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Pododermatitis in Dogs

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The pedal region is a frequent localisation for numerous pathologies in the dog. This is due to two main factors:

- Is the area more exposed to different types of trauma.
- High frequency of secondary bacterial infections, independently of underlying aetiology.

Pododermatitis can appear as another manifestation of a generalised disease or as an unique condition. Depending on the cause, more than one extremity may be affected.

AETIOLOGY

1. Environmental1,2: a. Trauma (stones, knocks, wire fences, ..). b. Foreign bodies (grass seeds, thorns, splinters, ..).
2. Allergies1,2,3: Atopy, alimentary hypersensitivity, contact dermatitis.
3. Parasites4: Demodicosis, leishmaniosis.
4. Infection5: Pyoderma, dermatophytosis, dermatitis caused by Malassezia.
5. Autoimmune or immune-mediated disease: Pemphigus, bullous pemphigoid, lupus, cutaneous drug eruption.
6. Psychogenic: acral lick dermatitis.
7. Endocrinopathy: Hypothyroidism, hyperadrenocorticism.
8. Miscellaneous: Zinc responsive dermatitis, digital hyperkeratosis, superficial necrolytic dermatitis, sterile pyogranulomatous, nodular dermatofibrosis, calcinosis circumscripta.6,7

CLINICAL SIGNS

The lesions produced in the podal region are very varied in nature and can affect the digits, nails, interdigital space or pads. Depending on the case we will observe: tumefaction, erythema, papules, saliva stain due to licking, hyperpigmentation, alopecia, nodules with serohaemorrhagic or purulent content, desquamation, crusts or fistulae.

The lesions are generally painful/pruritic causing lameness, particularly if the digital pads are affected. Lesions due to self-mutilation will predispose to secondary bacterial infections. 5.

DIAGNOSIS

It is based on:
Clinical history

- Age of presentation of pododermatitis: very young animals will suffer more frequently from demodicosis or dermatophytoisis. Adult dogs will be more prone to demodicosis and allergies. Middle-aged animals tend to suffer from endocrinopathies.

- Type of diet: home-cooked and/or commercial.

- Environmental habitat: Type of housing (hard and rough flooring, poor hygiene), aptitude (guard dog, hunting dog, pet), surroundings of the house.
- Are there other dogs in the household? Are the also affected by the same lesions? If yes, contagion is likely.
- Do the owners have any type of skin lesions?
- Onset of the problem in the legs: tumefaction, prutitus, alopecia, etc... other concurrent signs: otitis conjunctivitis, facial dermatitis,...
- Evolution: continous or intermittent. If intermittent, any seasonal pattern (worse in spring?), or to treatment.
- Has the dog received any previous treatment?. If yes, with which response? (e.g. to cortocosteroids, antibiotics).
- Is there pruritus?. If yes, assess distribution and intensity.
- Are there other lesions in the body?. On the face (allergies), ventral region (contact dermatitis), mucocutaneous junctions (auto-immune disease, zinc responsive dermatitis,..).
- Any other clinical signs?: some diseases will have systemic and dermatologcial signs, for example, endocrinopathies, auto-immune diseases or demodicosis.

Physical examination

- General: signs associated to atopy (conjuntivitis, rhinitis, bronchitis) or an adverse reaction to food (vomition or diarrhoea).

- Dermatological: . Examination of the hair (dry, greasy, alopecia, broken hairs, change of coloration, dull hair...). Examination of the skin (texture, elasticity, thickness, colour..). Identification, type and localisation of the lesions.

- Examination of the pedal region: digits, claws, interdigital spaces and pads. Check if the lesions are present in more than one extremity and the distribution (dorsal and/or ventral). Identify the type of lesion (erythema, tumefaction, papules, saliva stain of the hair, hyperpigmentation, alopecia, nodules, haemorrhagic bullae, desquamation, ulcers, crusts or fistulae). Check for any pain and/or pruritus.

Depending on the causal agent we can find different type of podal lesions1-7:

- Due to trauma: tumefactgon, erythema, ulcerations, secondary pyoderma.
- Due to foreign bodies: nodules, ulceration, fistular tracts.
- Allergies: erythema, papules, alopecia, red hair discoloration, pyoderma.
- Due to parasites: alopecia, erythema, pyoderma, erosions and ulcerations, desquamation, nailbed hypertrophy, hyperpigmentation.
- In infections: Nodules (foruncullosis), fistular tracts, exudation, alopecia, erythema, desquamation, nail anomalies.
- In auto-immune diseases: nailbed inflammation, crusts, ulcers, vessicles, blisters, pustules.
- In psycogenic disease: erosion, ulceration, fibrosis.
- In endocrinopathies: bacterial infection, dermatophytonsis, demodicosis.
- Miscellaneous: Desquamation, crusts, fissures in pads, erythema, exudation, alopecia, hyperkeratosis, ulceration, nodules.
- Idiopathic: Tumefaction, erythema, alopecia, fistulae.

**Ancillary tests**

**In:**

- Allergies: elimination diet, intradermal skin test/serology, closed patch testing and exclusion and provocative exposure.
- Parasitosis: skin scrapes, hystopathology, cytology of lymphatic glands or bone marrow; IFI, PCR.
- Infections: bacteriologic and fungal culture, cytology, histopathology.
- Autoimmune/immune-mediated disease: histopathology.
- Psicogenic disease: histopathology.
- Endocrinopathies: Haematology and serum biochemistry, urinalysis, echography, endocrine tests.
- Miscellaneous: histopathology, bacterial culture, echography.
- Idiopathic: Histopathology.

**TREATMENT**

Depends on the underlying cause. In each case we will have to:

- Avoid environmental factors.
- Avoid drugs, irritants/allergens and certain proteins in the diet. Administer symptomatic antinflammatory therapy. Immunotherapy.
- Administration of topical and/or systemic antiparasitic drugs.
- Administration of topical and/or systemic antibiotics.
- Administration of immune-modulators (glucocorticoids, ciclosporin, azathioprine, tacrolimus).
- Hormones, zinc, etc.

Some diseases will have variable prognosis, from guarded to adverse, for example: hepatocutaneous syndrome, nodular dermatofibrosis, familial hyperkeratosis.

**References**


