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Ear Problems-an update

Ear problems are among the most common maladies in the canine patients that we see. Ear infections are found in 15-20% of canine patients and 4-7% of feline patients. Symptoms can range from none at all to include shaking the head, scratching the ears, or odor. Ear problems are also a constant source of frustration between pets and their owners alike. There is no “cookie cutter” approach to solving ear problems. Each patient has unique characteristics to their ears, which is causing the problem. In order to understand why ear problems are so common and so frustrating it is imperative to understand how the problems occur, what can cause them, and what factors make dealing with the problem so difficult.

Factors that predispose the ears for infection

It’s important to remember that skin covering and extending into the ears is similar to the rest of the skin on the body. Problems that happen on the rest of the skin can occur in the ears as well. Predisposing factors are the things that can alter the anatomy and physiology of the ear and increase the risk of outer ear infections.

Outer ear infection (otitis externa) is an infection of the pinna (earflap) and ear canal. The organisms that cause infections like warm, dark, moist places. Damaged ear skin also impairs the normal defenses. The normal bacteria and yeast that live in the ear can suddenly grow to huge numbers. Some of these predisposing factors include:

- excessive skin folds (English Bulldog)
- floppy/heavy ears causing poor ventilation and higher humidity (spaniels)
- Hair in the ears (spaniels, poodles, Bichon, Schnauzer)
- Narrow ear canals (pugs, Shar Pei, secondary to chronic infections)
- Excessive wax (cerumen) production (spaniels, Labrador retrievers)
- Trauma to the ear canal (wounds, cartilage deformity from an ear hematoma, Q-tips, excessive cleaning, plucking,
- Obstruction from a tumor, polyp, or excessive scar (granulation) tissue
- Water in the ears (frequent swimmers or bathers)

In order to prevent infection and the dreaded reoccurrence, these predisposing factors must be dealt with properly. These factors can be identified on history and thorough examination. A video otoscope greatly enhances this examination, as it provides great magnification and lighting of the area. Treatment of these factors might include frequent ear plucks, weekly cleaning with an agent to dry the ears as well as remove wax, or perhaps even surgery to correct the narrowing, skin folds, or obstruction.

Primary factors

Primary factors are direct causes of infection. They can aggravate predisposing factors and can cause a cascade of events leading to infection. This can be from introducing a new infection, but most commonly an overgrowth of the yeast and bacteria that normally inhabit the ear canal.

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- Ear mites eat wax and cell debris in the ear. They are quite contagious between dog to dog, cat to cat, and even dog to cat and vice versa. They are severely itchy. Secondary infection is common due to the inflammation and excessive wax production. Examination of the ear canal with magnification and/or a slide made of the ear wax can usually show the mite that is microscopic. Treatment of the mites is generally with a drug called Ivermectin. This is an extra label use of the drug, at a much higher dose than its approved use as a heartworm preventative. It should not be used on Collies, Border Collies, Shelties, or young kittens. The flea and tick preventative Frontline is also effective against the mites. Due to the highly contagious nature of this disease, all pets must be treated simultaneously, even if not showing symptoms.

- Flea and ticks in or around the ear can cause an allergic reaction ending with inflammation and itchiness of the ears. They are usually quite evident and proper flea and tick control is preventative.

- Disorders of skin maturation (keratinization). These disorders cause the normal maturation of the cells lining the ear canal to become disordered. This can allow for thickened skin and excessive wax production as well as impaired immunity and secondary infection. Some causes of this are seborrhea and hypothyroidism.

- Foreign bodies: in our area, the weed called foxtail is the most common culprit. Sometimes dried residues of previous ear cleaners or medications can also act as foreign objects. These objects cause severe irritation and inflammation. Foxtails are also loaded with bacteria of their own. Treatment is removal of the material and treating the infection

- Allergies: Allergies, such as environmental allergies (Atopy) and food allergies are the most common primary cause of ear infections. These can be an endless source of frustration if not properly dealt with. While most pets with allergies causing their ear infections also have other skin problems such as general itchiness or skin infections, some only have the symptom of the ear infection. The ears become infected due to the inflammation and decreased ability of local immunity to deal with the yeast and bacteria present in the ear. If the allergy itself is not dealt with aggressively enough, the infections will frequently recur. For diagnosis and treatment of allergies, please read the article My Itchy Pet.

Perpetuating Factors

Once a dog or cat gets an infection, the yeast and/or bacteria cause changes to the ear canal. While the infection is secondary to the primary cause, it complicates the treatment. The common complications are middle ear infection (otitis media) and further narrowing of the ear canal. If these perpetuating factors are not properly and aggressively dealt with, recurrence of symptoms is guaranteed. This is not a new infection, but rather an insufficient treatment of the same one. Insufficient treatment of an infection is the most common reason why symptoms return and cause chronic ear infections.

Therapy is based on what organism is causing the infection. Yeasts are treated with anti-fungals. Bacteria are treated with antibiotics. To differentiate the two, cytology (spreading the discharge on a slide and examining under a microscope) is needed. How aggressive the treatment needs to be is based on cooperativeness of the patient, severity of signs, and history of previous infections.

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Mild, first time cases are usually treated with topical therapy. This is usually an ear flush in the office followed by topical medication based on cytology and home flushing. After the therapy is finished, a re-examination is performed to make sure the infection is gone. Maintenance weekly home cleaning and dealing with the primary and predisposing factors are used to prevent recurrence.

For more severe or chronic cases the treatment is much more complex. Dealing with the infection is much harder because it is usually more deep rooted.

1) Generally the first step in examination of the canal. If the ear is especially sensitive or narrowed, the examination stops here. Corticosteroids are given orally (Prednisone) and/ or topically (Synotic) to reduce the pain and inflammation. This also helps to open the ear canals for both examination and treatment. Usually the corticosteroids are used for a few days to a week at home and then the ears are re-examined.

2) Re-examination. If there has been little resolution of any ear canal narrowing, then prognosis for elimination of the infection is poor. A surgery to permanently remove the canal and remove the infection is needed to give pain relief. This procedure causes deafness and is not to be undertaken lightly. It is only used in situations where there are chronic changes unresponsive to corticosteroids. If there has been improvement, then a deep examination is needed.

3) Deep examination. This REQUIRES heavy sedation or general anesthesia. This is an aggressive procedure that is certain to cause discomfort and stress. Using a video otoscope greatly enhances the examination due to the magnification and light it provides. A few important factors will need to be addressed-is the eardrum intact and is there infection behind the ear drum (otitis media). Radiographs (x-rays) of the middle ear are usually performed at the same time to make sure there is no middle ear infection.

4) Cytology and culture of the outer ear are performed. This will allow proper usage of antibiotics/antifungal medications. Just like in the human world, antibiotic resistance is a growing problem in pets and some bacteria are frequently resistant to many commonly used antibiotics. Culture and sensitivity testing usually takes about 3 days to come back and a short supply of an antibiotic are usually sent home based on what drug is suspected to work the best.

5) Flushing of the ears is the next step. Again, a video otoscope shows its use. With the scope, the ear can be flushed and suctioned, while watching the ear carefully the entire time. The first step is using an agent to break up the wax, followed by warm water flushing. The flushing process usually takes about 15 minutes for each ear.

6) If the eardrum is ruptured, then there is definitely a middle ear infection. The middle ear is also cultured and flushed.

7) If the eardrum is intact, then those radiographs and the video otoscope are used to determine whether or not there is a middle ear infection. If there is evidence of a middle ear infection, then a myringotomy is performed. This cannot be safely done without magnification. A myringotomy is creating a small hole in the eardrum. This allows for sampling for culture and cytology of the middle ear as well as flushing. This procedure carries a very small chance of causing an inner ear inflammation, which is usually temporary. These symptoms can include dizziness, head tilt, droopy lips, or droopy eyelids. If

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the middle ear infection is not dealt with properly, the infection will recur

8) Medication selection: This is based on culture and cytology. A combination of topical and systemic (most commonly oral) medications is used long-term generally 30 days or more.

9) Follow-ups: These are very important for a few reasons. First of all, we need to see if the treatment is working…is the ear healing? It allows us to know, especially in case of recurrence of symptoms, is it the same infection or a new one. This can tell us whether we have properly addressed a perpetuating cause or are we not properly addressing a primary or predisposing cause.

As you now see, ear infections are not simple. There are complex interlocking factors that must be dealt with to not only rid the infection but also prevent recurrence. Once a pet has an ear infection, without vigilance on the owner and doctor alike, without preventive measures at home, and without treating the cause, recurrence is guaranteed. Luckily, with advancement in equipment, research, and pharmaceuticals, we now have an ability to finally rid our pets of their ear infections. There is no need to let our pet's stinky painful ears to continue being a nuisance and a detriment to the quality life that they so deserve.

To reiterate if your pet has an ear infection:

1) An initial examination allows identification of the problem as well as the predisposing, primary, and perpetuating factors. It also allows for a treatment plan.

2) In hospital treatment which may or may not involve video otoscopy and anesthesia.

3) Home care. Intense treatments are usually short (weeks to a month or two) but lifelong ear washes at home are essential in most cases.

4) Treatment of primary and predisposing factors.

5) Re-check with the doctor to make sure the infection is cured (treatment of perpetuating factor) and that the primary and predisposing factors are being dealt with properly.

Our thanks to Dr. Louis Gotthelf, who quite literally wrote the book on ear diseases. Most of this information came from his book Small Animal Ear Diseases and lectures from specialists on ear diseases.