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# Chronic Skin Problems in a Cocker Spaniel

A 6-year-old spayed female cocker spaniel presented with a 3-year history of chronic (nonseasonal) pruritus, dermatitis, otitis externa, and alopecia.

**Signalment & History.** The pruritus, dermatitis, otitis externa, and alopecia were partially responsive to antibiotics and steroids. Pruritic areas included the chin, mouth, neck, chest, abdomen, rump, tail, and perianal region (**Figures 1 and 2**). There was no history of vomiting, diarrhea, coughing, or sneezing. The dog received monthly selamectin therapy.

**Physical Examination.**

*Neck & shoulders (ventral & lateral):* Complete alopecia, erythema, hyperpigmentation, papules, crusts

*Axilla (Figure 3):* Partial alopecia, erythema, hyperpigmentation, papules

*Flank:* Lichenification, hyperpigmentation, erythema, papules, crusts

*Thorax & abdomen (ventral & lateral):* Partial alopecia, erythema, papules

*Tail:* Inflammation, alopecia, erythema, papules

*Perineum:* Alopecia, erythema, hyperpigmentation, lichenification, papules

The concave surfaces of the pinnae were swollen, lichenified, and erythematous; a ceruminous, yellowish discharge was present in both ears. Erythema, inflammation, and moderate stenosis of the vertical canals and severe stenosis of the horizontal canals obscured visualization of the tympanic membranes. Skin and ears were malodorous, and the dog was slightly lethargic.

continues

**ASK YOURSELF ...**

- What are the differential diagnoses for this patient?
- What diagnostic tests should be performed?



Generalized erythema, patchy alopecia, and hyperpigmentation on the left side of the body



Alopecia, erythema, and hyperpigmentation of rump and tail. Note significant swelling of the tail.



Alopecia, erythema, hyperpigmentation, and lichenification of the axillary region

## Diagnosis: Adverse food reaction

### Diagnostics.

- *Superficial and deep skin scrapings:* Negative for sarcoptic and *Demodex* mites
- *Ear cytology:* Rods, cocci, and yeast organisms—TNTC (both ears)
- *Skin cytology:* Yeast and cocci—TNTC

**Treatment.** The dog was treated with cephalexin (22 mg/kg PO Q 12 H) for 60 days; ketoconazole (5 mg/kg PO Q 12 H) for 60 days; and a combination of enrofloxacin, clotrimazole, and flucinolone acetonide plus DMSO (Synotic, www.fordodge.com) in the ears for 30 days. A food trial was initiated with a commercially prepared novel protein diet (Royal Canin Duck and Potato, www.royalcanin.us). Selamectin was continued for heartworm prevention and flea control. The dog was not treated for sarcoptic mange because she received monthly applications of selamectin, effectively ruling out scabies.

**Outcome.** The infections and pruritus resolved. The dog was rechecked 30 days after starting treatment. The hypodermal and *Malassezia* dermatitis improved, but evidence of infection (erythema, resolving papules, and alopecia) remained. The otitis resolved—the ears and tympanic membranes were normal—and the ear medication was discontinued. Cephalexin and ketoconazole were continued for an additional 30 days. The dog was rechecked 30 days later, and the infections and pruritus had resolved and the ears remained normal. The cephalexin and ketoconazole were discontinued. The duck-and-potato diet was continued for an additional 30 days past resolution of clinical signs.

There were no relapses of clinical signs once the oral medications were discontinued. The dog remained on the duck-and-potato food and continued to receive selamectin therapy. The original dog food was reintroduced 3 months after the initial presentation, and pruritus developed within 3 days. The novel protein diet was restarted, and the pruritus resolved within 8 days (Figure 4).

### DID YOU ANSWER ...

- Differential diagnoses for the primary (underlying) cause of pruritus and dermatitis include food allergy, atopy, sarcoptic mange, *Demodex* mange, and endocrinopathies. Differential diagnoses for the secondary problems include bacterial and yeast infections.
- Superficial and deep skin scrapings; ear and skin cytology

**Food Allergies.** Food allergy is the third most common allergy in dogs. It is a type I hypersensitivity reaction that involves mast cell degranulation. Though less common than type I hypersensitivity reactions, type III and IV hypersensitivity reactions have also been suspected to occur. Seventy-five percent of dogs with food allergy have or develop flea allergy and/or atopy. Food allergy can occur at any age; however, 30% to 50% of dogs have clinical signs before 1 year of age.

The most common dermatologic clinical sign of food allergy is nonseasonal pruritus that is often poorly responsive to glucocorticoids. Most commonly pruritus affects the ears, rump, axillary region, groin, and distal extremities. Other dermatologic signs may include nonseasonal pruritus, dermatitis (erythema, papules, alopecia, inflamed ears, recurrent bacterial/yeast infections), otitis, and anal sacculitis. Intestinal signs may include perianal inflammation, vomiting, diarrhea, flatulence, increased frequency of defecation, mucus in stool, tenesmus, and abdominal pain. Asthma or seizures can occur on rare occasions.

Predisposing factors include intestinal parasites, viral infections, inflammatory bowel disease, and IgA deficiency. Dogs are most commonly allergic to beef, chicken, corn, wheat, soy, dairy, and egg. Lamb, fish, pork, and rice occasionally cause problems. Typically, 40% of dogs react to 1 allergen, 40% to 2 allergens, and 20% to 3 or more allergens.<sup>1</sup>

**Food Trials.** Food trials are considered the



The patient 3 months after starting dietary trial and antimicrobial therapy

gold standard diagnostic test for food allergies. Blood allergen panels for foods are neither accurate nor reliable—IgE can be falsely elevated by vaccinations and season, and falsely reduced by glucocorticoids. In addition, IgG and lymphocytes, which are not measured, are also suspected to play a role in food allergy. Critical, peer-reviewed studies are minimal and reveal that the tests are neither completely specific nor sensitive. Therefore, the only way to accurately diagnose food allergy is to perform an 8- to 13-week elimination diet with a novel protein or hydrolyzed diet.

**Novel protein diets** can be home-cooked or commercially prepared. The protein source of the diet should be based on past exposure. The carbohydrate source should also be considered; however, allergies to carbohydrates are infrequent compared with allergies to proteins. Home-cooked diets are reported to be the most accurate way to diagnose food allergies; however, they are often nutritionally unbalanced and can be expensive and inconvenient for owners. There are several commercially available diets that make excellent options for diet trials (see the **Box**).

**Hydrolyzed diets** are, in essence, whole proteins (corn, soy, and chicken) that have been broken down into smaller pieces in an attempt to make the proteins small enough to evade the immune response. Hydrolyzed diets have reported to fail in up to 21% of food-allergic dogs that have been sensitized to the intact protein source. I prefer to start with a novel protein diet and if the trial is unsuccessful or there isn't a

diet the patient will tolerate, I use a hydrolyzed protein diet.

It is crucial to treat all secondary infections during the food trial. In addition, all other food sources must be eliminated (eg, rawhide bones; pig ears; table food; dog biscuits; cheese or peanut butter [if used to give medication]; flavored medications or supplements, including flavored heartworm or flea prevention medications and fish oil/fatty acids/omega capsules).

The time needed to respond to a food trial varies. One study reported response of 25% of dogs within 1 to 3 weeks of starting a diet trial, 49% within 4 to 6 weeks of starting the trial, 19% within 7 to 9 weeks, and 7% within 9 to 10 weeks. This study emphasizes the importance of continuing food trials for 10 to 13 weeks if clinical signs have not resolved.<sup>2</sup>

## Therapeutic Diets with Novel Proteins

*Hill's Prescription Diet d/d*: Venison-and-potato, duck-and-potato

*Royal Canin (IVD)*: Rabbit-and-potato, venison-and-potato, duck-and-potato

## Nonprescription Diets with Novel Proteins

*Wellness*: Duck-and-sweet potato, venison-and-sweet potato

*Natural Balance*: Duck-and-potato, venison-and-sweet potato, vegetarian formula

## Hydrolyzed Diets

*Hill's Prescription Diet z/d ULTRA*: Hydrolyzed chicken protein

*Royal Canin Hypoallergenic Foods*: Hydrolyzed soy & hydrolyzed poultry liver

*Nestle Purina Veterinary Diet HA*: Hydrolyzed soy

*Author's Note*: I no longer find fish a novel protein and do not recommend diets with fish in them for diet trials. Diets containing lamb, soy, and fish were not included in the list of novel protein diets because these ingredients are very prevalent in commercially available foods, which excludes them as sources of novel protein.

**Diagnosis.** Food allergy is diagnosed when the patient is fed the original diet or individual proteins and clinical signs recur. Reactions may happen within 30 minutes or take up to 14 days (2 dogs were reported to take 3 weeks). Alternatively, individual proteins may be introduced one at a time. If there is no reaction to, for example, beef after feeding it for 2 weeks, the dog is not allergic to beef. A washout period of 2 weeks

should be allowed before introducing the next protein. If a reaction occurs, the offending protein should be removed from the diet immediately. If secondary infections or other adverse reactions occur, they need to be treated. ■

**See Aids & Resources, back page, for references, contacts, and appendices.**  
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