



## Ventral Bulla Osteotomy

(Other terms also used: Inflammatory Polyp, Bulla Osteotomy, Ventral Bulla Osteotomy, Middle Ear Polyp, Polyp, Pharyngeal Polyp, Throat Polyp)

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 canal by flushing. However, if the drum has subsequently healed, it must once again be perforated before infected tissue 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 retains the eardrum and hearing while allowing for thorough cleaning of the middle ear.

**" The most common condition requiring bulla osteotomy is inflammatory polyps in cats"**

The surgery involves making a small opening in the neck to gain access to the bulla and removing the bottom of the bony canal along with all infected material in the middle ear. The diseased tissue is studied to identify the bacteria or yeast that have caused the problem. Appropriate antibiotics can then be prescribed to cure the infection. Rubber tubes are left in the neck for approximately two weeks after surgery to allow any residual infection to drain.

**Signs of a diseased middle ear cavity (bulla) and inner ear**

**"Clinical signs vary, but usually include discharge from the ear and scratching at the ear."**

1. Scratching or rubbing the ear
2. Discharge coming out of the ear
3. Loss of appetite
4. Malaise

## 5. Vestibular signs

- Tilting of the head toward the affected ear
- Walking in circles toward the affected ear
- Nystagnus - eyes shift back and forth
- Incoordination or inability to walk

## 6. Horner's syndrome

- Third eyelid covers eye
- Pupil becomes smaller than the opposite normal eye
- Slight drooping of the upper eyelid

## 7. Facial nerve paralysis is uncommon with middle ear problems, but occasionally is seen in dogs

- Sagging of lips and face on side affected
- Drooling from affected side due to lack of control of lips
- Inability to blink eye on affected side

## 8. Pain upon opening the mouth - due to inflammation of the joint of the jaw (TMJ)

## 9. Breathing difficulty or snorting due to

- Discharge draining into the back of the throat via the auditory tube
- Extension of a polyp from the the middle ear into the back of the throat

### **Potential disease conditions in the bulla**

- Inflammatory polyps - most common in cats
- Cancer
- Infection (Otitis media)
- Foreign body

### **Inflammatory polyps in cats**

- The cause of polyps is unknown; however, it is suspected that cats develop them because of reaction to infectious agents such as respiratory viruses.
- Feline leukemia virus or Feline Immunodeficiency virus may suppress the immune system, resulting in chronic infection that leads to polyp formation
- Ear polyps are commonly found in the younger cats, malignant tumors are more common in older cats
- A polyp is rooted in the middle ear cavity and grows until it ruptures the ear drum, then it continues to grow out of the ear canal
- Some inflammatory polyps will grow through the Eustachian tube (auditory tube) and appear as a mass in the back of the throat
- Removal of the polyp by plucking it out of the ear canal is about 50% successful

· **"Bulla osteotomy involves opening the middle ear to remove the offending polyp."**

- Unfortunately, the base of the mass cannot be removed by traction in half of cats, and the mass will regrow. Therefore, removal of the base of the mass through a ventral bulla osteotomy (opening up the bony middle ear) is often performed to ensure there is no recurrence

Although nasopharyngeal polyps can occur in any age cat, they are often seen in young adult cats. **At first the cats will have no clinical signs**, unless drainage from the middle ear is blocked. When the polyp becomes large enough, cats may develop signs, such as

- sneezing
- nasal discharge
- gagging
- voice change
- difficulty breathing

If the middle ear drainage is blocked, or if the polyp grows up into the ear instead of the throat, cats will have signs of Otitis externa (ear infection) with drainage from the ear, head shaking and changes in the shape of the pupils of their eyes.

#### **Diagnostic tests**

- Blood work - Complete Blood Cell Count and Chemistry Profile
- Cats only - Feline Leukemia and Feline Immunodeficiency Virus tests
- Culture of fluid from the ear or bulla
- Biopsy of tumor if present
- Radiographs (x-rays) of the bulla
- CT scan of the bulla is the most diagnostic test to see the internal structure of the bulla and extent of tumor invasion

#### **Surgical Procedure**

- An incision is made on the underside of the neck, just behind the jaw bone
- The bulla is exposed and is opened
- If only infection is present, the lining of the bulla is removed and the area is flushed with saline solution
- If present, the tumor or polyp is moved

#### **Potential complications after surgery**

##### **Cats**

- Recurrence of inflammatory polyp - 80% cure rate with surgery
- Vestibular signs - uncommon and usually resolves with time
- Facial nerve paralysis - uncommon
- Persistent infection

- About 80% of cats develop Horner's syndrome after the surgery, **this can occur following removal of a nasal pharyngeal polyp, removal of a polyp from the ear canal, or removal of a polyp via ventral bulla osteotomy.**  
**"Dog have same potential complications as cats, but Horner's Syndrome is uncommon."**

**Dogs** that already have vestibular signs, such as a head tilt may have permanent damage to the balance organ, and surgery may not correct this problem; the goal of this surgery is to relieve the infection so that the equilibrium (sense of balance) does not get so bad that the dog is unable to walk

### **Prognosis**

Prognosis usually is good following surgery.