what's the take-home?

INSIGHTS FROM CLINICAL CASES . PRESENTATION

# Pruritic Recurrent Otitis Externa in a Cat

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**History.** In December, a 4-year-old, neutered male, indoor domestic shorthair presented with chronic (3.5 years) otitis externa and otic pruritus. The owner reported that the problem was year-round, but clearly worse in summer. The cat had been obtained as a kitten from a farm and had ear mites at the time of adoption, which were successfully treated. At about 1 year of age, it developed mild pruritus of the ears, characterized by scratching and rubbing. The ear canals initially appeared normal except for a mild increase in ceruminous discharge. The recurrent otitis was treated with intermittent ear cleanings by the owner and use of various topical glucocorticoid otic preparations. Over the past 2 years, the otitis has worsened and the topical preparations were no longer providing any relief. In addition, the pruritus and subsequent self-trauma had spread to the base of the ear pinnae. The owner had a second cat in the house that did not have ear disease. Both cats were treated year-round with topical selamectin.

**Examination.** Except for the ears, physical examination was normal. When the ears were manipulated, the cat scratched at both ears. The inner pinnae of both ears had mild hyperpigmentation. The haired skin at the base of the ear canal was erythematous and mildly exudative (**Figure 1**). The most severe changes were noted in the ear canal. It was filled with black waxy ceruminous

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debris which obscured the tympanic membrane. Palpation of the external ear canal revealed mild thickening suggestive of mild fibrosis. When the black debris was removed, the tympanic membrane and horizontal ear canal appeared normal.

**Laboratory Results and Diagnostic Evaluation.** Ear swabs for *Otodectes* and *Demodex* were negative. Skin scrapings of the inner pinnae were negative for *Demodex* mites. Flea combing was negative for evidence of fleas. Wood's lamp examination was negative, and eventually a dermatophyte culture was also found to be negative. Cytologic evaluation of the external ear canal revealed 5 to 10 *Malassezia* organisms per 100× field, and an ear culture of the external canal revealed no growth of bacteria. Impression smears of the skin at the base of the ear revealed 3 to 5 *Malassezia* organisms per 100× field. Computed tomography of the bullae did not reveal evidence of otitis media; many *Malassezia* organisms were found on cytologic evaluation and ear culture of both bullae. Cultures of the bullae were obtained via myringotomy using a sterile tom cat catheter. Middle ear irrigation and oral itraconazole (10 mg/kg PO Q 24 H for 30 days) along with 15 days of oral prednisone (5 mg/day) did not resolve the recurrent otitis. The owner reported decreased but not eliminated otic pruritus. There was no decrease in pruritus after an 8-week food elimination trial with feline z/d (Hill's Pet Nutrition, Topeka KS). An intradermal skin test was done in the early fall, and the results were negative. The results of an in vitro allergy test are shown in the **Table**.

### In Vitro Allergy Test Results*

**Weeds**

| *Allergen* | *EA Units* |
|---|---|
| Yellow Dock | 214 |
| Pigweed, Rough | 155 |
| Mugwort | 148 |
| Russian Thistle | 137 |
| Ragweed, Short | 120 |
| Marsh Elder, Rough | 120 |
| Kochia | 104 |
| Cocklebur, Common | 103 |
| English Plantain | 92 |
| Lamb's Quarters | 85 |
| Marsh Elder, Burweed | 77 |
| Ragweed, Tall | 41 |

**Trees**

| *Allergen* | *EA Units* |
|---|---|
| Birch, Black | 111 |
| Sycamore, American | 95 |
| Cottonwood, Eastern | 81 |
| Pine, Yellow | 77 |
| Oak, White | 73 |
| Maple, Sugar | 63 |
| Box EIder | 46 |
| Walnut, Black | 31 |
| Elm, American | 30 |
| Aspen, Quaking | 29 |
| Hickory, Shagbark | 26 |
| Mulberry, Red | 1 |
| Bayberry Wax Myrtle | 0 |
| Ash, White | 0 |
| Cedar, Red | 0 |

**Grasses**

| *Allergen* | *EA Units* |
|---|---|
| Bluegrass, June | 306 |
| Meadow Fescue | 284 |
| Red Top Grass | 276 |
| Perennial Rye Grass | 270 |
| Bermuda Grass | 243 |
| Brome, Smooth | 232 |
| Sweet Vemal | 225 |
| Orchard Grass | 169 |
| Timothy Grass | 167 |
| Johnson Grass | 128 |

**Fungi**

| *Allergen* | *EA Units* |
|---|---|
| Penicillium notaturn/chrysogenum | 40 |
| Fusarium roseum | 29 |
| Aspergillus fumigatus | 1 |
| Cladosporium sphaerospermum | 0 |
| Alternaria tenuis | 0 |

**Environment**

| *Allergen* | *EA Units* |
|---|---|
| D. farinae | 3493 |
| T. putrescentiae | 2742 |
| D. pteronyssinus | 1519 |
| Cockroach | 21 |
| Flea Saliva | 4 |
| Cat Epithelium | 0 |

* Scores over 150 indicate strong positive reactions.

**ASK YOURSELF…**

- Is it reasonable to consider *Demodex* as a cause of this cat's recurrent otitis?
- Although dermatophytosis is highly contagious, this cat had no history of hair loss, and the other cat in the household was normal. Is it cost effective to perform a dermatophyte culture?
- A seasonal spike in pruritus occurs in the summer. Given this information, is it cost effective to perform a food trial in this cat?
- What question is answered by the results of middle ear irrigation and 1 month of itraconazole therapy? Why was it important to do these studies before the food trial?

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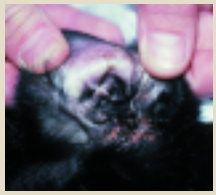
# INSIGHTS FROM CLINICAL CASES . DISCUSSION

## Interpretation

This was a case of feline atopic dermatitis manifested solely by recurrent otitis externa/media and otic pruritus. Skin scrapings, flea combings, and flea control eliminated parasitic causes of pruritus from the differential diagnosis. Otoscopic examination and computed tomography did not reveal any obstructions or tumors as a cause of recurrent otitic signs. If the *Malassezia* otitis externa/media was the sole cause of the recurrent otitis and otic pruritus, complete resolution of the otic pruritus after aggressive treatment with systemic itraconazole should have been noted. Based on these tests and the response to treatment protocols, it was concluded that infections were not the root cause of the pruritus. The lack of response to a dietary trial made food allergy as a sole cause of the pruritus unlikely.

It is important to note that diagnosis of atopic dermatitis is primarily a clinical diagnosis. In vitro or in vivo testing is used to identify important allergens. The negative results on intradermal skin testing were disappointing but may have been caused by several factors. First, such testing is difficult to perform/interpret in some cats because reactions are subtle; in others, they are quite similar to those seen in dogs. A positive reaction may have occurred but was too subtle for the clinician to recognize. Second, the false-negative results may have occurred because of stress from transport to the clinic. Also, the test may have been done at the wrong time of the year for this cat. Scores above 150 are considered "significant" on this in vitro allergy test. The cat was successfully treated with immunotherapy on the basis of recommendations of the diagnostic laboratory. For the first 6 months, otic pruritus was successfully managed with topical dexamethasone in propylene glycol (2 mg/ml) used every other day. The recurrent yeast otitis externa was treated with itraconazole (5 mg/kg PO Q 24 H for 15 to 30 days as needed). Within 6 months, the cat's ears were relatively normal, having only mild ceruminous debris. The owner reported only intermittent use of topical steroids.

### DID YOU ANSWER?



- Yes. Otic demodicosis can cause recurrent otitis externa. Bilateral erythematous-ceruminous otitis may be the only manifestation of feline demodicosis. *Demodex cati* and *D. gatoi* are found by skin scrapings and/or examination of otic material. Selamectin's wide range of antiparasitic activity makes other parasitic causes of pruritus unlikely.

- Yes. *Microsporum canis* has been reported as a cause of recurrent otitis externa in a cat. In that case, the cat had a persistent ceruminous exudate similar to that described here. In addition, the recurrent otitis externa may have been caused by a subclinical infection of the ear pinnae. This cat was adopted from a farm, which is a risk factor for dermatophytosis. In addition, that the other cat in the house was normal does not guarantee that this contagion is not present. Finally, there is no history that dermatophyte infection had been previously ruled out.

- Yes. Food allergies were a reasonable consideration for several reasons. First, the cat's housemate was normal, decreasing the probability that the problem was due to a contagious disease. Second, the pruritus was reportedly limited to the ears. Facial pruritus is a common clinical sign in feline food allergy. Third, food allergies can occur at any time, but anecdotally are more common in young cats; this cat's pruritus was noted at 1 year of age. Food allergies are year-round problems, and this cat had year-round pruritus. Finally, it is possible that the cat had more than one cause of pruritus.

- Were the clinical signs caused by an undiagnosed case of *Malassezia* otitis media? *Malassezia* otitis is one of the most common causes of otitis media in cats. The underlying triggers are unknown, but in this cat it could have been caused by *Otodectes* infestation as a kitten. In recurrent cases of yeast otitis, systemic antifungals may be needed to resolve overgrowth/infections. In this case, it was important to treat the otitis media (i.e., infectious causes of pruritus) before pursuing food allergy testing.

### TAKE-HOME MESSAGES

- The clinical signs of feline atopy are pleomorphic. Diagnosis is made by ruling out other causes of pruritus.
- Feline atopic dermatitis may present solely as recurrent otitis externa; recurrent otitis externa has long been recognized as the only clinical sign of atopic dermatitis in dogs.
- One of the most common causes of chronic otitis externa in cats is undiagnosed *Malassezia* otitis media.

Discontinuation of immunotherapy resulted in relapse of yeast otitis externa.

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