

Total Ear Canal Ablation and Bulla Osteotomy

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Diseases of the Ear Canal: The most common condition of the external ear canal that can require surgery is recurrent and severe **otitis externa**. This is when the epithelial lining of the ear canal develops deep infections resulting in pain and inflammation, malodorous ears and discharge that is difficult to remove from the canal with simple cleaning solutions. Recurrent infections can result in the epithelial lining becoming so thickened and irregular it clogs the opening of the ear causing hearing loss and further preventing resolution of the infection. If attended to early on in the process many ear infections can be treated and recurrence controlled with conservative medical therapy. However some breeds (e.g. Cocker spaniels) are predisposed to otitis or your pet may have allergies or structural problems (e.g. polyps, tumors or narrow canals) that also result in persistent or recurrent infections.

Anatomy of the Ear Canal: The ear canal is composed of the external, middle and internal regions. The **pinna** is the skin covered cartilage flap that either covers the opening to the external canal or stands upright above it. The **external ear canal** is made of two cone shaped cartilaginous funnels (the vertical and horizontal cartilages) that travel down to the **tympanum** (ear drum). The **middle ear** is a small space that connects to the **tympanic cavity (bulla)** just below the tympanum. The **inner ear** is comprised of the auditory cartilages and vestibular system that transmit sound waves to the brain.

Surgery of the Ear Canal:

Total Ear Canal Ablation (TECA): The entire external canal is removed to the level of the ear drum. It is often combined with a bulla osteotomy to resolve chronic infections. Risks include abscessation due to infected tissue being left behind, hemorrhage and facial nerve injury. The majority of dogs and cats show a marked improvement in comfort level and activity after TECA because the source of the pain and inflammation is gone. The ear flap (pinna) is not removed but may droop slightly in dogs or cats with upright ears.

Bulla Osteotomy: For infections of the middle ear. The bone of the lateral or ventral bulla is removed along with infected tissue within. **Ventral BO is performed in young cats with ear polyps that grow within the bulla and extend into the ear or over the palate.** The polyp originates in the bulla (Fig3 region A). Risks include temporary or sometimes permanent injury to the facial nerve, in lateral osteotomy. Horner's syndrome and vestibulitis or head tilt can occur after ventral bulla osteotomy in cats.

Fig 1. Anatomy

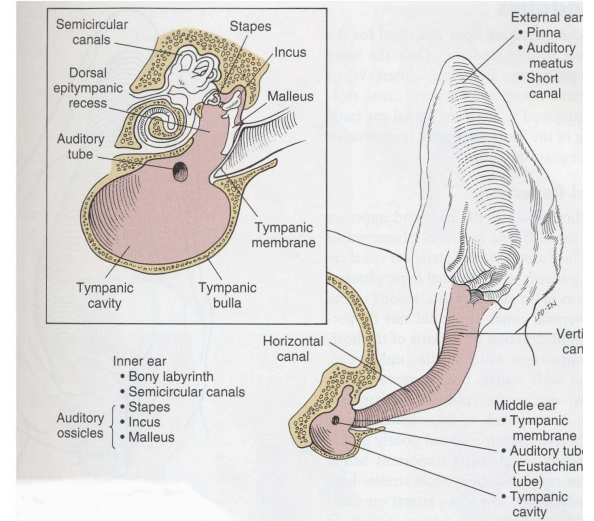


Fig. 2 Total Ear Canal Resection

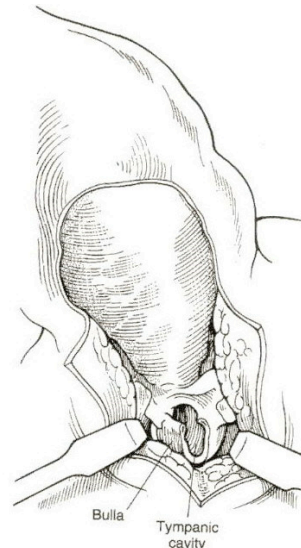
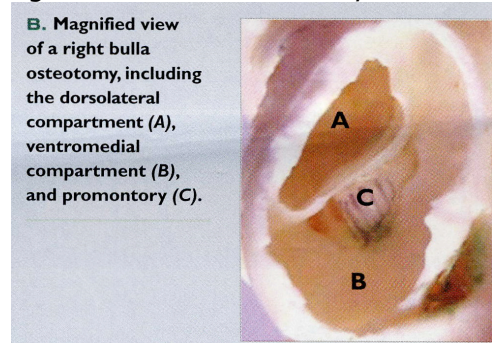


Fig 3. Ventral bulla osteotomy



Illustrations are reproduced from the following sources:

Image 1 and 2: Fossum TW. Small Animal Surgery. 2nd ed. Mosby St Louis, 2002

Images 3: Smeak DD, Inpanbutr N. Lateral Approach to Subtotal Bulla Osteotomy in Dogs. Compendium pp 377-384,2005