what's the take-home?

Severe Pruritus in a 3-Year-Old Great Dane

Karen A. Moriello, DVM, University of Wisconsin

In February 2000, a 3-year-old Great Dane was presented for a second opinion for severe pruritus of 5-months duration.



History. The condition was first noticed in late September 1999 on the dog's face, legs, and ventrum, but the dog had no previous history of skin disease. The examining veterinarian found no obvious lesions and made a diagnosis of seasonal atopy on the basis of the history, clinical signs, and absence of other clinical signs. The pruritus did not respond to oral antihistamines and essential fatty acid therapy, and the dog was eventually treated with oral prednisone 0.5 mg/kg O 24 H for 10 days and then every other day until the first snow (early November). The owners were informed that if the condition was indeed seasonal atopy it would resolve with the onset of cold weather. The pruritus responded only partially to the prednisone. It greatly intensified when the therapy was discontinued in early December, and the severe pruritus and clinical signs strongly suggested Sarcoptes infestation. The dog was treated for this condition even though repeated skin scrapings were negative. There was no response to oral ivermectin (200 µg/kg Q 2 Wk for 6 weeks) and concurrent topical lime sulfur sponge-on dips twice weekly for 6 weeks. The owners continued to practice flea control throughout this period.

Physical Examination. The dog's skin was malodorous and extremely oily to the touch. Periocular erythema and lichenification were present. Erythema, hair loss, a papular-pustular eruption, waxy exudate, and lichenification were present on the dog's ventral neck and anterior chest (**Figures 1 and 2**), axillary and inguinal





region, distal extremities, and ventral abdomen. The dog was intensely pruritic.

Diagnostic Testing.

• Skin scrapings: Negative for mites

Ear swab cytologic examination: Large numbers of *Malassezia* organisms per oil immersion field (>10 organisms per high-power field)
Skin impression smear (cytologic examination): More than 10 *Malassezia* organisms per oil immersion field in all samples (Figure 3)
Impression smear of a pustule: neutrophils and rare intracellular cocci (Figure 4)

• Fungal culture: negative for dermatophytes

ASK YOURSELF ...

Aside from providing systemic antibiotic therapy, how would you treat this dog?

- A. Systemic antibiotics alone are sufficient.
- B. Add topical ketoconazole shampoo once or twice a week.
- C. Add systemic ketoconazole for 5 days.
- D. Add systemic ketoconazole therapy for 3 to 4 weeks.
- E. Add systemic ketoconazole therapy for 3 to 4 weeks and bathe twice weekly, alternating between a "degreasing" antiseborrheic shampoo and an antifungal shampoo.

continues

DISCUSSION **Correct Answer: E**

There are three major causes of pruritus in a dog of this age: ectoparasites, allergies (flea allergy dermatitis, atopic dermatitis, food allergy), and infectious skin diseases. The skin scrapings, flea control, and ivermectin therapy make it unlikely that the cause of the pruritus was parasitic. Cytologic and clinical evidence showed that bacteria (cocci, most likely Staphylococcus intermedius) and yeast (Malassezia) were present (Figures 3 and 4). These two organisms have a symbiotic relationship: one organism makes the skin more hospitable for the other. In addition, they can both cause severe pruritus.

In this patient, the infections must be treated before any additional diagnostic testing is pursued for an underlying cause; thus, quick resolution is important. If the dog is pruritic after the infections have been resolved, then diagnostic testing for underlying causes (e.g., atopy) would be indicated. If the dog is not pruritic, further diagnostic testing may not be needed. The original trigger may no longer be present or it could have been seasonal (e.g., dogs with seasonal atopy can be pruritic into December, depending on whether snow cover and cold weather are early or late for that year). Also, if further relapses occur and the dog becomes pruritic only after development of secondary infections, a nonpruritic underlying trigger may

be present (e.g., hypothyroidism or a keratinization disorder).

Bacterial pyoderma requires at least 3 to 4 weeks of properly dosed systemic antibiotic therapy with a spectrum of activity for staphylococci (e.g., cephalexin 30 mg/kg PO O 12 H for 30 days) without concurrent prednisone therapy. All of the treatment plans recommended this approach. However, the Malassezia infection is the complicating factor in this case: Oral antibiotic therapy alone will not resolve this patient's clinical signs. Given the large number of yeast cells seen on the impression smear and the severely oily skin, once- or twice-weekly baths with ketoconazole shampoo probably would not resolve the Malassezia infection. In the author's experience, topical therapy for Malassezia can be effective if the patient can be bathed three to four times a week as opposed to once or twice. Large dogs are often difficult to bathe, and bathing recommendations are difficult for clients to adhere to during the wintertime in cold climates. In addition, bathing would not address the secondary oily seborrhea, which is a perpetuating cause of the yeast dermatitis. A concurrent systemic antifungal drug (e.g., ketoconazole or itraconazole) is necessary in this case.

Also at issue is the length of therapy. The yeast dermatitis in this patient is severe, and 5 days of a fungistatic systemic antifungal drug (i.e., ketoconazole) would be inadequate. In the author's experience, treating yeast and bacterial pyoder-





TAKE-HOME MESSAGE

Patients with concurrent bacterial and Malassezia infections can be intensely pruritic and require aggressive concurrent systemic antibiotic and antifungal therapy. Frequent bathing is imperative. A search for an underlying cause should be pursued if the infections recur and/or if the patient is still pruritic after treatment.

ma concurrently for at least 3 to 4 weeks yields the best response. The severe secondary seborrhea in this patient needs to be addressed because treatment may fail if systemic therapy is used without concurrent topical therapy. Therefore, twice-weekly baths with an antiseborrheic shampoo (e.g., benzovl peroxide, tar base) to degrease the skin, alternating with an antifungal shampoo (e.g., ketoconazole, ketoconazole-chlorhexidene, miconazole) would be the best treatment choice.

This patient's pruritus resolved after 30 days of oral cephalexin (30 mg/kg PO Q 12 H) and ketoconazole (5 mg/kg PO) and twice-weekly bathing with benzoyl peroxide and ketoconazole shampoo. Long-term follow-up has revealed a diagnosis of seasonal atopic dermatitis and a primary disorder of keratinization. Severe seasonal pruritus would develop in late September/ early October, and the dog would not be pruritic during other months unless it developed a bacterial and/or yeast pyoderma. A primary disorder of keratinization was diagnosed via skin biopsy after more likely causes of recurrent infections in this breed (i.e., hypothyroidism) were ruled out.