

A bulldog with focal alopecia



Valerie, a 4-year-old intact female English bulldog, presented with a nine-month history of nonpruritic bilateral alopecia and hyperpigmentation of her flanks. The owners reported that the same pattern of hair loss had occurred in the early summer of the two previous years, but oral antibiotic therapy had seemed to resolve the problem. Antibiotic therapy for this year's recurrence resulted in no improvement.

The physical examination revealed a patchy, irregular symmetrical alopecia and hyperpigmentation on both flanks. The skin was normotonic, and the hair around the areas did not epilate easily.

Differential diagnoses

Focal alopecia in dogs can be due to folliculitis (*e.g.* caused by superficial pyoderma, dermatophytosis, demodicosis), endocrinopathy (*e.g.* hypothyroidism, hyperadrenocorticism, sex hormone imbalance), alopecia areata, and canine recurrent flank alopecia.

Diagnostic tests

Microscopic examination of skin scrapings for mites and a dermatophyte culture were negative. The results of a complete blood count and serum chemistry profile including resting thyroxine concentration were normal. Histopathologic examination of the affected skin revealed a normal epidermis and dermis except for epidermal hypermelanosis. The hair follicles were filled with keratin, had narrowed follicular ostia and pigmentary incontinence, and were abnormally truncated at their bases with fingerlike projections into the surrounding tissue. The histologic findings confirmed a diagnosis of canine recurrent flank alopecia.

Discussion

Canine recurrent flank alopecia (also known as cyclic flank alopecia, seasonal flank alopecia, and cyclic follicular dysplasia) is an idiopathic disorder most commonly seen in boxers, bulldogs, Airedales, and schnauzers, although it can affect any breed. Mean age of onset is 4 years (range 8 months to 11 years)¹⁻⁵ It can affect intact or neutered males and females. Clinical signs include a nonpruritic, noninflammatory, well-demarcated alopecia of the flanks, which is usually bilaterally symmetrical. Sometimes it affects only one flank. Occasionally, alopecia may also involve the dorsum of the nose, base of the tail or ears, and perineum.

In the Northern hemisphere, the onset of alopecia usually is between November and March.^{2,3} Most dogs regrow their hair within three to eight months, although new hair may have altered pigmentation or regrowth may be incomplete.¹⁻³ In some cases, the hair never regrows. Some dogs lose the same amount of hair each year; others lose more and more hair and for longer periods. Also, some affected dogs have only one or two episodes of hair loss.

The cause of this disorder is unknown. Underlying endocrinopathies have not been documented,⁶ although several cases of canine recurrent flank alopecia concurrent with hypothyroidism have been described.² The disease's seasonal recurrent nature suggests that photoperiod is involved; a theory supported by the finding that the time of onset of recurrent flank alopecia in dogs in the Southern hemisphere is the reverse of that in the Northern hemisphere.² Some investigators have implicated a genetically influenced melatonin deficiency or hyporesponsiveness.^{2,3} Melatonin, a hormone synthesized in the pineal gland, is involved in the neuroendocrine control of skin and coat coloration and fur growth cycle in mammals and is a potent antioxidant.

The diagnosis of canine recurrent flank alopecia is based on history, clinical signs, test findings that rule out other diseases, and skin biopsy results. Histopathologic findings include dysplastic, keratin-filled hair follicles with fingerlike projections into the underlying dermis. Increased melanin is often seen in sebaceous ducts and hair follicles.

Treatment options for canine recurrent flank alopecia are limited, and judging the response to therapy is hindered by the tendency of the hair to regrow spontaneously. Not treating the alopecia is a valid option since the disease is purely cosmetic with no systemic manifestations. Injectable or oral melatonin therapy has been used with apparent success in many cases.^{2,3,7} Although melatonin appears to be relatively hairless, the exact dosage and longterm side effects are unknown, and it should probably not be used in breeding dogs because of its potential adverse reproductive effects.

The dose options for melatonin include administering the aqueous injectable formulation subcutaneously at a dose of 20 mg/dog every two weeks for three treatments,⁷ administering one to four 12-mg sustained-release subcutaneous implants per dog once a year,^{2,3,7} or giving 3 to 6 mg of the oral formulation every eight to 12 hours for four to six weeks.^{2,3,7} Alternatively, oral melatonin at a dose of 9 mg once a day has been used successfully in several affected boxers.⁷

While administering the drug during an alopecic episode may hasten clinical improvement, melatonin may be most useful in preventing subsequent occurrences when started four to six weeks before the next expected recurrence of alopecia.^{2,3,7}

Melatonin is available in a 10- mg/ml injectable aqueous formulation (Rickards Research Foundation, Cleveland, Ohio) and in 2.5- and 12- mg implants approved for use in mink and foxes (Neo-Dynamics, Lake Delton, Wis.).^{2,3,7} A sterile abscess or granuloma can develop at the injection site. Oral melatonin is available at health-food stores in 2- and 3-mg tablets (buy from reliable manufacturers) or as a chemical-grade-powder from Sigma Chemical Company, St. Louis, Mo.

Another treatment option is light therapy (*i.e.* exposing affected dogs to a grow light to enhance hair regrowth).^{2,7} And exposing dogs to 100- to 200-watt standard incandescent light bulbs 15 to 16 hours a day from September to April may prevent this condition.^{2,7}

Outcome

Valerie was treated with 9-mg oral melatonin once a day. Two months after presentation the owner reported that Valerie's flank alopecia and hyperpigmentation had completely resolved, so we suggested discontinuing the melatonin and restarting it four to six weeks before the expected recurrence next year, provided that the owners did not plan to have Valerie bred.

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