

# Pododermatitis

## (Inflammation of Skin of the Paws)

### Basics

#### OVERVIEW

- “Podo-” refers to the feet or paws; “dermatitis” is the medical term for inflammation of the skin
- “Pododermatitis” is an inflammatory, multifaceted group of diseases that involves the feet of dogs and cats

#### SIGNALMENT/DESCRIPTION OF PET

##### Species

- Dogs—common
- Cats—uncommon

##### Breed Predispositions

- Short-coated breeds of dogs—most commonly affected; English bulldogs, Great Danes, basset hounds, mastiffs, bull terriers, boxers, dachshunds, Dalmatians, German shorthaired pointers, and Weimaraners
- Long-coated breeds of dogs—German shepherd dogs, Labrador retrievers, golden retrievers, Irish setters, and Pekingese
- Cats—none

##### Predominant Sex

- Dogs—male

#### SIGNS/OBSERVED CHANGES IN THE PET

- Vary considerably depending on the underlying cause

##### Pododermatitis in Dogs

- Reddened paws (known as “erythema”)
- Fluid buildup (known as “edema”) of the tissues of the paws
- Small, solid masses (known as “nodules”)
- Thickened, raised, flat-topped areas that are slightly higher than the normal skin (known as “plaques”)
- Variable degrees of loss of the top surface of the skin (known as “erosions” and “ulcers,” based on depth of tissue loss)
- Draining tracts
- Blood blisters or cysts
- Discharge from the paws may be blood-tinged or may contain pus
- Dried discharge on the surface of the skin lesion (known as a “crust”)
- Inflammation of soft tissue around the nail (known as “paronychia”)
- Paws may be swollen
- May have hair loss (known as “alopecia”) and may be moist from constant licking
- Paws may be saliva stained (have a rust-colored or brownish staining)
- Paws may be painful and/or itchy (known as “pruritus”)



- Regional lymph nodes may be enlarged
- Thickening of the skin (known as “hyperkeratosis”) of the footpads
- Loss of pigment in the footpads
- Lameness

#### **Pododermatitis in Cats**

- Painful inflammation of soft tissue around the nail (paronychia), involving one or more claws
- Small, solid masses (nodules)
- Loss of the top surface of the skin (ulcers)
- Footpads—commonly involved
- Dried discharge on the surface of the skin lesion (crusts)
- Thickened, raised, flat-topped areas that are slightly higher than the normal skin (plaques)
- Thickening of the skin (hyperkeratosis) of the footpads
- Draining tracts
- Paws may be swollen
- Lameness
- Paws may be painful and/or itchy (pruritus)
- Footpads may have loss of pigment (known as “hypomelanosis”) or may have increased pigment (known as “hypermelanosis”)

## **CAUSES**

#### **Infectious Pododermatitis in Dogs**

- Bacterial infections—*Staphylococcus pseudintermedius*, *Pseudomonas*, *Proteus*, *Mycobacterium*, *Nocardia*, or *Actinomyces*
- Fungal infections—dermatophytes (a fungus living on the skin, hair, or nails); sporotrichosis; or deep fungal infections (blastomycosis, cryptococcosis)
- Parasitic infections—demodectic mange in dogs (*Demodex canis*), rhabditic dermatitis (*Pelodera strongyloides*), and hookworms
- Protozoal infections—leishmaniasis

#### **Infectious Pododermatitis in Cats**

- Bacterial infections—*Staphylococcus pseud intermedius*, *Pseudomonas*, *Proteus*, *Pasteurella*, *Mycobacterium*, *Nocardia*, or *Actinomyces*
- Fungal infections—dermatophytes (a fungus living on the skin, hair, or nails); sporotrichosis; or deep fungal infections (cryptococcosis)
- Parasitic infections—*Neotrombicula autumnalis*, *Notoedres cati*, or *Demodex*
- Protozoal infections—*Anatrichosoma cutaneum*

#### **Allergic Pododermatitis**

- Dogs—atopy (disease in which the pet is sensitized [or “allergic”] to substances found in the environment [such as pollen] that normally would not cause any health problems); food hypersensitivity; allergic contact dermatitis (inflammation of the skin secondary to contact with some substance to which the pet has an allergic reaction)
- Cats—atopy; rare for flea-allergic dermatitis, food hypersensitivity, or contact dermatitis to involve the paws

#### **Immune-Mediated Pododermatitis**

- Dogs—pemphigus foliaceus; systemic lupus erythematosus; erythema multiforme; toxic epidermal necrolysis; inflammation of blood vessels (known as “vasculitis”); cold-agglutinin disease; pemphigus vulgaris; bullous pemphigoid; epidermolysis bullosa acquisita; symmetrical lupoid onychodystrophy
- Cats—pemphigus foliaceus; systemic lupus erythematosus; erythema multiforme; toxic epidermal necrolysis; inflammation of blood vessels (vasculitis); cold-agglutinin disease; plasma-cell pododermatitis

#### **Hormonal Pododermatitis**

- Dogs—decreased levels of thyroid hormone (known as “hypothyroidism”); increased levels of steroids produced by the adrenal glands (known as “hyperadrenocorticism” or “Cushing's syndrome”); hepatocutaneous syndrome (rare skin condition that develops in pets with liver disease or other metabolic diseases)
- Cats—increased levels of thyroid hormone (known as “hyperthyroidism”); increased levels of steroids produced by the adrenal glands (hyperadrenocorticism or Cushing's syndrome); diabetes mellitus (“sugar diabetes”);

hormonal pododermatitis is rare in cats

### **Cancer**

- Dogs—squamous cell carcinoma; epitheliotropic lymphoma; melanoma; mast cell tumor; keratoacanthoma; inverted papilloma; eccrine adenocarcinoma
- Cats—papilloma; spinocellular epithelioma; trichoepithelioma; fibrosarcoma; malignant fibrous histiocytoma; metastatic primary adenocarcinoma of the lung; other cancers that have spread (known as “metastatic carcinomas”)
- Higher incidence in cats than in dogs

### **Environmental Causes**

- Dogs—irritant contact dermatitis (inflammation or irritation of the skin secondary to contact with some substance to which the dog comes in contact); trauma; concrete and gravel dog runs; excessive exercise; clipper burn; foreign bodies (such as grass lawns, bristle-like hairs of short-coated dogs); thallium toxicity (a type of heavy metal poisoning)
- Cats—irritant contact dermatitis (inflammation or irritation of the skin secondary to contact with some substance to which the cat comes in contact); foreign bodies; thallium toxicity (a type of heavy metal poisoning)

### **Miscellaneous**

- Dogs—sterile interdigital granuloma (a mass or nodular lesion located between the toes); interdigital follicular cyst (cyst between the toes)

## **RISK FACTORS**

- Lifestyle and general husbandry conditions—influence development of inflammation of the skin of the paws (pododermatitis)
- Excess exercise, abrasive or moist housing, poor grooming, and/or lack of preventive medical practice may increase likelihood of developing pododermatitis or worsen the condition
- Body size, foot conformation, and breed influence the development of interdigital follicular cysts (cysts between the toes)

## **Treatment**

### **HEALTH CARE**

- Outpatient, unless surgery is indicated
- Foot soaking, hot packing, and/or bandaging may be necessary, depending on cause

### **ACTIVITY**

- Depends on severity of lesions and on underlying cause

### **DIET**

- Restricted-ingredient food trial, if indicated
- Hypoallergenic diet—if food hypersensitivity or allergy is suspected

### **SURGERY**

- Skin biopsy
- Melanomas and squamous cell carcinomas—very poor prognosis; early diagnosis necessitates surgical removal of the digit, digits, or paw
- Infectious pododermatitis—may benefit from surgical removal of diseased tissue before medical therapy
- Recurrent draining tracts caused by interdigital follicular cysts (cysts between the toes) may be cleared with laser surgery

## **Medications**

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Depend on underlying cause and presence of secondary infections
- Medications may include long-term antibiotics, antifungals, steroids, chemotherapeutic agents, hormone-

replacement therapy, zinc supplementation, or intravenous amino acids

## **Follow-Up Care**

### **PATIENT MONITORING**

- Depends on underlying cause and treatment protocol selected

### **PREVENTIONS AND AVOIDANCE**

- Environmental cause—good husbandry and preventive medical practices should avoid recurrence
- Allergic cause—avoid the allergen (environmental or food), if possible; “allergens” are substances to which the pet has developed an allergy

### **POSSIBLE COMPLICATIONS**

- Depend on underlying cause and treatment protocol selected

### **EXPECTED COURSE AND PROGNOSIS**

- Success of therapy depends on finding the underlying cause; often the cause is unknown; even when the cause is known, management can be frustrating due to relapses or expense of treatment
- Often the disease only can be managed and not cured
- Surgical intervention is sometimes necessary

## **Key Points**

- Treatment depends on underlying cause and severity of condition
- Good husbandry and preventive medical practices are necessary
- Pododermatitis will be managed, but not cured, in many cases