

SURGERY OF THE EAR

Chronic infections that thicken and occlude the ear canal and tumors that fill the middle ear or external ear canal are the most common problems requiring surgery on the ear. The conformation of the ear canal predisposes it to infection, especially in certain breeds of dogs such as Cocker Spaniels, Golden Retrievers and Poodles. Large, floppy ears, hair-filled ear canals, and the moist warm environment all contribute to infection that smolders and becomes very difficult to control or eliminate.

Since the ear cannot be kept dry, and because an infection thickens the tissues of the ear canal, proliferative tissue and debris are trapped in the ear. This prevents topical ear medications from contacting the infectious agents. The end result is a vicious cycle of worsening infection and severe permanent changes in the ear.

The ear is divided into three distinct regions (Fig. 1). The *EXTERNAL EAR* is the ear canal. It is "L" shaped and ends at the tympanic membrane (ear drum). This shape predisposes the ear to infection because it creates a bottle-neck for debris, ear wax, and moisture to accumulate and irritate the delicate canal wall. The *MIDDLE EAR* is within a hollow, bony portion of the skull, known as the bulla. The *INNER EAR* is located next to the bulla and is responsible for equilibrium and balance. Any of these areas may be affected in a disease process. They are best evaluated by direct otoscopic examination and, frequently, radiographic (x-ray) evaluation.

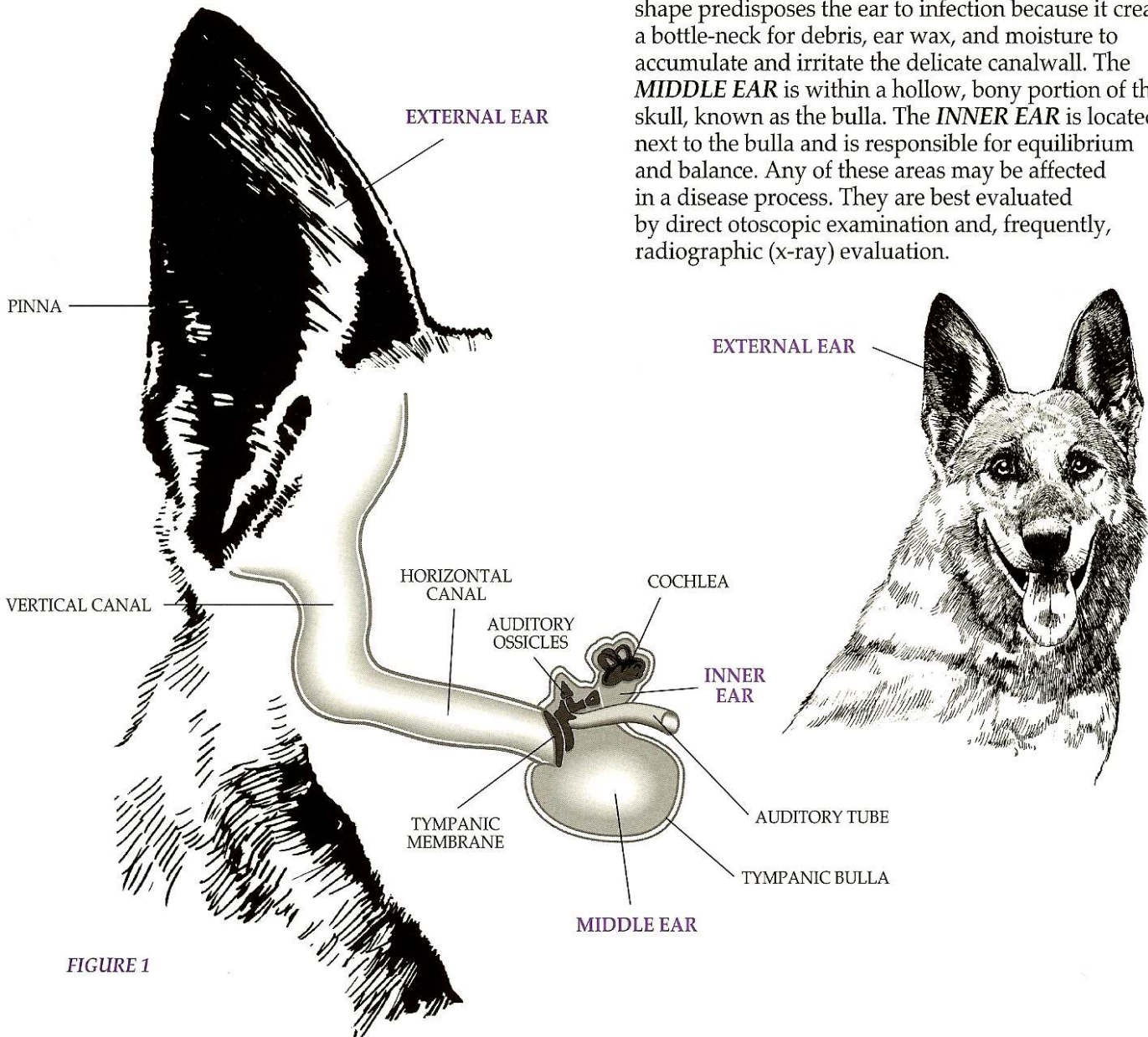


FIGURE 1

SURGERY

Three basic types of surgery can be performed, depending upon the regions of the ear that are affected.

LATERAL EAR RESECTION

Early in the disease process it may be possible to perform a *Lateral Ear Resection* (Fig. 2). This procedure is used for diseases of the external ear and involves removing and reconstructing a small lateral portion of the ear canal. This facilitates drainage of the ear canal and permits application of medications directly into the ear canal.

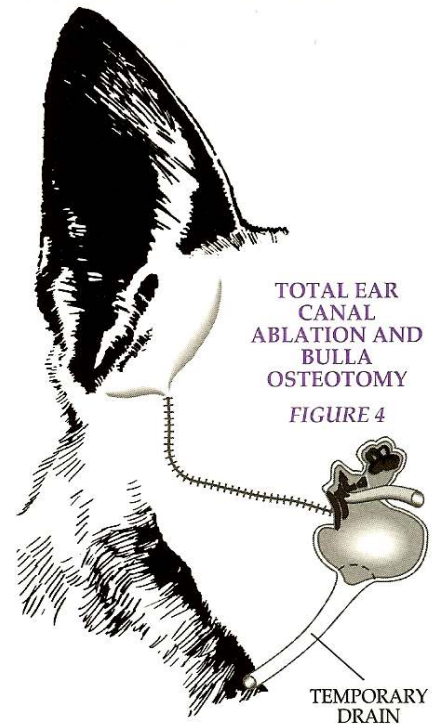
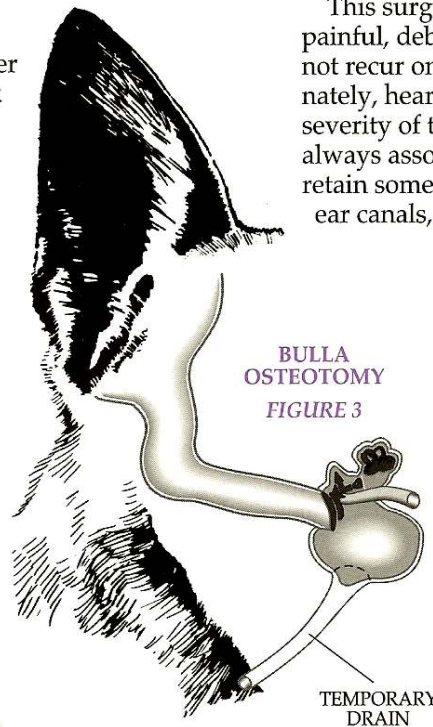
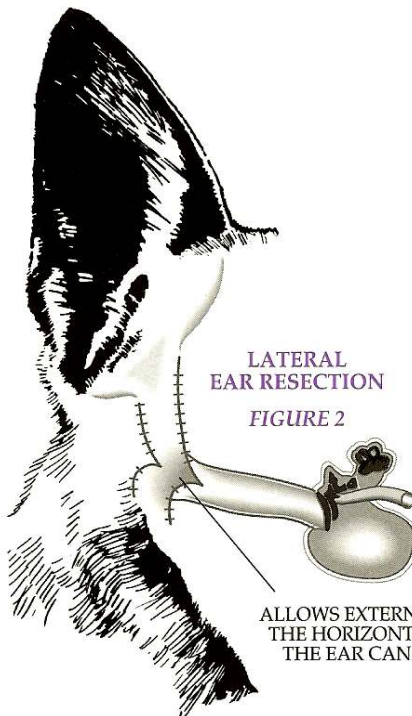
BULLA OSTEOTOMY

Occasionally only the middle ear is affected. This occurs when an ear canal infection causes the ear drum to rupture, allowing infection into the middle ear. The ear drum then "regrows" as the ear canal infection is treated. This is especially common in cats that have polyps. In these cases the bony wall of the bulla is opened surgically either from the side or from under the neck to gain access to the middle ear. Drains are placed to evacuate the infection. This procedure is known as a *Bulla Osteotomy* (Fig. 3).

TOTAL EAR CANAL ABLATION AND BULLA OSTEOTOMY

More severe infections require a more involved surgery called a *Total Ear Canal Ablation and Bulla Osteotomy* (Fig. 4). Preoperative radiographs of the skull are generally recommended to assess changes that have taken place in the bony portion of the ear. The infected tissue and entire ear canal are removed. The bony portion of the ear (bulla) is opened to remove all of the infectious tissue from around the hearing apparatus. Bacterial cultures are obtained so that the infection may be treated with the appropriate antibiotics. On occasion, biopsies may be indicated to identify abnormal tissue in the ear. Drains are placed to encourage healthy tissue growth without abscess pocket formation.

This surgery is usually successful in alleviating the painful, debilitating chronic ear infections as they cannot recur once the ear canal has been removed. Fortunately, hearing loss, which is directly related to the severity of the infection within the middle ear, is not always associated with this surgery. Dogs frequently retain some degree of hearing capacity, even without ear canals, and are much more comfortable.



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OPERATIVE REPORT

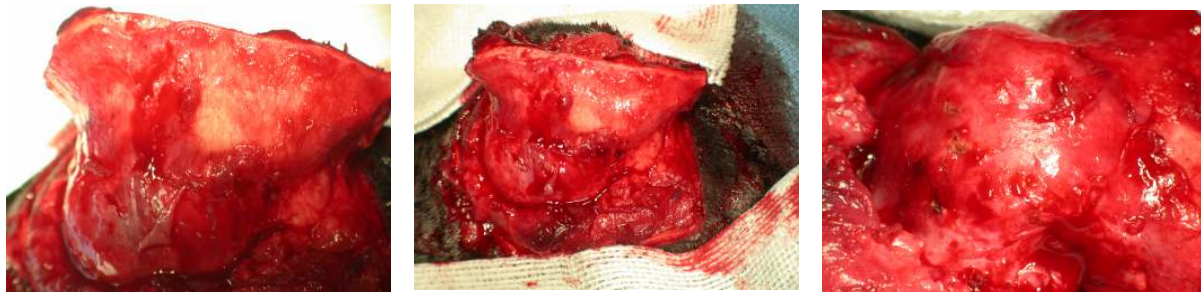
Case No: 9983
Ref Vet: Dr. Eardrum
Patient: Rhett
Date: 8-3-06

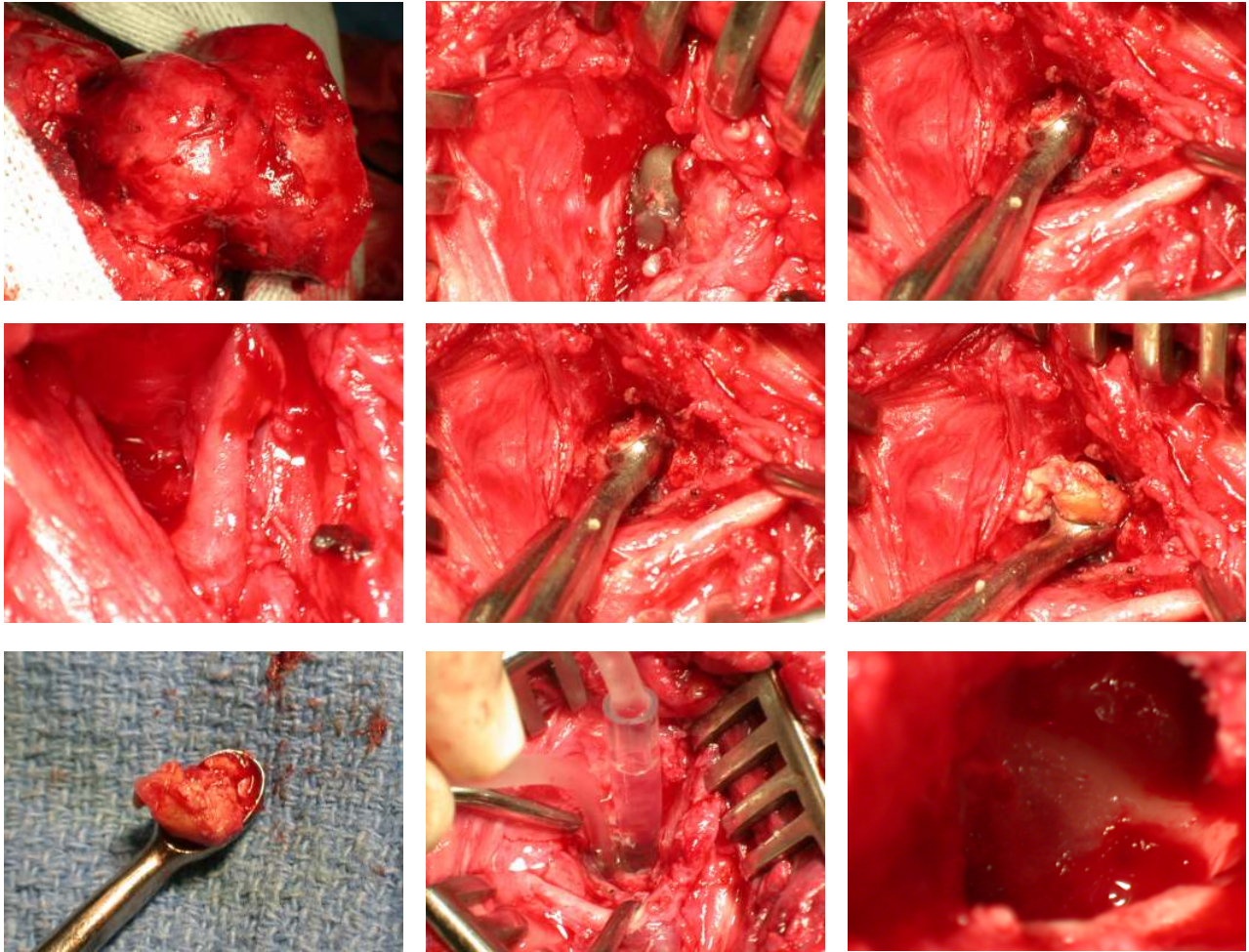


Pre Op Dx: Chronic ear infections of the right ear canal. Numerous C/S have been performed but infection still persists. Ear has a severe odor and infection with drainage. o ok'd ear ablation and bullae osteotomy. Note the large amount of coli-flower like tissue proliferation. Ear canal is extremely swollen and protruding dorsally. Mandibular lymph node just ventral to ear canal is enlarged and will be removed for histopath.

Operation in Detail:

The dog was placed in left lateral recumbency. The right side of the face and ear were clipped and surgically prepped. A horizontal skin incision was made dorsally above the vertical canal and incising the cartilage along the incision. The incision extended ventrally along the vertical canal to the level of the horizontal. Blunt dissection and careful incisions along the vertical canal were performed on all sides of the V & H canals. Care was given to avoid the major auricular vessels and the facial nerve. The swelling and extensive scar tissue made this dissection very difficult. The f.n was identified and retracted. The annular cartilage was sharply amputated from the petrous temporal bone and the entire ear canal was removed. Remnants of the ear canal cartilage were removed with rongeurs. The bullae was entered and cultured. There was LARGE amounts of casseous exudates throughout the bullae. The bullae was curetted and flushed, and suctioned multiple times. Curettage was also performed to remove the inner lining of the secretory epithelial layer of the short osseous external auditory canal. The bulla ventrally was removed. The area was flushed several times with warm saline. The lymph node ventral to the horizontal canal was removed for histopath along with the other tissues.





Closure of the subcutaneous tissue was with 2-0-PDS in simple interrupted patterns. The skin was close with 2-0-PDS simple interrupted. A bandage was placed.



Post Operative Care: Change bandage in 48 hours. Most likely Rhett will have a temporary horner's syndrome and lateral nystagnus. There amount of dissection required to remove this will have inflamed the nerve as well as the balance apparatti. The blood supply to the ear flap may be compromised and the ear flap may need to be removed in necrosis occurs. Take samples to Dr. Russell for culture and pathology within 24 hours.



Recheck in 2 weeks. We will keep Rhett on antibiotics as discussed.. Please call if you have any questions or problems.

Mitch Rosenzweig, DVM