# comparative imagery

DERMATOLOGY

Linda A. Frank, DVM, MS, Diplomate ACVD, University of Tennessee

# **Canine Alopecic** Dermatoses

lopecia is a common clinical presentation in dogs. It has many causes, including traumatic, inflammatory, and noninflammatory conditions. While close inspection can determine to which category an alopecic condition belongs, a diagnosis can rarely be made without determining signalment and history and performing diagnostic tests.

Use the pictures and signalment provided to match each picture with the definitive diagnosis. Some will be straightforward, while others will be more difficult to determine without the benefit of additional diagnostic tests. Each disease corresponds with only 1 picture.

ALOPECIA X **BACTERIAL FOLLICULITIS BLACK-HAIR FOLLICULAR DYSPLASIA** COLOR DILUTION ALOPECIA CYCLIC FLANK ALOPECIA HYPERADRENOCORTICISM HYPOTHYROIDISM POSTCLIPPING ALOPECIA **RABIES VACCINE-INDUCED ALOPECIA SEBACEOUS ADENITIS** 



Adult mixed-breed dog



4-year-old spayed female boxer



9-year-old spayed female mixed-breed dog



See pages 66-68 for answers.





3-year-old spayed female toy poodle



7-year-old spayed female Maltese



3-year-old castrated male Doberman mix



3-year-old spayed female Samoyed



7-year-old spayed female Yorkshire terrier



10-month-old intact female mastiff



7-year-old intact female Pomeranian

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### comparative imagery continued



#### Black-hair follicular dysplasia

Hair loss in this patient is restricted to the black areas of hair. Very few diseases present in this manner. Definitive diagnosis is achieved with biopsy. Histopathologic evaluation demonstrated periadnexal melanin accumulation and large aggregates of melanin within hair shafts, bulbs, and epidermis. This condition cannot be diagnosed by trichogram (hair-pluck examination) because the hairs are too pigmented to see abnormal clumping.



#### Rabies vaccine-induced alopecia

This dog has gradual progressive hair loss at the site of a rabies vaccination administered 8 months before presentation. In some dogs, especially small breeds like miniature and toy poodle, dachshund, and Maltese, local vasculitis and, consequently, ischemia may occur at the vaccination site, resulting in alopecia. Mild scale, hypopigmentation, hyperpigmentation, or even central ulceration may be present. This lesion may resemble dermatophytosis; however, the skin usually feels smooth and thin, suggesting ischemic changes rather than thickening secondary to inflammation. Histopathologic evaluation usually provides a definitive diagnosis.



#### Cyclic flank alopecia

This dog has bilateral hair loss. Alopecia usually occurs with decreasing day length and resolves in 2 to 4 months, although hair regrowth may be unpredictable. The alopecia may recur annually but not always. This condition has been described most frequently in boxers, English bulldogs, and Airedale terriers. Melatonin has been used anecdotally to prevent recurrence in subsequent years and may speed resolution of the alopecia.



#### Hyperadrenocorticism

The hair loss in this patient affects the trunk, sparing the head and distal extremities. This is a common presentation for noninflammatory alopecias, such as endocrine dermatoses, cyclic flank alopecia, and alopecia X. Hyperadrenocorticism is often associated with other systemic signs, such as polyuria, polydipsia, and polyphagia, and is often accompanied by elevated alkaline phosphatase levels. Sometimes, however, hair loss is the first clinical sign noted. A middle-aged dog with truncal alopecia sparing the head and distal extremities should be evaluated for possible endocrine disease.



#### **Bacterial folliculitis**

This dog has a "moth-eaten" or patchy distribution of alopecia over the dorsum. This pattern of alopecia is caused by focal areas of inflammation typical of folliculitis in short-coated breeds. Skin scrapings are required to rule out demodicosis, and fungal culture is needed to rule out dermatophytosis. While this dog has a blue coat color, color-dilution alopecia would not present as a "moth-eaten" appearance unless there is secondary pyoderma. In that case, evaluating the dog after treating the pyoderma will allow you to determine whether the pyoderma is a complication of color-dilution alopecia. This dog's alopecia resolved after treatment of the pyoderma.



#### Sebaceous adenitis

Sebaceous adenitis is an inflammatory destruction of the sebaceous glands resulting in alopecia and seborrhea. Breeds typically affected include the Samoyed, Akita, standard poodle, and vizsla. This dog has alopecia with only minimal seborrhea over the dorsal trunk. This distribution is also compatible with such noninflammatory alopecic disorders as endocrine dermatosis or alopecia X. A biopsy is diagnostic for sebaceous adenitis, showing either inflammatory cells targeting the sebaceous glands or total lack of sebaceous glands.





#### Hypothyroidism

Hypothyroidism is seldom associated with the classic endocrine pattern of alopecia—a bilaterally symmetrical distribution sparing the head and distal extremities. Instead, alopecia occurs in areas of "wear," such as the tail, elbows, lateral thighs, and even bridge of the nose. Hyperpigmentation may be associated with the alopecic areas. This dog has alopecia of the tail, caudal thighs, and bridge of the nose, the last of which is associated with hyperpigmentation.



#### Color dilution alopecia

Hair loss in this patient is restricted to the gray areas of the coat. The tan hairs are normal in length and texture. While color-dilution alopecia usually occurs in animals younger than 3 years of age, sometimes it is first noticed in older animals. This dog's hair loss only recently occurred. A trichogram demonstrating abnormal melanin clumps in the cortex of the hair is often helpful in diagnosing a dog with color dilution alopecia. It is important to remember that the dilution gene causes melanin clumping, which should occur in uniform packets throughout the hair shaft. Large irregular clumps that distort the hair cortex, however, are abnormal and support a diagnosis of color-dilution alopecia. Definitive diagnosis can be achieved with a biopsy (see histopathology description for black-hair follicular dysplasia).

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#### Postclipping alopecia

Clipped on the dorsal neck and lumbar areas for cerebrospinal fluid analysis about 2 months before presentation, this dog's hair has not grown back and the skin has become hyperpigmented in the alopecic areas. Postclipping alopecia may result from hair follicles going into an arrested stage as a result of vascular perfusion changes in response to cutaneous temperature changes or manipulation-such as vigorous scrubbing, as suspected in the present casebecause this condition often occurs in dogs that have had epidurals. Postclipping alopecia may also be caused by clipping the coat when the hair cycle is in "follicular hibernation," where the follicles naturally are in telogen for a prolonged period. This latter condition is seen more commonly in breeds with long, thick coats, such as Siberian huskies or chow chows. In either case, the hair coat regrows with

time, usually with the next major seasonal influence on hair growth, such as spring or fall. Occasionally, some dogs do not have hair regrowth for up to 2 years. A dog with this disorder could also have endocrine disease or another noninflammatory alopecic condition that becomes exposed when the dog is clipped. These diseases are not yet clinically evident but the hairs are no longer cycling, and clipping simply uncovers the problem.

Article archived on www.cliniciansbrief.com



#### Alopecia X

This dog has progressive hair loss of the trunk, sparing the head and distal extremities. Alopecia X is a condition of unknown cause that results in truncal alopecia and hyperpigmentation of the skin. It most commonly occurs in plush-coated breeds, such as Pomeranians, Malamutes, Samoyeds, Siberian huskies, and chow chows. The diagnosis is based on signalment, clinical signs, and ruling out the common noninflammatory causes of alopecia, such as hypothyroidism and hyperadrenocorticism (see Diagnostic Tree: Endocrine-Like Hair Loss Pattern, July 2007, available at www.cliniciansbrief.com).

# practice hotline

## **Corneal Implant**

New Procedure A researcher at lowa State University has successfully performed the first veterinary corneal implant procedure in the U.S. The procedure was performed on a 7-year-old mountain cur dog using plastic implants produced by German manufacturer Acrivet (www.acrivet.com). The new corneas are functional but the dog has little peripheral vision. The devices are not yet available commercially.---Medical News Today 5/13/08

# Salmonella Infection Linked to Dry Dog Food

Announcement

For the first time, contaminated dry dog food has been identified as the source of Salmonella enterica infection in humans. A multistate case-control study conducted by the U.S. Centers for Disease Control and Prevention implicated a manufacturing plant in Pennsylvania. An inspection of the plant turned up 1 isolate of the outbreak strain on an environmental surface and 2 isolates in 2 brands of dry dog food. The manufacturer recalled these 2 brands and suspended operations between July and November 2007 for cleaning and disinfection.—Morbidity and Mortality Weekly Report 5/15/08

# Health Update

## Suicide More Common in Veterinary Profession?

Veterinarians have the highest suicide rate in Australia, 4 times higher than that of the general adult population. Kangaroo Island veterinarian Greg Johnson said, "There is stress in dealing with the animals and with the owners that are obviously concerned about the welfare of their pets...and in running a business, particularly the stress associated with people who don't want to pay for the cost of veterinary treatment in some circumstances."—ABC Rural 4/30/08