

EXFOLIATIVE DERMATOSES

(SKIN DISORDERS CHARACTERIZED BY THE PRESENCE OF SCALES)

BASICS

OVERVIEW

- Excessive or abnormal shedding of skin cells, resulting in the clinical presentation of accumulations of surface skin cells, such as seen in dandruff (known as “scales”)
- “Exfoliative” refers to the detachment and shedding of surface skin cells; “dermatosis” (plural, “dermatoses”) is the medical term for any skin abnormality or disorder
- “Primary” refers to a condition that occurs first in the skin; “secondary” refers to changes that occur following the primary disease—for example, the skin may be inflamed due to a nutritional deficiency (primary condition) and become infected by bacteria invading the inflamed skin (secondary condition) or the skin changes are secondary to the presence of some other problem or abnormality (such as the presence of parasites on the skin)

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs and cats

Breed Predispositions

- Primary exfoliative dermatoses—cocker spaniels, English springer spaniels, West Highland white terriers, basset hounds, Doberman pinschers, Irish setters, Labrador retrievers, Siberian huskies, Alaskan malamutes, dachshunds, chow chows, Yorkshire terriers, poodles, Great Danes, whippets, salukis, Italian greyhounds, standard poodles, Samoyeds, Akitas, vizslas, golden retrievers
- Secondary exfoliative dermatoses—any breed of dog or cat

Mean Age and Range

- Primary exfoliative dermatoses—apparent by 2 years of age
- Secondary exfoliative dermatoses—any age

SIGNS/OBSERVED CHANGES in the ANIMAL

- Excessive scaling
- Smelly or malodorous skin; “rancid fat” odor is common
- Itchiness (known as “pruritus”)
- Dry or greasy accumulations of surface skin cells, as seen in dandruff (scales); accumulations may be fine or coarse; may be located throughout the hair coat or in localized areas
- Hair follicles may become filled with oil and skin cells (known as “comedones”)
- Accumulation of debris that adheres to hair shaft (known as “follicular casts”)
- Hair loss (known as “alopecia”)
- Secondary skin infection characterized by the presence of pus (known as “secondary pyoderma”)

CAUSES AND RISK FACTORS

Primary Exfoliative Dermatoses

- Primary excessively dry or oily scaling of the skin (known as “seborrhea”) of unknown causes (so called “idiopathic seborrhea”) that is a primary disorder in the normal replacement and shedding of skin cells (known as a “keratinization disorder”)—breeds at highest risk: cocker spaniels, English springer spaniels, West Highland white terriers, basset hounds, Doberman pinschers, Irish setters, and Labrador retrievers; dry (known as “seborrhea sicca”) and greasy or oily (known as “seborrhea oleosa”) forms exist, but determination of type has little prognostic value
- Skin disorder that responds to treatment with vitamin A (known as “vitamin A-responsive dermatosis”)—nutritionally responsive; seen primarily in young cocker spaniels; clinical signs similar to severe idiopathic seborrhea; distinguished by response to dietary vitamin A supplementation
- Skin disorder that responds to treatment with zinc (known as “zinc-responsive dermatosis”)—nutritionally responsive; results in hair loss (alopecia); accumulations of surface skin cells, as seen in dandruff (scales); dried discharge on the surface of the skin lesion (known as a “crust”); and reddening of the skin (known as “erythema”) around the eyes, ears, feet, lips, and other external orifices; two syndromes are seen: 1) young adult dogs, especially Siberian huskies and Alaskan malamutes and 2) rapidly growing, large-breed puppies
- Abnormalities in the development of the skin and related structures (such as hair follicles)—abnormal development of the hair follicles or hair (known as “follicular dysplasia”); seen as hair loss (alopecia) in color mutant or dilution animals; represent abnormalities in deposition of melanin pigments (responsible for the color of the skin and hair) of the hair shaft and structural hair growth; breeds commonly affected: blue and fawn Doberman pinschers, Irish setters, dachshunds, chow chows, Yorkshire terriers, poodles, Great Danes, whippets, salukis, and Italian greyhounds; signs include failure to regrow blue or fawn hair with normal “point” hair growth, excessive accumulations of surface skin cells, as seen in dandruff (scales), hair

follicles filled with oil and skin cells (comedones), and skin infection characterized by the presence of pus (secondary pyoderma)

- Thickening of the skin (known as “hyperkeratosis”) of the nose and pads of the feet of unknown cause (so called “idiopathic nasodigital hyperkeratosis”)—excessive accumulation of surface skin cells (scales) and dried discharge on the surface of the skin lesion (crusts) on the tough, hairless skin of the nose (known as the “nasal planum”) and footpad margins; common in middle-aged spaniels; if severe, may result in cracking and secondary bacterial infection
- Inflammation of the sebaceous glands, the glands that produce oils in the hair coat (condition known as “sebaceous adenitis”)—inflammatory disease; may be of unknown cause (so called “idiopathic sebaceous adenitis”); three specific syndromes seen: 1) middle-aged standard poodles and Samoyeds; characteristic widespread (diffuse) hair loss (alopecia) and excessive accumulation of surface skin cells, as seen in dandruff (scales); accumulation of debris that adheres to hair shaft (follicular casts); most dogs generally appear healthy; 2) Akitas: frequently develop severe and deep bacterial skin infection characterized by the presence of pus (pyoderma); 3) vizslas: disease appears distinctly different and is characterized by the presence of nodular, inflammatory lesions (known as “granulomas”)
- Abnormal development of the top surface of the skin (known as the “epidermis;” condition known as “epidermal dysplasia”) and congenital (present at birth) disorders of the normal replacement and shedding of skin cells (keratinization disorder; condition known as “ichthyosis”)—rare and severe congenital disorder of keratinization; reported in West Highland white terriers and golden retrievers; generalized accumulations of surface skin cells, as seen in dandruff (scales) and dried discharge on the surfaces of the skin lesions (crusts) at an early age; secondary bacterial and yeast infections are common

Secondary Exfoliative Dermatoses

- Increased sensitivity or reaction in the skin to the presence of a foreign agent (known as “cutaneous hypersensitivity”)—atopy (disease in which the animal is sensitized [or “allergic”] to substances found in the environment [such as pollen] that normally would not cause any health problems); flea-bite allergy; food allergy; and inflammation of the skin secondary to contact with some substance to which the animal reacts or to which the skin becomes irritated (known as “contact dermatitis”); characterized by itchiness (pruritus) and resultant skin trauma and irritation
- Parasites of the skin—sarcoptic mange or scabies; demodectic mange (demodicosis), and “walking dandruff” (cheyletiellosis)
- Skin infection characterized by the presence of pus (pyoderma)
- Skin inflammation due to *Malassezia*, a yeast
- A fungal infection affecting the skin, hair, and/or nails (known as “dermatophytosis”)
- Hormonal disorders (known as “endocrinopathies”)—inadequate production of thyroid hormone (known as “hypothyroidism”) and excessive production of steroids by the adrenal glands (known as “hyperadrenocorticism” or “Cushing’s disease”) commonly produce excessive accumulation of surface skin cells, as seen in dandruff (scales); secondary skin infection characterized by the presence of pus (secondary pyoderma) common in both syndromes; other hormonal abnormalities (such as sex-hormone abnormalities, excessive production of thyroid hormone [known as “hyperthyroidism”], and diabetes mellitus [“sugar diabetes”]) also may be associated with excessive scaling
- Age—senior animals may have a dull, brittle, and scaly hair coat; changes may be caused by natural alterations associated with aging; no specific defect identified
- Nutritional disorders—skin disorders may occur with malnutrition and feeding generic dog food; result in accumulation of surface skin cells, as seen in dandruff (scales) from abnormalities in the normal replacement and shedding of skin cells (keratinization)
- Diseases in which the body’s immune system attacks its own skin (known as “autoimmune skin diseases”)—pemphigus complex; cutaneous and systemic lupus erythematosus
- Tumors, cancer, and precancerous disorders of the skin—may produce hair loss (alopecia) and accumulation of surface skin cells, as seen in dandruff (scales) when skin is damaged
- Miscellaneous—any disease process may result in excessive accumulation of surface skin cells, as seen in dandruff (scales)

TREATMENT

HEALTH CARE

- Diagnose and control all treatable primary and secondary diseases
- Frequent and appropriate treatment applied to the skin directly (known as “topical therapy”)—cornerstone of proper treatment
- Frequent baths, as directed by your pet’s veterinarian
- Recurrence of secondary infections may require repeated treatment and further diagnostic testing
- Maintaining control of these skin disorders is often a lifelong commitment

DIET

- Depends on underlying cause
- Dietary modification may be necessary for cases of suspected food allergy and for nutritionally related skin disorders

SURGERY

- Skin biopsy may be necessary to determine diagnosis
- Surgical removal of skin tumors/cancer

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.

Treatment Applied to the Skin Directly (Topical Therapy)

Shampoos

- Contact time of shampoo (that is, shampoo must be left on body for a certain amount of time)—5 to 15 minutes generally required, as directed by your pet's veterinarian
- Hypoallergenic ("soap-free") shampoo—useful only in mild cases of dry scale and to maintain skin condition after the primary disease has been controlled
- Sulfur/salicylic acid-containing shampoos—soften and loosen crusts and scales on the skin (known as "keratolytic shampoos") and slow the growth of bacteria (known as a "bacteriostatic property"); excellent first choice for the moderately scaly patient; not overly drying
- Benzoyl peroxide shampoo—strong action to soften and loosen crusts and scales on the skin (keratolytic shampoo), destroys bacteria or slows their growth and multiplication (known as an "antimicrobial property"), and flushes out the hair follicles; may cause irritation and severe dryness; frequently used for recurrent bacterial infection and/or extreme greasiness
- Ethyl lactate shampoo—less effective than benzoyl peroxide for flushing out the hair follicles and not as effective against bacteria, but not as irritating or drying; most useful for moderate skin infection characterized by the presence of pus (pyoderma) and dry scale
- Tar shampoos—soften and loosen crusts and scales on the skin (keratolytic shampoos) and decreases itchiness (known as an "antipruritic property"); degreasing, but less so than benzoyl peroxide; use for moderate scale associated with itchiness (pruritus)

Moisturizers

- Excellent for restoring skin hydration (frequent shampooing may result in excessive dryness and discomfort) and increasing effectiveness of subsequent shampoos
- Humectants (moisturizers that attract water into the surface of the skin)—encourage hydration of the skin; at high concentrations may soften and loosen crusts and scales on the skin
- Microencapsulation (moisturizers are placed in tiny capsules that allow prolonged effect)—recent advances may improve the residual activity of moisturizers by permitting sustained release after bathing
- Emollients (agents that soften and soothe the skin)—coat the skin; smooth the roughened surfaces produced by excessive scaling

Generalized (Systemic) Therapy

- Specific causes of exfoliative dermatoses require specific treatments (such as thyroid hormone [thyroxine] replacement for animals with inadequate levels of thyroid hormone [hypothyroidism]; zinc supplements for zinc-responsive dermatosis)
- Antibiotics administered by mouth or injection—always indicated for secondary skin infection characterized by the presence of pus (secondary pyoderma)
- Retinoid drugs—varied success for seborrhea of unknown cause (idiopathic seborrhea) or primary seborrhea; reports of individual response to retinoids (especially cocker spaniels with a primary keratinization defect); generally, topical therapy provides more benefits for dogs than does retinoid administration
- Cyclosporine (medication to decrease the immune response) may be used in some cases
- Ketoconazole (an antifungal drug)—may be used for treatment of severe skin inflammation due to *Malassezia*, a yeast

FOLLOW-UP CARE

PATIENT MONITORING

- Antibiotics and treatment applied to the skin directly (topical therapy)—recheck every 3 weeks to monitor response; patients may respond differently to the various topical therapies
- Seasonal changes, development of additional diseases (especially increased sensitivity or reaction in the skin to the presence of a foreign agent [cutaneous hypersensitivity]), and recurrence of skin infection characterized by the presence of pus (pyoderma)—may cause previously controlled patients to worsen; re-evaluation critical for determining if new factors are involved and if changes in therapy are necessary
- Hormonal disorders (endocrinopathies)—blood work to monitor thyroid levels following treatment for inadequate levels of thyroid hormone (hypothyroidism), should be performed 4 to 6 hours following administration of thyroid medication—frequency of thyroid monitoring as recommended by your pet's veterinarian; ACTH-stimulation tests should be performed for proper management of pets with excessive production of steroids by the adrenal glands (hyperadrenocorticism or Cushing's disease)
- Some autoimmune disorders—re-evaluate frequently during the initial phase of treatment; less often after remission
- Medications to decrease the immune response (known as "immunosuppressive therapy")—frequent blood work (such as complete blood counts [CBCs] and serum chemistries) and urinalyses with bacterial culture to monitor for complications

- Retinoid drugs—blood work (serum chemistries, including triglycerides); Schirmer tear tests to monitor the eyes for changes in tear production
- Ketoconazole—blood work (serum chemistries)

PREVENTIONS AND AVOIDANCE

- Depend on underlying cause

POSSIBLE COMPLICATIONS

- Depend on underlying cause

EXPECTED COURSE AND PROGNOSIS

- Depend on underlying cause

KEY POINTS

- Some causes of excessive or abnormal shedding of skin cells, resulting in the clinical presentation of accumulations of surface skin cells (such as dermatophytosis and several parasitic skin diseases) have either zoonotic potential or the ability to produce human lesions; “potential zoonoses” are diseases that can be passed from animals to people
- Diagnose and control all treatable primary and secondary diseases
- Frequent and appropriate treatment applied to the skin directly (known as “topical therapy”)—cornerstone of proper treatment
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