

suffering considerable pain due to deep-seated infection.

The only way to control these infections is to remove the external ear canal and as much of the bulla as possible (fig. 4). This surgery significantly relieves pain and usually eliminates the need for any further treatment of the ears.

Some hearing may be retained following this surgery. Most importantly, this surgery generally halts the progression of chronic ear disease, that, if left untreated, could lead to severe inner ear infection, neurological damage, and occasionally irreversible and untreatable infection.

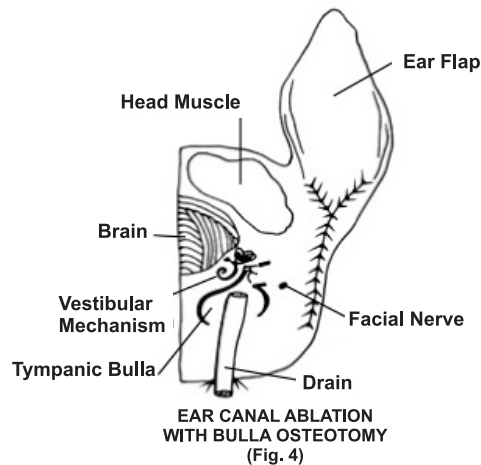
All diseased tissue that is removed is examined to find the cause of infection. Drainage tubes are left in place for approximately 2 weeks following surgery and your pet will be given a long-term regimen of antibiotics to control infection.

## Conclusion

Ear infections and the resulting inflammation and pain can be a serious problem for your pet. Surgery can lessen the risk of chronic ear disease, hearing loss, or neurologic disorders while helping your pet maintain a healthy, comfortable lifestyle. Each ear problem is a little different and requires individual examination by your family veterinarian.

Consultation with your veterinarian and the surgeons at Veterinary Surgical Centers of the Delta can help you decide which surgical alternative is best for your pet.

For an evaluation of your pet or further information about the diagnosis and surgical treatment of chronic ear disease, please call our offices.



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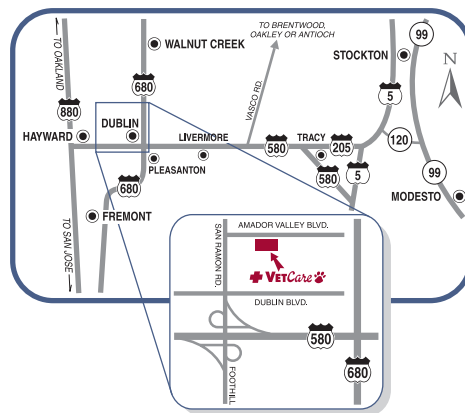
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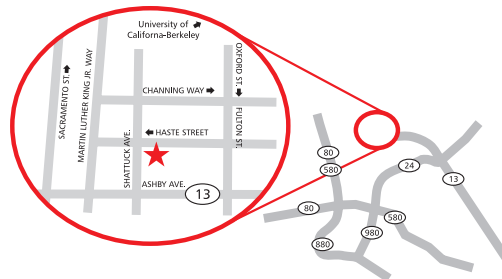
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## Ear Disease

## Problems and Solutions



Come. Sit. Stay.  
**Heal...**

## Ear Disease

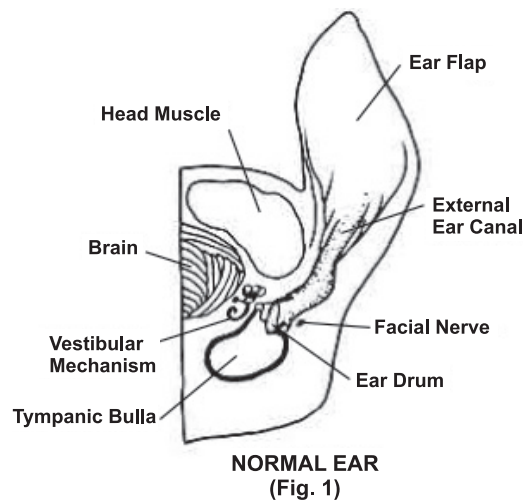
Painful ear disease is common in small animals. Bacterial or yeast infections, foxtails and other foreign bodies, allergies, parasites, and skin conditions are the most common cause of ear disease. Tumors and other systemic disorders also damage the ear. In some breeds, such as the cocker spaniel, the ear canal contains an excessive number of oil and sweat glands that can become blocked or infected, predisposing the ear to disease.

Left untreated, ear disease can result in a ruptured eardrum (with hearing loss) and extension of infection into the middle ear with possible loss of balance and other neurologic problems.

## Structure of the Ear

The ear canal (fig. 1) in small animals is significantly longer than the ear canal in people. The external portion of the ear canal is a cartilage tube lined with skin, hair and glands. The inside of this external canal is dark and moist. Because of its "L"-shaped structure, drainage and air circulation are minimal, creating a friendly environment for the proliferation of bacteria and yeast.

The external canal ends at the eardrum, which separates it from the middle ear, or bulla. The bulla is a circular canal of bone that sits at the base of the skull, behind the TMJ joint and next to the brain. Openings from the bulla lead to the inner ear, or vestibular apparatus (which helps to control balance, head position and eye movements) and to the back of the throat (Eustachian tube).



Small animals can suffer infections of all three regions of the ear: external, middle and inner. Sometimes infections can affect two or more regions simultaneously. Because the structure of the ear in dogs and cats lends itself to infection, surgical correction may be helpful in preventing recurring infections.

## Care of the Ear

Keeping the ears clean and regularly checking for foxtails or other foreign bodies will reduce the risk of infection or injury. Your family veterinarian will thoroughly examine the ears during routine checkups and provide you with specific advice for the care of your pet's ears.

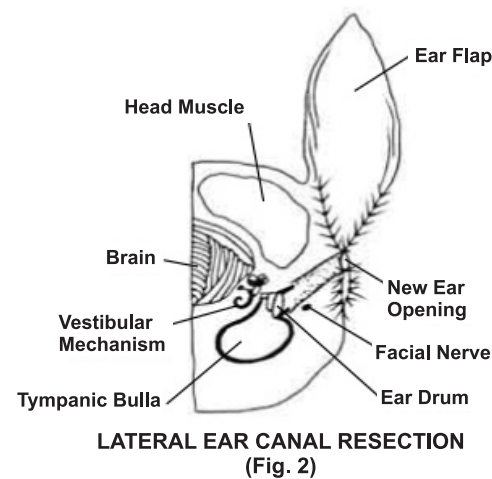
If your pet has frequent ear infections, surgical treatment can help protect hearing, relieve pain, and improve drainage by removing the infected and diseased tissues.

## Lateral Ear Canal Resection

This surgery is performed when infection is isolated to the external ear canal only. By removing part or all of the vertical tube (fig. 2), drainage and air circulation are improved. Infected tissue can be removed at the same time.

While this surgery cannot entirely prevent infection, it will help to reduce the frequency of infection by improving the structure of the external canal and by allowing easier access to the ear for routine ear cleaning and treatment with medicine.

This surgery is most effective if combined with a comprehensive, vigorous and committed ear care program.



## Ventral Bulla Osteotomy (VBO)

When chronic external ear canal infections spread, the disease gravitates down to the eardrum rupturing it and causing the middle ear (bulla cavity) to become infected as well. If the eardrum has ruptured, the bulla can be cleaned through the external ear canal. However, if the drum has subsequently healed, it must once again be perforated before infected material can be removed from the middle ear. Many times the infected material is so compacted in the middle ear that flushing alone is not beneficial.

Performing a Ventral Bulla Osteotomy (fig. 3) retains the eardrum and hearing while allowing for thorough cleaning of the middle ear. The surgery involves making a small opening in the neck to gain access to the bulla and remove the bottom of the bone canal along with all the infected material in the middle ear. The diseased tissue is studied to identify the bacteria or yeast that have caused the problem. Appropriate medications can then be prescribed to cure the infection.

Rubber tubes are left in the neck for approximately two weeks after the surgery to allow any residual infection to drain. You will be given complete instructions on the care of your pet during this recovery period.

## Ear Canal Ablation with Bulla Osteotomy (TECA/LBO)

Sometimes, the ear canal and eardrum are irreversibly damaged because of chronic infection. In such cases, hearing is already diminished or absent and your pet is

