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Global Veterinary Community

Approach to Dermatology: History, Examination and Lesions

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Dermatology Consultation

- Duration: 60 minutes
 - Detailed history (20 min)
 - Examination (10 min)
 - Diagnostic Tests (15 min)
 - Final discussion with owner (15 min)

Dermatology Consultation

- History and Examination Sheet
 - Signalment
 - Past and recent history
 - VAS
 - Examination findings → list of problems
 - Differential diagnoses
 - Results of diagnostic tests
 - Definitive diagnosis (assessment)
 - Therapy prescribed
 - Date of next re-exam

Worksheet: History, Diagnostic, and Treatment Plan

Date:	Patient ID:
Species: (breed)	Age: months
Sex: M: F: Ne	
Presenting complaint:	
History:	
Duration and age of onset (Seasonally recurrent?)	
Prevalence: Frequent, Intermittent, Rare, Most severely affected areas?	
Previous treatments that have helped:	
Current meds:	
Diet:	
Other concerns (i.e. all allergies, behavior, polyarthropathies, comorbidities, etc):	
Diagnoses (include area affected):	
Differential:	
Plan (including Wood's lamp/ungal culture):	
Collaboration:	
Other:	
Assessment:	
Date:	
Vet:	

Extremely severe itching / almost continuous
Itching doesn't stop whatever is happening, even in the consulting room (needs to be physically restrained from itching)

Severe itching / prolonged episodes
Itching might occur at night (if observed) and also when eating, playing, exercising or being distracted

Moderate itching / regular episodes
Itching might occur at night (if observed), but not when eating, playing, exercising or being distracted

Mild itching / a bit more frequent
Wouldn't itch when sleeping, eating, playing, exercising or being distracted

Very mild itching / only occasional episodes
The dog is slightly more itchy than it was before the skin problem started

Normal dog – I don't think itching is a problem

10: Extremely severe itching / almost continuous
Itching doesn't stop whatever is happening, even in the consulting room (needs to be physically restrained from itching)

9: Severe itching / prolonged episodes
Itching might occur at night (if observed) and also when eating, playing, exercising or being distracted

8: Moderate itching / regular episodes
Itching might occur at night (if observed), but not when eating, playing, exercising or being distracted

7: Mild itching / a bit more frequent
Wouldn't itch when sleeping, eating, playing, exercising or being distracted

6: Very mild itching / only occasional episodes
The dog is slightly more itchy than it was before the skin problem started

5: Normal dog – I don't think itching is a problem

Signalment

- Name
- Birth date/age
- Species
- Breed
- Sex and reproductive state
- Coat color and type



Signalment

- Age
 - Puppies: congenital and infectious diseases
 - 3-12 months: food allergy
 - 12-36 months: atopic dermatitis and flea allergy dermatitis
 - Older dogs: neoplasia and hormonal diseases



Breed Predisposition for Certain Diseases

- Discoid lupus erythematosus
- Idiopathic facial dermatitis



Signalment

- Color
 - Color dilution alopecia
 - White cats - squamous cell carcinoma



History

- What is the primary problem?
 - According to the owner?
 - According to the clinician?
- Can other problems be related to the primary problem?



General History

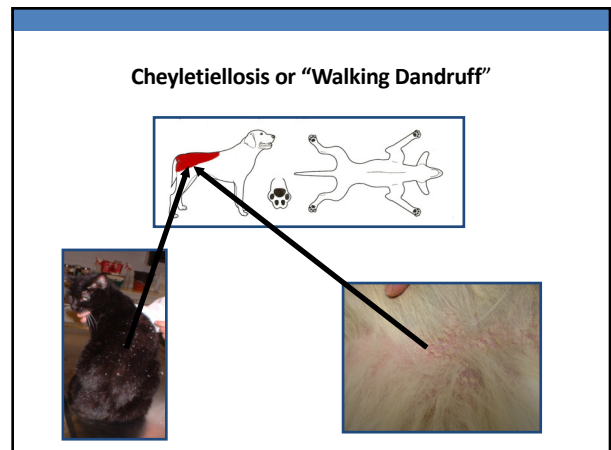
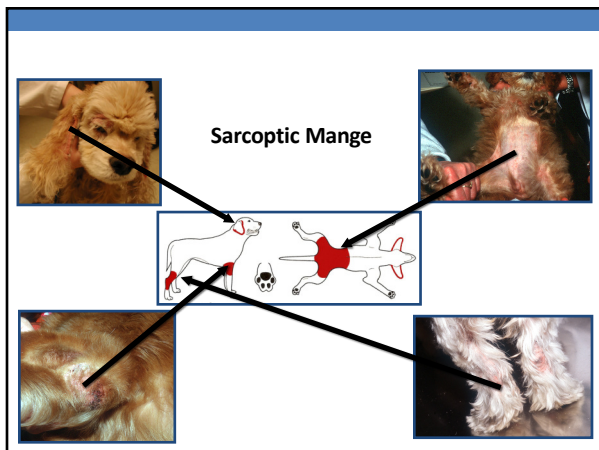
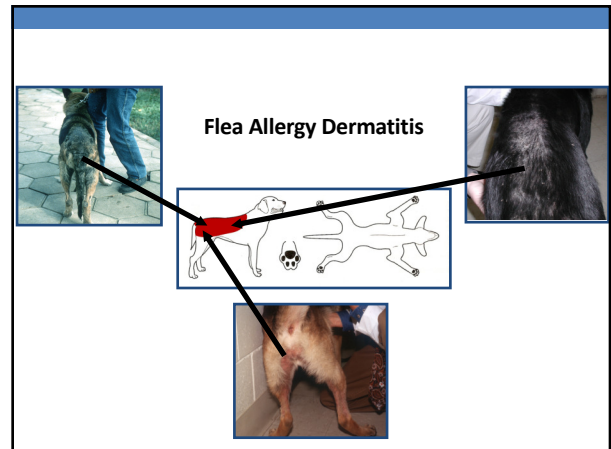
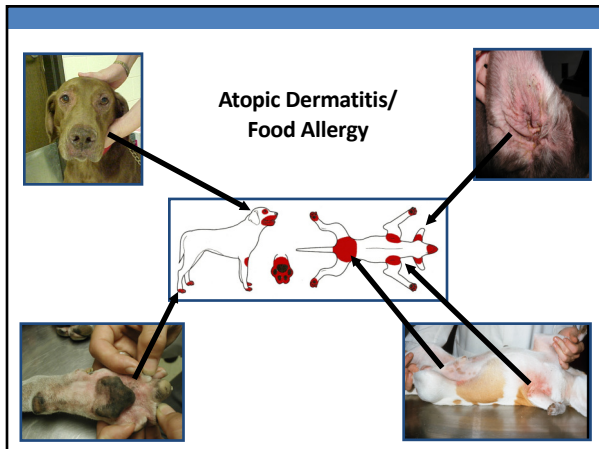
- Origin of the animal
- Familial history
- Past and concurrent diseases
- Diet
- Lifestyle (home, garden, kennel, etc.) and travel
- Presence and health status of other pets/people
- Systemic signs
- Reproductive history

Dermatological History

- Age of onset
- Duration of signs
- Type, localization and evolution of the lesion(s)
- Presence, location and severity of pruritus (VAS)
- Seasonality
- Response to previous therapy

Localization of Clinical Signs

- Many disease have distinct areas of involvement
- Head
- Trunk
- Limbs
- Feet
- Gastrointestinal signs
- Food allergy



History of Pruritus

- Duration of pruritus
 - Often long for allergies (months to years)
 - Short time for infectious, parasitic and some neoplastic diseases (days to weeks)
- Seasonality
 - Fleas, atopic dermatitis and trombicula



Response to Therapy

- Relationship of therapy and onset of disease
 - Did the condition start after initiation of therapy?
 - Did it resolve after discontinuing therapy?
- Response to therapy
 - Did the condition improve with therapy?
 - Did the condition worsen with therapy?

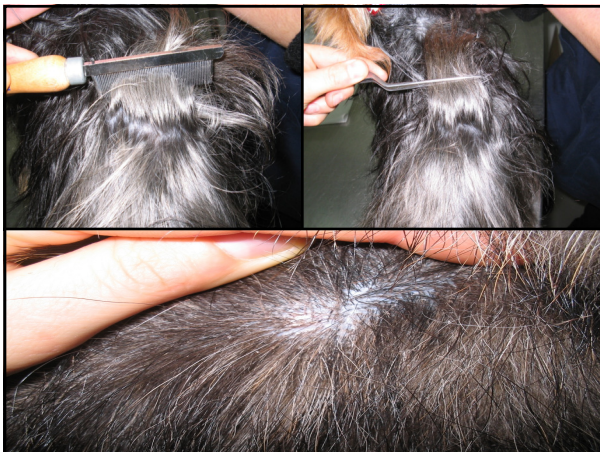
Response to Therapy

- Antibiotics → pyoderma
- Antifungals → Malassezia
- Oclacitinib → atopic dermatitis or food allergy
- Steroids → atopic dermatitis
- No or poor response to steroids → scabies or food allergy



Clinical Examination

- Inspection
 - Primary and secondary lesions
 - Depth and distribution of lesions
 - Signs and localization of pruritus
 - Otic examination
 - +/- Anal sac evaluation



Dermatological Examination

- Anterior areas including the ear canals and oral cavity
- Lateral areas and limbs including each interdigital space and nail bed
- Posterior part of the animal including areas beneath the tail
- In lateral recumbency, all ventral areas including perigenital skin and all mucosal surfaces

Skin Lesions

- Primary lesions: caused directly by the disease
- Secondary lesions: develop from primary lesions
 - Evolution of primary lesions
 - Complicating infections
 - Consequence of self trauma
 - Residual medication or effects of medication

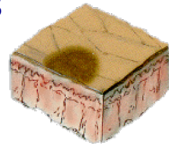
Primary Lesions

- Macule/Patch
- Papule
- Pustule
- Vesicle
- Bulla
- Wheal
- Nodule
- Plaque



Primary Lesions

- Macule/Patch
 - Flat patch of a different color
 - Pathogenesis
 - Hyperpigmentation (lentigo)
 - Depigmentation (leukoderma, vitiligo)
 - Erythema (vasodilation) → erythroderma
 - Purpura (hemorrhage)



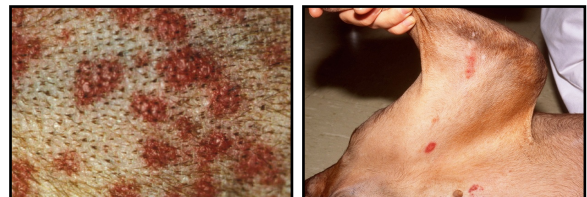
Hyperpigmented Macules



Hypopigmented Macules



Erythematous Macules

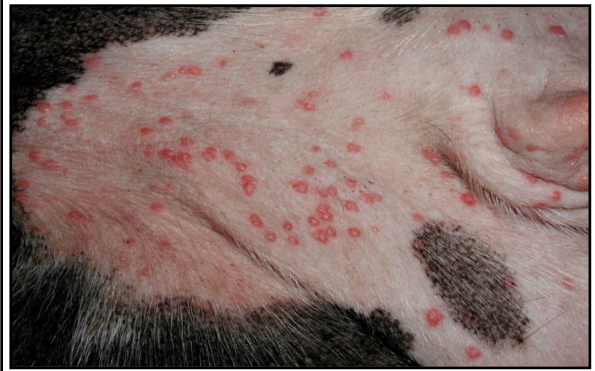


Primary Lesions



- Papule
 - Small elevated often erythematous lesion < 5 mm in diameter
 - Pathogenesis
 - Infiltration of inflammatory, neoplastic cells or metabolic deposits (calcium, lipids, amyloid, etc.) in the dermis
 - Papule → Pustule

Papules



Primary Lesions - Papule

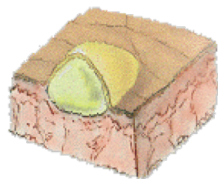
- Insect bites (mosquitos, fleas)
- Sarcoptic mange
- Allergic skin disease
- Cutaneous calcinosis
- Xanthomatosis (lipid deposition)

Papules



Primary Lesions

- Pustule
 - Collection of cells within or just beneath the epidermis

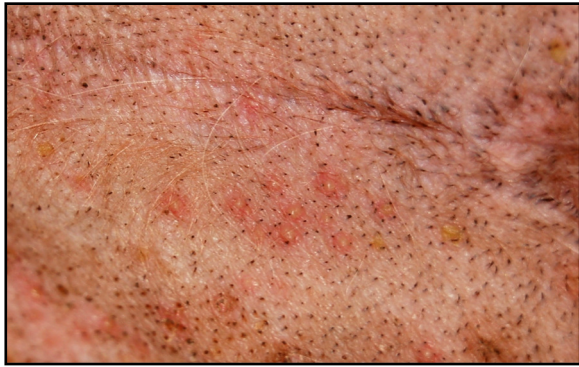


Pustule

- **Localization**
 - Intracorneal
 - Subcorneal
 - Intraepidermal
 - Panepidermal
 - Suprabasal
- **Content**
 - Neutrophils
 - Eosinophils
 - Lymphocytes
 - Histiocytes



Pustules



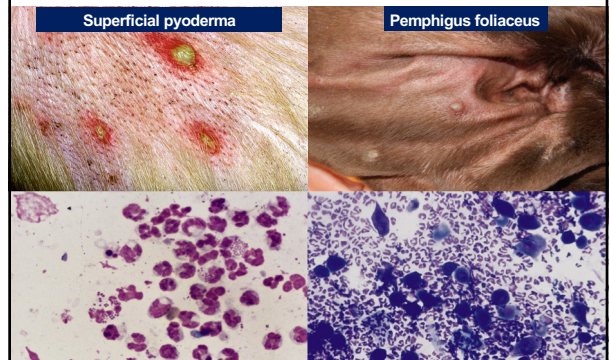
Pustules



Primary Lesions

- Pustule
 - Superficial pyoderma
 - Pemphigus foliaceus
 - Sterile eosinophilic pustulosis
 - Pustular leishmaniasis (rare)

Pustules



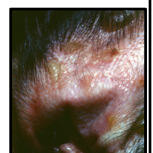
Primary Lesions

- Vesicle
 - Small lesion (< 5mm) with transparent or hemorrhagic fluid content within or beneath the epidermis
- Bulla
 - Similar to a vesicle but with diameter > 5mm

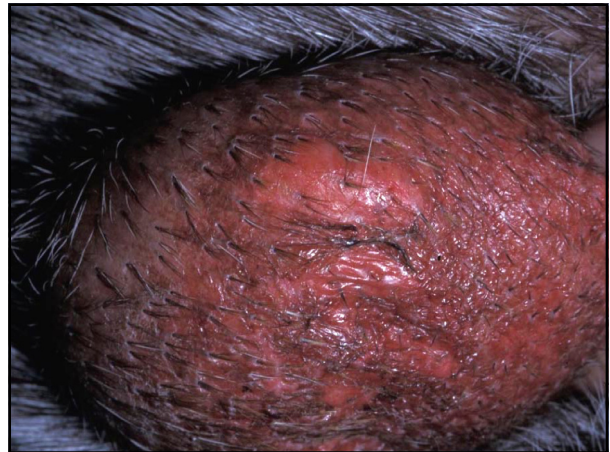


Primary Lesions

- Vesicle
 - Pathogenesis
 - Intra or intercellular edema (spongiosis, inflammation)
 - Intraepidermal detachment (pemphigus vulgaris)
 - Dermo-epidermal detachment (autoimmune vesicular bullous and lupoid diseases)



Vesicles and Bullae



Primary Lesions

- Vesicles and bullae with clear content
 - Burn
 - Autoimmune diseases



- Vesicles and bullae with hemorrhagic content
 - Vasculitis
 - Coagulation disorders
 - Furunculosis
 - Pyodermatitis

Hemorrhagic Bullae - Furunculosis

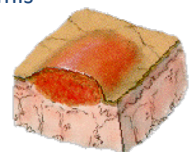


Hemorrhagic Bullae - Demodicosis



Primary Lesions

- Wheal
 - Soft elevated lesions that rapidly appear and disappear
 - Pathogenesis
 - Edema in the superficial dermis
 - Often associated with mast cell degranulation



Wheals



Wheals



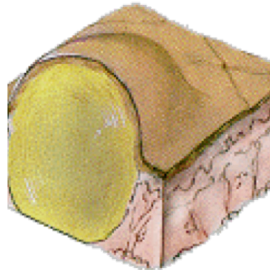
Primary Lesions

• Nodule

- Circumscribed solid mass > 1 cm in diameter; may involve the skin and/or subcutis

-Pathogenesis

- Infiltration of cells, collagen, fibrin or deposits of calcium salts

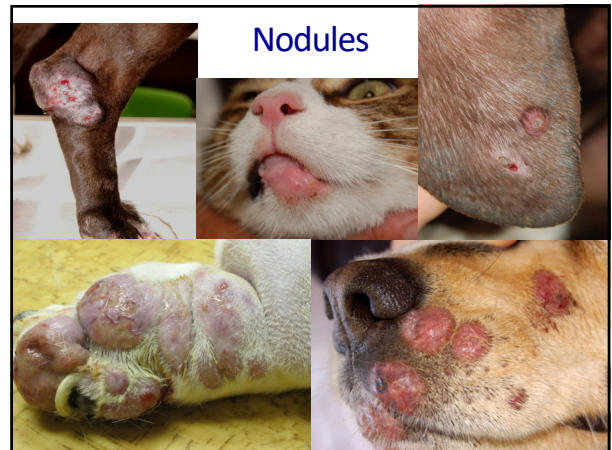


Primary Lesions

• Nodule

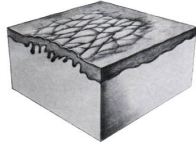
- Bacterial
- Fungal
- Parasitic
- Accumulation of amorphous material (calcium, eosinophilic mush, amyloid)
- Foreign body reaction
- Chronic reaction to external trauma
- Neoplasia

Nodules



Primary Lesions

- Plaque
 - Elevated, flat often firm lesion
 - Pathogenesis
 - A well demarcated infiltrate of inflammatory or neoplastic cells in the dermis



Eosinophilic Plaque



Primary Lesions

- Plaque
 - Eosinophilic plaque
 - Epitheliotropic lymphoma
 - Histiocytosis
 - Calcinosis cutis



Plaques



Primary and Secondary Lesions

- Alopecia
 - Complete absence of hair
- Hypotrichosis
 - Thinning hair
- Atrophy

Alopecia

- Pathogenesis
 - Primary
 - Damage to the hair root or hair follicle (dysplasia)
 - Hormonal diseases
 - Secondary
 - Self induced
 - Iatrogenic (injections)



Skin Atrophy

- Thinning or decreased thickness of the skin
- Pathogenesis
 - Primary: congenital collagen diseases
 - Secondary: endocrine diseases or iatrogenic

Skin Atrophy



Skin Atrophy

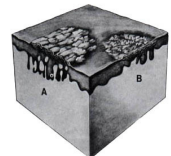


Secondary Lesions

- | | |
|---------------|---------------------|
| • Scale | • Fissure |
| • Collarette | • Hyperpigmentation |
| • Crust | • Depigmentation |
| • Excoriation | • Lichenification |
| • Erosion | • Scar |
| • Ulcer | • Comedone |
| • Fistula | • Callus |

Secondary Lesions

- Scale
 - Fragments of stratum corneum detaching from the skin surface
 - Small and dry: pityriasisiform
 - Large and attached to the skin: psoriasiform
- Pathogenesis
 - Increased epidermal cell turnover
 - Cornification/retention defects



Scale - Pityriasiform



Scale - Psoriasiform



Secondary Lesions

- Scale
 - Excessive production of stratum corneum
 - Decreased elimination of stratum corneum
 - Mechanical or chemical trauma
 - Skin infection
 - Metabolic/endocrine diseases
 - Congenital diseases
 - Immune-mediated diseases



Scale



Secondary Lesions

- Collarette
 - Circular lesion made of scale or crust
- Pathogenesis
 - The evolution of a pustule, vesicle or bulla
 - Scale is the remnant of the broken vesicle/pustular roof
 - If still active, the margins may be erythematous and/or exudative

Collarette

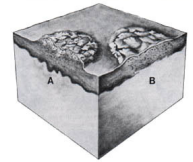


Collarettes



Secondary lesions

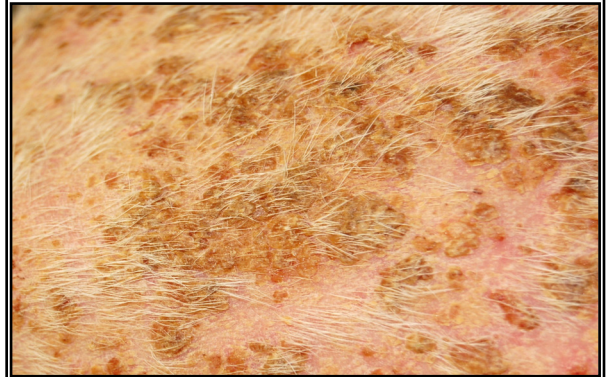
- Crust
 - Dried exudate, blood or serum on the skin surface
 - Color may provide hints about the origin
 - Brown/red: blood
 - Yellow: pus
 - Light yellow: serum



Brown/Red Crust

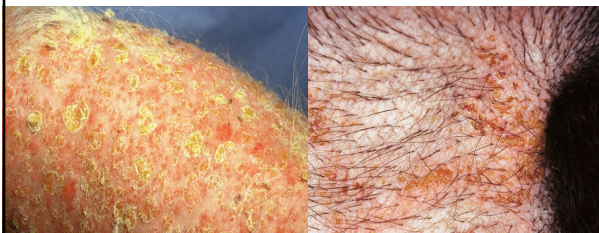


Yellow Crust



Secondary Lesions - Crust

- Shape of the crust may provide an indication of the origin
 - Circular crusts originate from pustules
 - Linear crusts often result from scratching



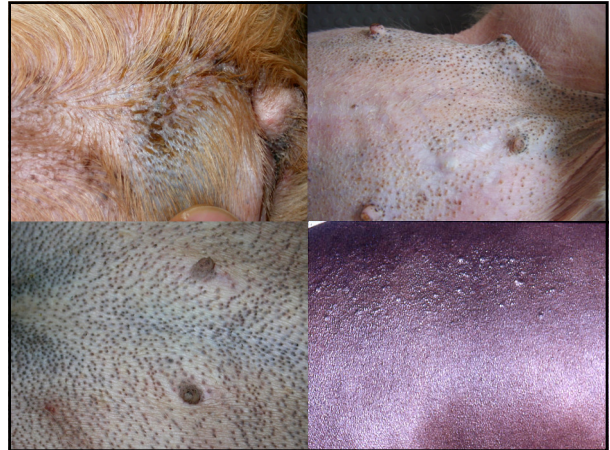
Secondary Lesions

- Comedone
 - Accumulation of keratin rich material in the hair follicle infundibulum



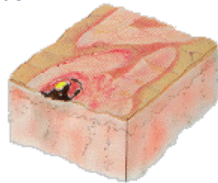
Secondary Lesions

- Comedone
 - Keratinization defects (common in the cocker spaniel, acne)
 - Folliculitis (demodicosis)
 - Hormonal diseases (hyperadrenocorticism)
 - Congenital
 - Friction



Secondary Lesions

- Excoriation
 - Superficial damage to the skin
 - Consequence of scratching or biting
 - Indicates presence of pruritus



Excoriations

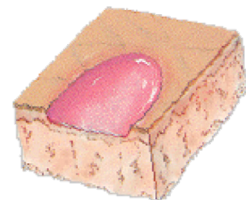


Excoriations – Neck Lesion



Secondary Lesions

- Erosion
 - Defect limited to the epidermis with an intact dermis
 - Pathogenesis
 - Result from pustules or vesicles
 - Dermo-epidermal detachment in autoimmune diseases
 - Epidermolysis



Erosions



Erosions



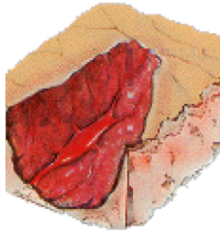
Secondary Lesions

• Ulcer

–Defect that involves the dermis +/- the subcutis and the underlying tissues

–Pathogenesis

- Infections: bacterial, fungal
- Fistulization of nodules and plaques
- Necrosis, wounds
- Vasculitis



Ulcer



Ulcers



Secondary Lesions

• Fistula

–Opening in the tissue that drains exudate from the dermis and/or subcutis

• Pathogenesis

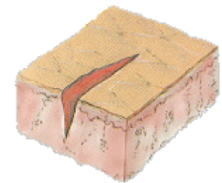
- Abscess
- Furunculosis (interdigital or perianal)
- Sterile panniculitis
- Foreign body granuloma

Fistula



Secondary Lesions

- Fissure
 - Linear ulceration of hard skin tissues, such as the nasal planum or the foot pad



Fissure



Secondary Lesions

- Hyperpigmentation
 - Darker color of the skin and/or hair
 - Pathogenesis
 - Increase in melanin content and/or distribution in the keratinocyte



Secondary Lesions

- Hyperpigmented macules in orange cats (lentigo)
- Viral hyperpigmented plaques in dogs
- UV exposure
- Post inflammatory



Hyperpigmentation



Secondary Lesions

- Depigmentation
 - Lack of pigmentation of hair and/or skin
 - Secondary to inflammation in the basal layer of epidermis and immune targeting of melanocytes
 - Vitiligo
 - Uveodermatological syndrome
 - Discoid lupus erythematosus
- Lightening of hair (leukotrichia) also be related to
 - Aging
 - Trauma/scar

Depigmentation



Depigmentation



Depigmentation



Depigmentation - Leukotrichia

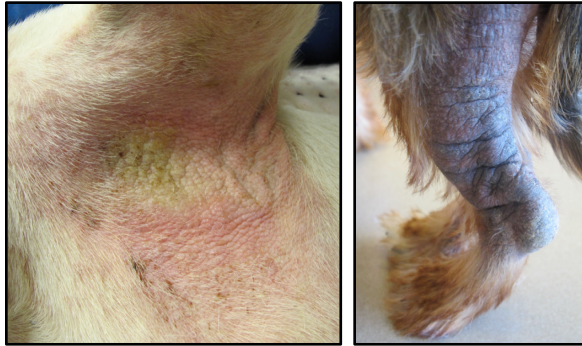


Secondary Lesions

- Lichenification
 - Thickening of the skin; appears with small folds or more pronounced normal structure
- Pathogenesis
 - Chronic inflammation
 - Often associated with hyperpigmentation



Lichenification



Lichenification



Secondary Lesions

- Scar (cicatrix)
 - Permanent area of alopecia due to follicular destruction
- Causes
 - Wounds/trauma/burns
 - Deep infections/furunculosis
 - Vasculitis

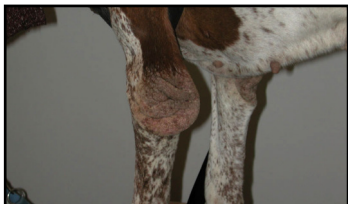


Scars



Secondary Lesions

- Callus
 - Well defined area of alopecia, skin thickening and hyperkeratosis as a consequence of continuous mechanical trauma



Acknowledgments

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