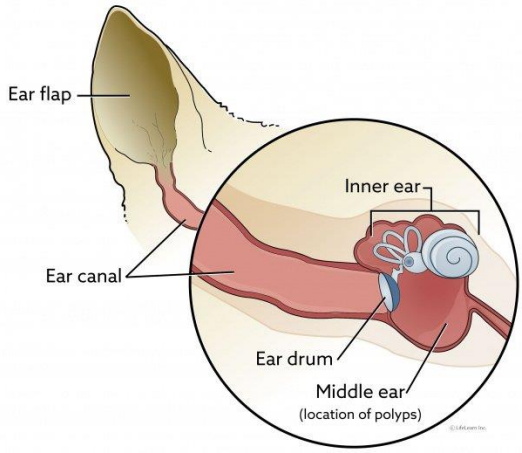
Nasopharyngeal Polyp, Inflammatory Polyp, Ventral Bulla Osteotomy	Nasopharyngeal polyps are pinkish-white masses that develop in the middle ear, which is the compartment just behind the eardrum. As the polyp enlarges, it can grow down the eustachian tube (the tube that connects the middle ear to back of the throat) or it may grow through the ear drum into the ear canal, and in some cases it will grow in both directions. The cause of polyps is unknown. In cats, inflammatory polyps are suspected to develop in reaction to infectious agents such as respiratory viruses. Inflammatory polyps are most commonly seen in cats but can occur in dogs. In dogs, inflammatory polyps typically extend into the ear canal rather than into the back of the throat (nasopharynx).  Image of the anatomy of a cat or dog ear.

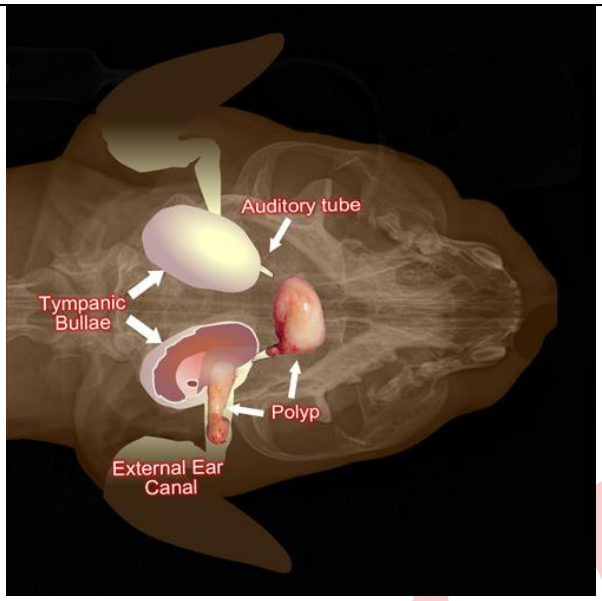


Image demonstrating the position of a nasopharyngeal polyp and external ear canal polyp.

Signs and Symptoms: Nasopharyngeal polyps are most commonly seen in young cats. As a polyp continues to grow, it may partially block the cavity at the back of the mouth and the following signs may occur:

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

If the polyp has extended into the external ear canal, blocked drainage of the middle ear, or affected the inner ear then the following signs may occur:

- drainage/discharge from the external ear canal
- head shaking
- head tilt, loss of balance
- anisocoria (different size pupils)

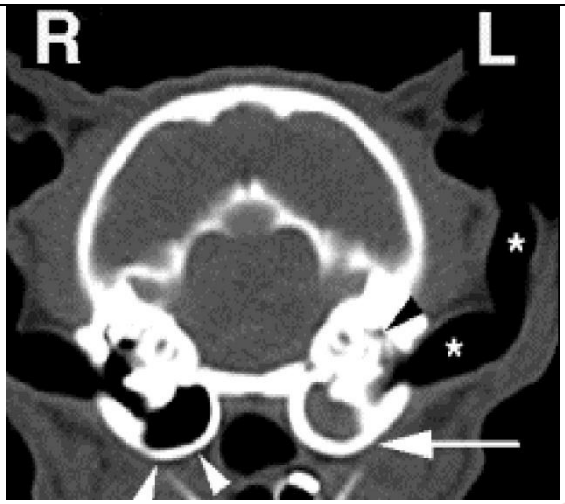
Diagnosis: The presence of a polyp may be made by oral-pharyngeal examination and otic examination under sedation. Some polyps are seen in the back of the mouth during an oral examination or hidden behind the soft palate. In cats with nasopharyngeal polyps growing out through the ear canal, the polyps may be visible on otic examination of the ear canal and eardrum.

Image of an oropharyngeal examination of a cat with the nasopharyngeal polyp at the tip of the instuments.

Advanced diagnostic imaging is often recommended to determine the extent of disease. Diagnostic imaging may include:

- Radiographs (X-rays) of the head
- Video endoscopy of the oropharynx
- CT scan of the head
- Magnetic Resonance Imaging of the head

Radiograph of the head of a cat with arrows pointing to a nasopharyngeal polyp.



CT scan of the head of a cat with the arrow pointing to the left middle ear with a middle ear polyp inside the middle ear cavity. Notice the arrow heads pointing to the right middle ear that is clear/empty.

Treatment: Nasopharyngeal polyps can be removed within the oropharyngeal cavity by gentle steady traction on the mass, however, the base of the mass typically is not removed with this treatment and the mass will regrow. To treat and prevent recurrence of the polyp, a surgical procedure called a ventral bulla osteotomy is performed to remove all of the mass and its base. Dogs and cats with involvement of the external ear canal may be treated with total ear canal ablation procedure and lateral bulla osteotomy.

A ventral bulla osteotomy is a procedure which removes the lower portion of the tympanic bulla (middle ear bone). It is accomplished by making an incision on the underside of the neck, just behind the jaw bone. The tympanic bulla is exposed, opened, and fluid, polyp/mass, and the lining of the tympanic bulla are removed and the cavity and region are flushed with sterile saline. The incision is commonly closed over a temporary drain. The middle ear is usually cultured when first opening it and the mass is submitted for biopsy.

Complications can occur with ventral bulla osteotomy. The most common postoperative complication in cats is Horner's syndrome which is apparent by a noticeable difference in the pet's pupil size and prominence of the third eyelid. Horner's syndrome usually resolves gradually over several weeks and does not adversely affect the pet's behavior of function. Most postoperative complications are temporary. Potential complications may include:

- Horner's syndrome
- Head tilt

- Balance
- Recurrence of the polyp (rare after ventral bulla osteotomy)
- Facial nerve paralysis resulting in a lack of ability to blink the eye
- Hemorrhage (bleeding)

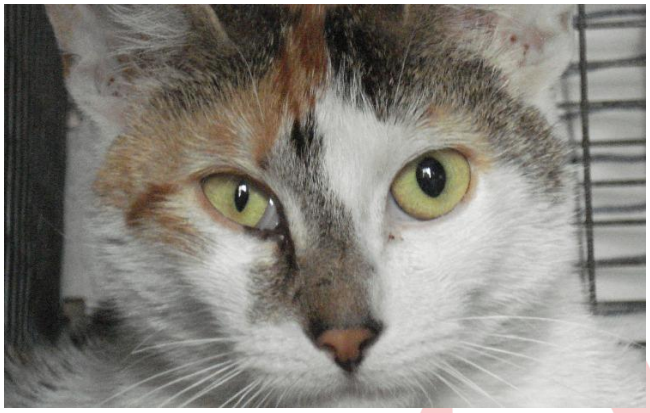


Image of cat with Horner's Syndrome. Notice the eye pupil asymmetry and prominence of the cat's right third eyelid.

Postoperative care: Pets having a ventral bulla osteotomy will be discharged with an oral pain medication and commonly an oral antibiotic. An Elizabethan collar is recommended to be worn for approximately 2-3 weeks based on healing, to prevent the pet from rubbing and scratching the incision. An artificial tears eye lubrication will be dispensed if the patient has impaired ability to blink the eye.

Prognosis: Recurrence is common after simple extraction of the polyp. Recurrence of the polyp is uncommon after ventral bulla osteotomy surgery. Cats treated with a ventral bulla osteotomy for inflammatory nasopharyngeal and external ear canal polyps have a very good prognosis.