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### **Ear Infections in Cats**

Infection of the external ear canal, also called the outer ear, is called otitis externa. When the middle ear and inner ear are involved, these are described as otitis media and otitis interna, respectively.

#### **Contributing Factors**

Normal cats seem very resistant to ear infections. Therefore, finding otitis externa in a cat prompts us to look for an underlying problem which led to development of the infection. For example, there could be ear mites, a foreign body, or polyp in the ear canal.

There are two viruses of cats, which can cause suppression of the immune system. Cats with ear infections, which cannot be explained, should be tested for these two viruses: the feline leukemia virus and the feline immunodeficiency virus (sometimes called the feline AIDS virus). A small amount of blood is needed to test for these viruses. Diabetic cats are also known to have more frequent ear infections than other cats. The diagnosis of diabetes mellitus can be made with a blood and urine sample from the cat.

#### **Prevalence**

While ear infections are a common problem in dogs, this disorder occurs infrequently in cats. The Persian breed appears more prone to ear infections than other breeds of cats.

#### **Causes/Transmission**

Ear mites are one of the more common causes of otitis externa in cats. However, ear mite infections are generally limited to kittens and young cats. Ear mites in adult cats occurs most frequently after a kitten carrying mites is introduced into the household. Sometimes, ear mites will create an environment within the ear canal that leads to a secondary infection with bacteria and yeast (fungus). By the time the cat is presented to the veterinarian, the mites may be gone, but a significant ear infection remains.

Other causes include polyps or tumors in the ear canal, foreign material in the ear canal, trauma to the ear, and allergy.

#### **Clinical Signs**

A cat with an ear infection is uncomfortable; its ear canals are painful. It shakes its head trying to get the debris and fluid out, and it scratches its ears. The ears often become red and inflamed and develop an offensive odor. A yellowish discharge commonly occurs. When ear mites are present, the discharge may be black in color. An open wound behind each ear may result from the scratching.

#### **Diagnosis**

The ear canal is first examined with an otoscope, an instrument that provides magnification and light. This permits a good view of the external ear canal. In many cases, this examination also allows us to determine whether the eardrum is intact and if there is any foreign material in the canal. When a cat is extremely painful and refuses to allow the examination, it must sometimes be completed under sedation or anesthesia.

The next step is to examine a sample of the material from the ear canal to determine whether there are any infectious agents involved in the otitis. This is called cytology. Examination of this material under the microscope is very important in helping the veterinarian choose the right medication to treat the inflamed ear canal. There are several kinds of bacteria and at least one type of fungus that might cause an ear infection. Without knowing the kind of infection present, we do not know which drug to use.

In some cases, the material will need to be cultured. Also, if a mass is seen, it may need to be biopsied or removed.

## **Therapy**

The results of the otoscopic examination and cytology tell us what to do. If there is a foreign body or tick lodged in the ear canal, the cat is sedated so that it can be removed. Cytologic study of debris from the ear canal dictates which drug to use. Sometimes, it reveals the presence of more than one type of infection (i.e., a bacterium and a fungus, or two kinds of bacteria); this situation usually requires the use of multiple medications.

An important part of the evaluation of the patient is the identification of underlying disease. If underlying disease is found, it must be diagnosed and treated, if at all possible. If this cannot be done, the cat is less likely to have a favorable response to treatment. Also, the cat might respond temporarily, but the infection will relapse at a later time (usually when medication is discontinued).

When an ear infection has been very chronic, narrowing of the ear canal occurs. There are medications that can shrink the swollen tissues and open the canal in some cats. However, some cases will eventually require surgery. The surgery for a closed ear canal is called a lateral ear resection. Its purposes are to remove the vertical part of the ear canal and to remove swollen tissue from the horizontal canal. Removing the vertical canal should be successful, but removal of large amounts of tissue from the horizontal canal is more difficult. In some cases, the ear canal is surgically obliterated. This solves the canal problem, but it leaves the cat deaf on that side.

## **Administration of Ear Medication**

It is important to get the medication into the horizontal part of the ear canal. This is best done by following these steps:

1. Gently pull the earflap straight up and hold it with one hand.
2. Apply a small amount of medication into the vertical part of the ear canal while continuing to keep the earflap elevated. Hold this position long enough for the medication to run down to the turn between the vertical and horizontal canal.
3. Put one finger in front of and at the base of the earflap, and put your thumb behind and at the base.
4. Massage the ear canal between your finger and thumb. A squishing sound tells you that the medication has gone into the horizontal canal.
5. Release the ear and let your cat shake its head. If the medication contains a wax solvent, debris will be dissolved so it can be shaken out.
6. If another medication is to be used, apply it in the same manner.
7. When all medications have been applied, clean the outer part of the ear canal and the inside of the earflap with a cotton ball soaked with a small amount of rubbing (isopropyl) alcohol. Do not use cotton tipped applicators to do this, as they tend to push debris back into the vertical ear canal.

## **Prognosis**

In the cat, nearly all ear infections that are properly diagnosed and treated can be cured. However, if an underlying cause remains unidentified and untreated, the outcome will be less favorable. A progress check may be needed before the process is completed, but we expect ultimate success. However, the presence one of the immune suppressing viruses will complicate treatment and will have long term implications on the general health of the cat.