythema and swelling of multiple nailbeds. Footpads and interdigital spaces are usually quite normal. There is purulent discharge around the nailbed, or coming out of the nail. The nails are often malformed, broken, or may come off. The disease is usually painful, rather than pruritic. Carefully distinguish this condition from nail loss without swelling of the nailbed and exudate. It is important to identify the organism involved using culture. Do not take the sample from an open, draining area. The best sample comes from a freshly-removed nail under anesthesia. Treatment of bacterial paronychia involves initial gentle cleaning and debridement of the nailbed areas under anesthesia. Start systemic antibiotics and continue, based on culture results, for 4 or more weeks.
- Nail loss (without paronychia) is a poorly-understood disease. In some cases, histologic examination of nailbed biopsy has revealed a particular inflammatory pattern (“symmetric lupoid onychodystrophy- SLO”). However, the causes of this inflammation are unknown; the condition is NOT lupus erythematosus, and no autoimmune etiology has been demonstrated. In this syndrome, there is malformation, breakage, and/or loss of nails with no inflammation around the nail fold area, no exudate, etc. A fungal culture of a nail for dermatophytes should be done, though fungal nail infections are very rare in pets. In SLO, usually a series of medications are tried empirically. Medications to try include fatty acid supplements, pentoxifylline, doxycycline, or oral corticosteroids. The best success typically is with doxycycline (5 mg/kg/d orally), though fatty acid supplements are probably helpful to give along with doxycycline. Response will usually take 4-8 weeks. Once the condition is in remission, the doxycycline can be tapered to every other day for longterm maintenance.
- Sometimes, SLO is present ALONG WITH secondary bacterial paronychia. If bacterial paronychia is suspected and treated, and the response is poor, consider adding doxycycline into the treatment protocol.

### **Diseases with Prominent Pedal Pruritus**

- *Malassezia* dermatitis in the interdigital areas is common. This condition often exists as a part of atopic dermatitis. Pedal pruritus is usually all 4 feet, and can be quite severe. Typically, the pruritus is poorly responsive to corticosteroids. There is inflammation and self-trauma to the feet, and often, moist or greasy material in the interdigital areas. Diagnosis is via cytology. If you see only one yeast, and compatible clinical signs are present, treat the animal! The number of yeast found on cytology is not well correlated

with response to antifungal treatment. Treatment in dogs consists of any azole drug, 5-10 mg/kg orally, once daily, for an initial trial period of 5-10 days. Obtain followup information after this trial period: how much of the patient's discomfort is related to yeast overgrowth, and how much is related to other underlying causes? It may also be beneficial to have the owner wipe, wash, or spray the feet with a chlorhexidine/miconazole product. This has the added benefit of reducing any bacterial contamination as well.

- Atopic dermatitis is perhaps the most common cause of pedal pruritus. Clinical signs include pruritus, most commonly of the feet, face, ventrum, ears, or any combination. Some dogs have pedal pruritus only! The pedal pruritus is most often a combination of the allergy itself, secondary interdigital yeast dermatitis, and secondary interdigital pyoderma. If pedal pruritus is the major problem in an atopic dog, after clearing up staphylococcus and yeast infections, it is often very beneficial to apply a topical corticosteroid spray or lotion to the toes for longer term relief.