

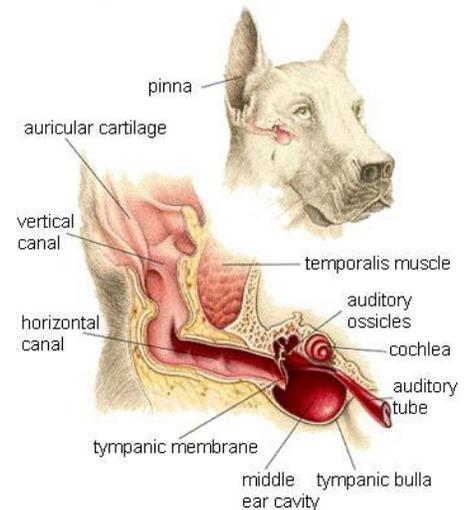
Total Ear Canal Ablation and Bulla Osteotomy

Total ear canal ablation is the removal of the entire external ear canal. The most common reason to have this procedure performed is for chronic ear infections that have not responded sufficiently to medical management. However, it is also performed because of anatomical defects of the ear canal, or for tumors that involve the ear canal.

Anatomy of the Ear

The external ear canal of the dog or cat is a cartilage tube with a vertical portion and a horizontal portion. People only have a horizontal component to their ear canals. The ear drum (tympanic membrane) separates the external ear canal from the middle ear. The middle ear, called the tympanic bulla, is a bony cavity that is a part of the skull. The internal ear consists of the auditory nerve and balance mechanism, and is located in a small bony tunnel that leads from the middle ear to the brain.

(Anatomical drawing courtesy of Hill's Pet Nutrition)



What diagnostic tests need to be performed prior to surgery?

Most patients undergoing a total ear canal ablation have blood tests to check for any other underlying health conditions that may increase the risks of an anesthetic procedure. Depending on the underlying cause for the ear disease, X-rays of the skull and/or chest may also be performed to assess the extent of the condition. A deep ear exam is also performed under general anesthesia to be sure that a total ear canal ablation is the appropriate surgical procedure for the patient.

What does the surgery entail?

In this procedure, the entire external ear canal (both the vertical and horizontal portions) is dissected out and removed. Once this has been performed, a hole is made into the middle ear cavity. This procedure is called a bulla osteotomy. A bulla osteotomy is always performed when doing a total ear canal ablation so that any inflammatory debris and the lining of the middle ear canal can be removed. If it is not performed, the lining tissue will continue to secrete material which will lead to formation of an abscess. Following the bulla osteotomy, the tissues are flushed with a saline solution and the incision is closed.

What will the recovery period be like?

After surgery, most animals will generally stay one night for observation and pain management. After discharge from the hospital, the animal will require two weeks of exercise limitation, including confinement to a small space for cats and leash walks only for dogs. It is normal for the surgery site to have some bruising and swelling. Hot-packing the area 3-4 times daily will help this subside. Two weeks after surgery, the skin sutures will be removed. Some animals require sedation for this as the convolutions of the ear surface can make suture removal tricky.

What are the possible complications of the surgery?

As one might expect, infection is a possible complication. Oftentimes, the ear tissues are contaminated with bacteria as any ear surgery is not a sterile procedure. Therefore, animals are placed on an appropriate antibiotic both during and after surgery.

The facial nerve is a nerve that supplies the muscles of facial expression. The nerve courses very closely to the horizontal ear canal. During the procedure, every effort is made by the surgeon to identify and protect the nerve. However, if the nerve is inadvertently traumatized, the animal may have some weakness of its facial muscles, including its ability to blink. Usually this is a transient problem that improves over 2-4 weeks. However, in some rare instances, it is a permanent condition.

If a portion of the secretory lining of either the external or middle ear is inadvertently left behind, the animal will likely form an abscess which will require a second surgery to find the offending tissue. This occurs only rarely and is more often associated with surgeons having less experience with the procedure.

The inner ear with its balance mechanism is in close proximity to the middle ear. If enough irritation occurs during the bulla osteotomy, the inner ear can be affected, resulting in some dizziness and balance issues. Again, this is usually a transient problem which resolves on its own.

As with any surgery, there is an anesthetic risk. Anesthetic complications are rare, however, and risk is minimized by the use of the safest practices in anesthesia choice and extensive monitoring.