



Memorial-610 Hospital for Animals

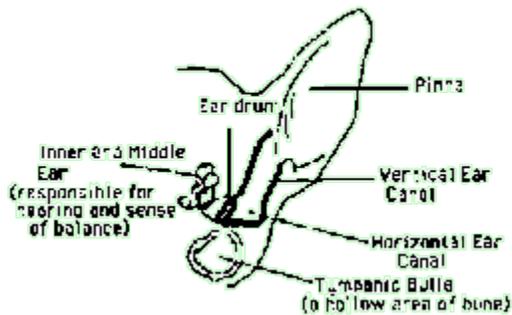
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Ear Infections

OTITIS EXTERNA



As demonstrated by the above illustration, the ear canal in the dog and cat has a vertical and a horizontal component. This predisposes the pet to ear infections as debris must work its way upward rather than straight out.

Disease of the ear usually stems from over-production of wax as occurs in response to irritation. Allergic skin disease affecting the ears is one possible cause (especially in recurring cases); other causes of ear infections include ear mites and foreign bodies (such as grass awns or foxtails), or hair growth deep in the canal (common in poodles and schnauzers especially). The moisture of the wax promotes bacterial and/or fungal growth and infection. Soon wax in ears is joined by pus.

Pets show discomfort around their ears by scratching, rubbing their ears on the floor or furniture, or by shaking the head. If the infection reaches the middle ear, affected animals may have a head tilt, a lack of balance, and unusual eye movements.

AURAL HEMATOMA

When a pet with uncomfortable ears shakes and scratches vigorously, a blood vessel in the ear flap may rupture. This leads to bleeding into the tissues of the pinna (see above illustration). The usual recommendation is to have the blood clots removed and the ear bandaged and cleaned under anesthesia. If the hematoma is not so big as to occlude the ear

canal (thus preventing medication), the option to forgo surgery exists; but without surgery, the ear may scar down into an abnormal appearance.

TREATMENT

STEP ONE

Most ear infections are cleared up simply with professional cleaning followed by medication at home. If only mild debris is present in the ear canals, simple disinfection and washing of the ear is adequate. Microscopic examination of the ear debris (called cytology) allows preliminary identification of the type of infection growing inside the ear. However, in most cases, a full ear flush is needed to even examine the ear drum. For patient comfort, we recommend sedation/anesthesia for this procedure as the ears are sore and the instruments can be damaging if the pet jumps at the wrong time.

STEP TWO

Some pets have chronic ear problems (the infection is not controlled by general medication, or returns when general medication is discontinued). In these cases, the ear discharge should be cultured so that the precise organism can be pinpointed and treated specifically. Regular treatment at home with disinfecting ear washes should become part of the pet's grooming routine. Further testing may be in order to determine why the infection continues to recur. Allergy is the most common reason for recurrent ear problems.

STEP THREE

Depending on the severity of the problem, the vertical canal may need to be opened surgically. This enables debris to be removed more effectively. This is done to prevent severe scarring after prolonged specific medical therapy has been ineffective.

If the canal becomes so scarred that it is practically closed, "ablation" may be the final option. In this surgical procedure the entire ear canal is removed and healthy tissue is allowed to grow in. These procedures are "last resorts" after severe infection has made effective medical treatment impossible. Although surgery is expensive, pets with chronic

severe otitis usually require no further ear treatment for the rest of their lives.

SOME SPECIAL INFORMATION ON PSEUDOMONAS INFECTION:

Pseudomonas aeruginosa is a very special species of bacteria; it is resistant to almost every possible antibiotic. It is common for ear infections to be recurrent and in time, many antibiotics have been used. The unfortunate tendency is for most bacteria to be killed off, leaving infection with the very resistant and practically immortal (not to mention especially smelly) *Pseudomonas*.

If one is lucky, a culture of the ear discharge will reveal that the *Pseudomonas* is still sensitive to an oral antibiotic such as Enrofloxacin. It should be noted that especially high doses of this type of antibiotic are needed to treat *Pseudomonas* in the ear and that inadequate dosing will just make *Pseudomonas* even more resistant. In other words, *Pseudomonas* must be treated definitively from the moment it is diagnosed; once it becomes resistant to oral therapy, treatment becomes vastly more difficult.

Oral therapy is generally combined with some kind of topical treatment of the ear. Fortunately, there are several concoctions that should be useful, though some your vet must mix him/herself.

Silvadene/silver sulfadiazine

This product is manufactured as a wound cream and is especially helpful in hastening the healing of damaged external tissues. It also has activity against several bacteria including *Pseudomonas*. The cream can be prepared in water for an easier ear administration.

Tris-EDTA

EDTA is a binder of metals which are important to the bacterial cell wall. Tris is used to buffer the EDTA to a pH that is not irritating to the ear and to maximize the anti-bacterial effect. This medication helps to disable the bacterial defense and allow antibiotics to kill the *Pseudomonas* bacteria.

Injectable Medications

It would be unusual for a *Pseudomonas* species to be resistant to absolutely everything. While there

may not be an oral treatment available, sometimes injectable antibiotic treatments are necessary. These same medications can also be mixed up for topical use; many are already available as commercially prepared solutions.

Chronic ear infections, as mentioned, typically have an underlying cause (usually allergy). It is important to address this problem in addition to the infection itself so as to minimize on-going ear inflammation.

AN EAR INFECTION INFORMATION CENTER HAS BEEN SET UP BY THE IOWA STATE VETERINARY SCHOOL. THIS SITE IS: <http://www.vetmed.iastate.edu/units/vth/noxon/otitis.html>

Information adapted from "Ear Infections" by Wendy C. Brooks, DVM, DABVP