

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 PET

Species

- Dogs
- Cats



Breed Predilections

- Primary dermatoses: many conditions, many breeds including:
- Primary idiopathic seborrhea (excessively oily or dry scaling of the skin)—an exfoliative dermatosis—at-risk breeds include Cocker spaniels, Springer spaniels, West Highland white terriers, Basset hounds, Doberman pinschers, Irish setters, Labrador retrievers
- Vitamin A-responsive dermatitis—mostly younger Cocker spaniels
- Zinc-responsive dermatitis; 2 syndromes: young adult dogs (mainly Siberian husky and Alaskan malamute); rapidly growing large-breed dogs
- Follicle defects in color mutant or dilution baldness (blue and fawn Doberman pinscher, Irish setter, dachshunds, chow chows, Yorkshire terriers, poodles, Great Danes, whippets, salukis, Italian greyhounds, Idiopathic (unknown cause) nasodigital (nose, foot pad) crusting and scaling dermatosis—spaniels, retrievers
- Sebaceous adenitis—three syndromes (1) middle-aged Samoyed and standard poodles (2) Akitas (3) Vizslas
- Ichthyosis West Highland white terrier, golden retriever, Cavalier King Charles spaniel, Norfolk terrier
- Primary seborrhea (excessively oily or dry scaling of the skin)—Persian kittens
- Secondary exfoliative dermatoses—any breed of dog or cat

Mean Age and Range

- Primary exfoliative dermatoses—apparent by 2 years of age; characteristic in affected breeds
- Secondary exfoliative dermatoses—any age, any breed

SIGNS/OBSERVED CHANGES IN THE PET

- Excessive scaling
- Smelly or malodorous skin; “rancid fat” odor is common
- Itchiness (known as “pruritus”)
- Oily skin and hair
- 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”)
- “Candle wax”-like deposits on hair
- Hair loss (known as “alopecia”)
- Secondary skin inflammation, caused by the yeast *Malassezia* (known as “secondary *Malassezia* dermatitis”)

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; 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; 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
- 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 pets; represent abnormalities in deposition of melanin pigments (responsible for the color of the skin and hair) of the hair shaft and structural hair growth; 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; possibly an aging change, may result in cracking and secondary bacterial infection that can be quite painful
- 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 as outlined above in breed section (1)—characteristic patchy or 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 are healthy; (2) — frequently develop severe and deep bacterial skin infection characterized by the presence of pus (pyoderma); (3) —disease appears distinctly different and is characterized by the presence of nodular, inflammatory lesions (known as “granulomas”); other breeds can be affected but are less likely than the breeds indicated previously
- 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; 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
- Primary excessively oily scaling of the skin (primary seborrhea)—newborn Persian kittens

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 pet 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 pet reacts or to which the skin becomes irritated (known as “contact dermatitis”); characterized by itchiness (pruritus) and secondary skin trauma and irritation
- Parasites of the skin—sarcoptic mange or scabies; demodectic mange (demodicosis) and “walking dandruff” (cheyletiellosis) producing inflammation and increased skin cell shedding
- Skin infection characterized by the presence of pus (pyoderma) producing inflammation
- Bacterial infection of the hair follicles (known as “bacterial folliculitis”) producing increased skin cell shedding
- 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 syndrome”) 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) also may be associated with excessive scaling
- Age—senior pets 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; often see areas of hair loss (alopecia) and scaling
- 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 (epitheliotropic lymphoma for example)
- Skin damage known as (actinic keratosis); a precancerous change in skin will exfoliate
- Miscellaneous—any disease process may result in excessive accumulation of surface skin cells, as seen in dandruff (scales)
- Exfoliative disorders (“exfoliative” refers to the detachment and shedding of surface skin cells)—rare in cats;

include tail-gland hyperplasia or “stud tail,” in which the sebaceous glands at the base of the tail enlarge and overproduce oil secretions, leading to matted hair and scales in the hair coat; exfoliative skin inflammation (known as “exfoliative dermatitis”) associated with thymoma, a type of tumor of the thymus (the thymus is an organ located in the front of the chest, near the neck; it is part of the immune system)

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
- Recent emphasis on restoring normal skin barrier structure and function

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)—5–15 minutes generally required, as directed by your pet’s veterinarian
- Hypoallergenic 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 pet; 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 bacterial infection of the hair follicles (bacterial folliculitis) and dry scale
- Chlorhexidine—a chemical antiseptic (compounds that kill or slow the growth of bacteria and other microorganisms); mildly drying; useful for moderate bacterial infections of the hair follicles (bacterial folliculitis) and skin inflammation caused by the yeast *Malassezia* (*Malassezia* dermatitis)
- Tar shampoos—soften and loosen crusts and scales on the skin (keratolytic shampoos) and decrease itchiness (known as an “antipruritic property”); less degreasing than benzoyl peroxide; use for moderate scale associated with itchiness (pruritus); can be irritating; might be a substance linked to cancer (known as a “carcinogen”); not widely available in veterinary products

Moisturizers

- Excellent for restoring skin hydration (frequent shampooing may result in excessive dryness and itchiness [pruritus]) and increasing effectiveness of subsequent shampoos
- Humectants (moisturizers that attract water into the surface of the skin)—enhance hydration of the skin; at high concentrations may soften and loosen crusts and scales on the skin
- Propylene glycol spray (50–75% dilution with water) applied frequently as directed by your pet's veterinarian
- Microencapsulation (moisturizers are placed in tiny capsules that allow prolonged effect)—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 pets 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 in pets that do not respond to other treatments (known as “refractory” cases); very strict regulations have made it difficult to prescribe and dispense synthetic retinoids
- Cyclosporine (medication to decrease the immune response) may be used in some cases (hypersensitivity, sebaceous adenitis, epidermal dysplasia, ichthyosis, or *Malassezia* dermatitis)
- 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)—monitor response every 3 weeks; pets 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 pets to worsen; reevaluation critical for determining if new factors are involved and if changes in therapy are necessary
- Hormonal disorders (endocrinopathies)—bloodwork to monitor thyroid levels following treatment for inadequate levels of thyroid hormone (hypothyroidism), frequency of thyroid monitoring as recommended by your pet's veterinarian; adrenocorticotrophic hormone (ACTH)-stimulation tests will be performed for proper management of pets with excessive production of steroids by the adrenal glands (hyperadrenocorticism or Cushing's disease)
- Some autoimmune disorders—reevaluate frequently during the initial phase of treatment; less often after remission; reevaluation of signs and laboratory data will be required
- Medications to decrease the immune response (known as “immunosuppressive therapy”)—frequent bloodwork (such as complete blood counts [CBCs] and serum chemistries) and urinalyses with bacterial culture to monitor for complications
- Retinoid drugs—bloodwork (serum chemistries, including triglycerides); Schirmer tear tests to monitor the eyes for changes in tear production
- Ketoconazole—bloodwork (serum chemistries)

PREVENTIONS AND AVOIDANCE

- Depend on underlying cause

POSSIBLE COMPLICATIONS

- Depend on underlying cause

EXPECTED COURSE AND PROGNOSIS

- Depend on underlying cause
- Aging skin may increase exfoliative disorders or relapses

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 zoonotic potential or the ability to produce lesions in people; “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
- 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

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