Recurrent Otitis Externa: Causes, Diagnosis, & Treatment

In this second of a 2-part discussion, panel members explore how to determine the underlying cause(s) of otitis externa, which is often atopy. They also share insights on effective treatment strategies.

Dr. Ryan: As a general practitioner, what workup should I do before referring a dog for an ear problem?

Dr. Tapp: An otoscopic exam and cytology are huge. Veterinarians should at least plant the seed that this could be allergy.

Dr. Bloom: I get dogs that have presented to a practice 5 times in the last 2 months for ear problems. Look in the ears. But they also need a full body examination—roll the dog over, look at the abdomen and feet.

Dr. DeManuelle: Cytology is imperative. If you don’t do cytology at the beginning, you don’t know what you’re dealing with. If you don’t do cytology at follow-up, you don’t know if your treatment is working. It is also important to record where the erythema is located in early otitis cases.

Dr. Bloom: Rechecking would probably eliminate 90% of these cases. The signs disappear so the owner assumes it’s gone, but calls 4 months later asking for more ear medicine. Those dogs may be seasonally recurrent, or may have acute flare-ups of chronic disease. It’s impossible to differentiate without rechecks to look for a pattern. If it recurs once a year in the summer, treat them; if it recurs multiple times each summer, do immunotherapy. If year-round, do a food trial. You have to get the owners to come back for rechecks.

Dr. Rosenkrantz: I emphasize that the first ear infection or inflammation can often signal future atopic dermatitis or food allergy. That first otitis episode is a good time to discuss with clients what to look for in the future in regard to more generalized hypersensitivity disorders.

Dr. Ryan: Should veterinarians do cultures in a first-up case of otitis?

Dr. Bloom: For otitis externa; never.

Dr. Rosenkrantz: Depending on where you culture within the canal, you may get different sensitivity results or grow different bacteria. That can be frustrating.

Dr. Tapp: Serial cytology when the dog comes back for a recheck is much more important than cultures.

KEY POINTS

- Serial cytology is essential in diagnosis and ongoing management of otitis externa.
- Patients usually have atopic dermatitis, food allergy, or both as an underlying cause.
- Successful treatment depends on controlling the underlying disease.
- The major problems in apparent treatment failures are poor owner compliance, not treating the underlying disease, and also bacterial resistance.
- Thorough ear cleaning in the clinic to remove debris is important to optimize the treatment response.

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MODERATOR

William G. Ryan, BVSc, MBA, MRCVS
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Dr. Ryan: What are the most common diagnoses in chronic otitis externa?

Dr. Rosenkrantz: Most have primary causes of hypersensitivity disorders: atopic dermatitis, adverse food reaction, or a combination of those two.

Dr. DeManuelle: As a dermatologist, I commonly see atopic dermatitis and food allergy as underlying causes of otitis externa. As far as the cause, we see a lot of *Malassezia*. Methicillin-resistant staphylococcus isn’t as common in the ears as on the skin. *Pseudomonas* would be another problem.

Dr. Tapp: Probably 80% to 90% of my otitis externa referrals are atopy cases, then food allergy.

Dr. Ryan: Are cases chronic because of the organism, or the organism plus the underlying cause?

Dr. DeManuelle: The underlying cause. We can do a really good job having the owner clean and medicate the ears, but we’re never going to get it under control unless we get that underlying disease in remission.

Dr. Rosenkrantz: Unfortunately, resistance has become a kneejerk catchall, although in our experience there is no doubt that resistance is increasing. A lot of attention is being given to biofilms and how they may protect bacterial populations from adequate antibiotic exposure, maybe aiding in the development of resistance.

Dr. Bloom: Not to overstate it, but often the problem is these ears are under-treated so they appear to be resistant. Often we’re told the ears “still looked bad” after treatment, but find out that the client didn’t complete the treatment protocol that was recommended.

Dr. DeManuelle: I agree with Wayne that resistance has become more frequent, but compliance and identification of underlying causes is important. The top reason a dog’s ear disease doesn’t respond is owner compliance failure.

Dr. Rosenkrantz: The client compliance issue is huge. We know that for many clients it really is difficult to medicate their dog at home.

Dr. Ryan: How important is bacterial resistance to treating the underlying cause?

Dr. Tapp: Yes, resistance happens, and yes, it can present a failure, but the failure happened 10 steps before when nobody recognized the underlying reason for the recurrent otitis and just kept sub-treating.

Dr. Rosenkrantz: We see staphylococcal infections, garden-variety and methicillin-resistant. Allergy is a huge secondary factor in *Malassezia* overgrowth. We see miserable *Pseudomonas*, and other gram-negatives like *E. coli* and *Proteus*. In certain breeds think of other primary diseases—idiopathic seborrhea in the Cocker Spaniel. But I agree that the biggest obstacle in these cases is the identification and control of the primary cause.

Dr. Rosenkrantz: The client compliance issue is huge. We know that for many clients it really is difficult to medicate their dog at home.

Dr. Ryan: What are your approaches to owners cleaning their pet’s ears effectively, particularly with an infection?

Dr. Bloom: I will clean the ears—in my practice clients never, ever do ear cleaning
at home. There is no science showing that owners need to do ear cleaning; two studies say you don’t. I can clear up these ears without owners doing cleaning.

Dr. Tapp: Ear cleaning is always a part of my protocol. In severe otitis, I will perform an anesthetized cleaning to get everything out of the external and middle ear. I explain to owners that a normal ear is “self–cleaning”; glands produce cerumen; cilia move debris up and out of the ear. By the time we see patients, there is so much inflammation that there is no self-cleaning…the cilia have been destroyed, glands are over-producing and we have at the least a ceruminous otitis which allows a perfect environment for overgrowth of yeast and bacteria. Cleaning is important for removing debris and then moving forward with treatment. I’m not going to have a client attempt cleaning if their dog is aggressive; that’s the exception; most clients follow through with their home care routine.

Choosing a Topical Otic Product

Dr. Ryan: How do you choose an otic product?

Dr. Tapp: I like to match the vehicle with what I’m treating. If the ear is pus-filled, I use more of a liquid topical vs an ointment base with waxy otitis. If I have a simple first-line case, I’ve started to use Osurnia®.

Dr. Bloom: The answer is based on cytology. If I see lots of rods, or neutrophils and rods, they are going to get things like TrizEDTA, they are going to get silver sulfadiazine along with what other product I decide. I use a lot of ointments. And I make darn sure to recheck those ears and not base success on resolution of clinical signs versus resolution of disease.

Dr. Tapp: Cytology is a great first step. I recommend treatment based on cytology, the type of discharge, and whether I think the dog’s ear needs cleaning. It may also be based on the client and our discussion of what they can realistically do at home—I take all those factors into account.

Dr. Ryan: What’s your experience with the lanolin-based compounded products—ear packs?

Dr. Tapp: I don’t use ear packs because of the disasters I’ve seen—deafness, packed junk stuck in the ears.

Dr. Bloom: I don’t like them for two reasons. First, they are using fluoroquinolones, which I feel very strongly should never be used except as an absolute last resort. Second, you’re never going to flush it out of the middle ear.

Dr. Ryan: When should rechecks happen?

Dr. DeManuelle: It depends on the severity of the ear disease, the temperament of the dog, and how painful it is.

Dr. Rosenkrantz: It really is dependent on the case. The cases that are primary ear referrals are going to need follow-up within a short period of time.

Dr. Bloom: A recheck in 7 to 14 days is reasonable.

Dr. Tapp: One of the nice things with Osurnia is that when they come back for their second dose, I’m looking in the ear and doing cytology. It would be great if we could do that in all our patients.

Offering a New Approach

Dr. Ryan: What’s been your experience with Osurnia® (florfenicol/terbinafine/betamethasone acetate)?

Dr. DeManuelle: I’ve had really good success and haven’t seen any adverse events yet. People are thrilled that they don’t have to use daily ear medication.

Dr. Rosenkrantz: Using just 1 tube per affected ear helps eliminate the concern of reusable products that get contaminat ed on the outer edge of the applicator. With the single dose delivery, you just use it and toss it. The soft tip reduces the worry about traumatizing the ear.

Dr. Tapp: A dog named Bradley Cooper had been diagnosed with severe refractory otitis. The owner was unable to treat the ears, so the otitis raged on. The referring veterinarian was considering total ear canal ablation (TECA) or at least an anesthetized ear flush. I wanted to try Osurnia before they considered a

Indication: OSURNIA is indicated for the treatment of otitis externa in dogs associated with susceptible strains of bacteria (Staphylococcus pseudintermedius) and yeast (Malassezia pachydermatis).

Osurnia® (florfenicol/terbinafine/betamethasone acetate)

Osurnia is for otic use only under veterinary supervision. Do not use in dogs with known tympanic perforation or a hypersensitivity to florfenicol, terbinafine or corticosteroids. Adverse reactions observed during clinical trials include vomiting, increased liver enzymes and transient loss of hearing. For product label, including complete safety information see page 83.

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I’ve been very impressed with Osurnia® (florfenicol/terbinafine/betamethasone acetate), particularly in dogs with combination staphylococcal and Malassezia infections.

—Dr. Rosenkrantz

Dr. Ryan: The gel formulation of Osurnia is different from the consistency of other products. How does that affect application and effectiveness?

Dr. Rosenkrantz: I like that Osurnia is initially viscous and spreads into the canal after gently massaging the ear.

Dr. DeManuelle: We had this Tibetan mastiff—a huge dog with elephant-like ear canals that was worked up beautifully by the referring veterinarian. It was an atopic dog with lots of Malassezia in the ear. Cultured methicillin-resistant Staphylococcus pseudointermedius was sensitive to chloramphenicol and amikacin. The referring veterinarian was using oral ketoconazole and amikacin in the ear but still getting positive cytology. I applied one tube of Osurnia as directed by the label. When the owner came back the second week, the dog’s ear looked beautiful. We went ahead and applied the second dose of Osurnia. After 2 months cytology is negative. I was a little doubtful that 1 tube of Osurnia would coat the entire ear canal and tympanic membrane of this 180-pound dog, but it worked.

Dr. Rosenkrantz: I’ve been very impressed with Osurnia, particularly in dogs with combination staphylococcal and Malassezia infections. We had a Golden Retriever with chronic atopic dermatitis and a severe chronic proliferative ear. We attempted medical management for months. After lots of cultures, flushes, and anesthetic procedures, we ablated that side. Then another more persistent issue started in the remaining ear. We didn’t want bilateral ablations, so we worked him up aggressively and isolated methicillin-resistant Staphylococcus pseudintermedius and Malassezia that responded wonderfully to Osurnia with substantial reduction in staphylococcal and yeast counts in 7 days. A follow-up 2 weeks later showed no detectable organisms. The ear has been clear for months now.

TECA. We did his first dose, and when he came back for his second dose his ear problem had really improved.

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—Dr. Rosenkrantz
Betamethasone acetate is a glucocorticoid with anti-inflammatory activity. OSURNIA dissolves in ear wax and is slowly eliminated from the ear mechanically. Ear inflammation can increase the percutaneous absorption of active substances in OSURNIA.

In a laboratory study conducted in healthy dogs (see Animal Safety), low plasma concentrations of flornoflicl, terbinafine, and betamethasone acetate were measurable during the first 2-6 days after administration of 1X dose, and during the first 2-7 days after administration of 5X dose. No quantifiable plasma concentrations of any of the three active ingredients were observed in the pre-dose samples of most dogs prior to second and third administrations. Although total and peak exposure in the blood tended to be highly variable between dogs, systemic drug concentrations tended to increase in a less than dose-proportional manner as the administered dose increased from 1X to 5X.

**Microbiology:**

The pharmacological and additive effect of each of the components in OSURNIA was demonstrated in a component effectiveness and non-interference study. An in vitro study of organisms collected from clinical cases of otitis externa in dogs determined that flornoflicl and terbinafine inhibit the growth of bacteria and yeast commonly associated with otitis externa in dogs. No consistent synergistic or antagonistic effect of the two antimicrobials was demonstrated. The addition of betamethasone acetate to the combination did not impair antimicrobial activity to any clinically significant extent.

In a field study (see Effectiveness), the minimum of 10 isolates from successfully treated cases with OSURNIA was met for Staphylococcus pseudintermedius, Malassezia pachydermatis, and Pseudomonas aeruginosa. However, there were only three dogs where P. aeruginosa was the only pathogen present.

**Effectiveness:**

Effectiveness was evaluated in 235 dogs with otitis externa. The study was a double-masked field study with a placebo control (vehicle without the active ingredient). One hundred and fifty-nine dogs were treated with OSURNIA and the seventy-six dogs were treated with the placebo control. All dogs were evaluated for safety. Treatment (1 ml) was administered to the affected ear(s) and repeated 7 days later. Prior to the first administration, the ear(s) were cleaned with saline but not prior to the Day 7 administration. Six clinical signs associated with otitis externa were evaluated: pain, erythema, exudate, swelling, odor and ulceration. Total clinical scores were assigned for a dog based on the severity of each clinical sign on Days 0, 7, 14, 30 and 45. Success was determined by clinical improvement at Day 45. The success rates of the two groups were significantly different (p=0.0084). 64.76% of dogs administered OSURNIA were successfully treated, compared to 43.42% of the dogs in the placebo control group.

**Animal Safety:**

In a target animal safety study, 24 mixed breed dogs (4 dogs/sex/group) were aurally administered 0X, 1X (1 ml/ear or 2 ml/dog with repeated administration) in 7 days) or 5X (5 ml/ear or 10 ml/dog with repeated administration in 7 days) doses of OSURNIA for a total of 6 administrations in 5 weeks. All dogs remained in good health with normal hearing throughout the study. Decreased weight gain was noted in the 1X and 5X groups compared to the control group. Clinical findings included post-administration ear wetness in 1X and 5X groups and unilateral, transient brown/red discharge from one ear each in two 5X dogs, with erythema in one dog after the 4th application. Local microscopic changes in ears (without clinical effects) included: slight or moderate unilateral vesicle formation within the epithelium of the tympanic membrane in two 1X and four 5X dogs, and unilateral mucosal ulceration in the lining of the middle ear cavity in three 5X dogs. Three 5X dogs had slightly elevated ALT activity, accompanied by minimal or mild microscopic hepatocellular vacuolation (in two dogs). Cortisol response to ACTH stimulation was decreased, but within the normal reference range, in 1X dogs. The 5X dogs had a decrease in serum cortisol levels after ACTH stimulation (below normal reference range) accompanied by decreased adrenal gland and thymic weights with minimal adrenal cortical atrophy and slight (in three dogs) or moderate (in one dog also noted with slightly lower lymphocyte count) lymphoid depletion of the thymus. The ACTH stimulation test results are consistent with systemic absorption of betamethasone resulting in a likely reversible suppression of the hypothalamic-pituitary-adrenal axis as seen with administration of exogenous corticosteroids.

**Storage Conditions:**

OSURNIA should be stored under refrigerated conditions between 36° - 46° F (2° - 8° C). To facilitate comfort during administration, OSURNIA may be brought to room temperature and stored for up to three months.

**How Supplied:**

OSURNIA is a gel in a single use tube with a flexible soft tip, supplied in cartons containing 2 or 20 tubes.

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Manufactured for:
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Made in UK

NAH/OSU-GEL/W2