

Otitis Externa

A COMPLETE APPROACH



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Otitis externa is a frequent presenting complaint in veterinary medicine. Dogs may exhibit head shaking, ear scratching, odor from the ears, or outright drainage from the ear canals. A systematic approach to the otitis patient is the key to healthy ears and satisfied clients.

EXAMINATION

The physical examination provides valuable knowledge about the status of the ear canal and allows the veterinarian to assess whether inflammation, edema, and exudate are present. The status of the tympanic membrane should be ascertained. Foreign objects and masses in the ear canal may also be observed. In addition, physical exam findings offer insight into the possibility of an underlying allergy.

CYTOLOGY

When performing cytology, the primary concern is the presence of bacteria or yeast organisms. However, evaluating the amount and quality of white blood cells present is also helpful. Cytology from affected ears usually does not reveal a large number of white blood cells. When present, the neutrophil is the most common white blood cell observed. Neutrophils are often well preserved in cases with a severe inflammatory component. In contrast, neutrophils with intracellular bacteria indicate an active response to infection. Otic cytology from chronic cases often shows degenerate neutrophils. Macrophages may also be seen in chronic cases. With appropriate treatment, the white blood cell component should resolve along with the infectious component. Persistent inflammation suggests an additional problem such as otitis media or medication reaction. The initial characteristics of the infection provide a baseline measurement to refer to at the follow-up appointment. For a detailed cytology aid that you and your staff can download and use in your hospital, please visit www.dechra-us.com.

Cytology – What To Look For

BACTERIA	<ul style="list-style-type: none">• Note type (rods vs. cocci) and number• Rods are concerning; generally indicate a Gram-negative infection
YEAST	<ul style="list-style-type: none">• Note the presence of and number of yeast
PARASITES	<ul style="list-style-type: none">• Note the presence of any parasites (adults, immature and eggs)
NEUTROPHILS	<ul style="list-style-type: none">• Intracellular bacteria indicate active infection• Degenerative neutrophils indicate chronicity
MACROPHAGES	<ul style="list-style-type: none">• Note the presence and number of macrophages• Presence indicates chronicity

TREATMENT

The treatment you choose depends on both the otoscopic exam findings and evaluation of the otic

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exudate. For example, yeast require a topical medication containing an antifungal agent such as miconazole, clotrimazole, posaconazole, or terbinafine. You might also use an ear wash containing ketoconazole. If rod-shaped bacteria are observed, a tris-EDTA ear wash is often beneficial. Most rod-shaped bacteria are Gram-negative and often pose a challenge when attempting to resolve the infection they cause. Tris-EDTA damages the Gram-negative cell wall to facilitate the entrance of antimicrobials.¹ The number of antibiotic options in commercially available otic products is limited. Many contain gentamicin, which is a reasonable first-line treatment. Other antibiotics available include orbifloxacin, enrofloxacin, polymixin B, neomycin, and florfenicol.

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Inflammation is another factor that will influence which otic medication you prescribe. For example, if the ear canal is very inflamed and swollen, a product with a more potent steroid such as mometasone will be beneficial. Typically, oral antibiotic and antifungal medications are not helpful for treating otitis externa. Oral antimicrobial agents are usually reserved for otitis media. However, oral medication can be very important for controlling pain and anxiety. Otitis externa is painful and dogs with chronic otitis often become quite fearful of ear treatments. Oral medications such as tramadol, NSAIDs, and anxiolytics should not be overlooked.

CLEANING

The importance of cleaning the ear canal cannot be overstated. Thorough cleaning removes debris (which inhibits the action of topical medication), microbes and their biofilm, and inflammatory mediators. The type of ear wash you choose is critical. Some ear washes have the added benefit of killing bacteria, yeast, or both. As mentioned, washes containing Tris-EDTA are very useful for otitis secondary to Gram-negative bacteria. In contrast, some types of otitis respond

best to a wash that removes wax. In most cases, cleaning needs to be continued for a few days to weeks, even after the infection has resolved. Continued cleaning removes residual debris while epithelial migration and cerumen production, which are affected by infection, normalize.

DETERMINE THE UNDERLYING CAUSE

Many patients with otitis externa have an underlying allergic disease.² Atopy, adverse food reaction, flea bite hypersensitivity, and contact allergy can all cause otitis externa. In some cases, otitis externa may be the only clinical sign of adverse food reaction. If allergic dermatitis is present, it will need to be managed before you will achieve long-lasting relief from otitis externa.

RECHECK

Usually the recheck is scheduled in two weeks. However, a one-month recheck may be more appropriate if you are using a long-acting otic medication. Otoscopy is just as critical during the recheck examination. This is your opportunity to evaluate whether the ear canal is normal and the infection has truly resolved. Repeating otic cytology is often advisable as well.

The approach to otitis externa needs to be comprehensive to ultimately resolve the problem. It includes a careful ear examination, cytological evaluation, thorough ear cleaning, appropriate treatment, identification of any underlying conditions, and follow-up to ensure complete resolution. Take the time to thoroughly address each pet individually; the result will be a healthy patient, a happy client, and a valuable long-term relationship.

REFERENCES

1. Pye Charlotte, Ameet Singh, J. Scott Weese. Evaluation of the impact of tromethamine edetate disodium dehydrate on antimicrobial susceptibility of *Pseudomonas aeruginosa* in biofilm in vitro. *Vet Dermatol*. Vol 25; Issue 2; April 2014.
2. Zur G, et al. Canine atopic dermatitis: a retrospective study of 266 cases examined at the University of California, Davis, 1992-1998. Part I. Clinical features and allergy testing results. *Vet Dermatol*. Vol 13; Issue 2; April 2002: pages 89-102.

Some treatments mentioned in the article are extra-label.

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