

Otitis externa and Otitis media in Dogs

Inflammation of the Middle Ear and External Ear Canal in Dogs

Otitis externa is a chronic inflammation of a dog external ear canal.

Otitis media, is an inflammation of the dog's middle ear.

Both of these terms are used to describe clinical symptoms and are not diseases in themselves.

- Otitis externa often results when a change in the normal environment of the ear canal causes the glands lining the canal to enlarge and produce excessive wax.
- Gradually, the outer skin (epidermis) and the inner skin (dermis) produce excessive fibrous tissue (fibrosis) and the canal becomes narrowed.

It is normally a secondary symptom of another underlying disease, such as an infection.

- Otitis externa causes pain, itching, and redness, and when the condition is chronic, it often results in a ruptured ear drum (tympanum) and otitis media.

Otitis media typically occurs as an extension of otitis externa, causing a ruptured membrane (tympanum) that separates the external ear and the middle ear.

1- Otitis externa and otitis media affect dogs and cats of any age and breed,

but long-eared dogs, such as spaniels and retrievers, and dogs with hairy external canals, such as terriers and poodles, are more susceptible.

Causes

Otitis externa and otitis media can be caused by a variety of things.

The primary causes of ear infection include:

1. Anatomy

Certain dogs are especially susceptible to ear infection due to their heavy, pendulous ear flaps. The ear flaps trap warm air, debris and moisture, creating a perfect environment for germs to

grow. Spaniels, Basset Hounds, and Retrievers are notorious examples of flop-eared dogs prone to ear problems.

2. Environment

Frequent swimming, exposure to plants and pollens, time spent in wooded areas where plant awns or burrs can get lodged in the ear, or simply the humid heat of summer can set the stage for ear trouble.

3. Allergies

Itchy, infected ears are a classic sign of allergic skin disease in dogs. In fact otitis may be the first and only sign. What starts out as a simple ear infection often becomes a chronic problem until the underlying allergy is addressed.

4. Parasites

Otodectes, or ear mites, are less common in dogs than cats. Ear mites cause inflammation, copious discharge, and an intense itch that can lead to self trauma and secondary infection. Luckily they're easy to treat with proper veterinary care.

5. Foreign bodies

Plant awns or plant "stickers" can get lodged in the ear and cause intense itching, scratching, and secondary infection.

6. Tumors

Infected tumors inside the ear trap moisture and debris and are the perfect place for germs to grow.

7. Other medical conditions

Hormonal imbalances such as hypothyroidism and generalized skin disorders including seborrhea, can spark inflammation that leads to otitis externa.

Other factors that may contribute to the onset of the inflammatory conditions include:

- 1- bacterial infections, . ***Staphylococcus intermedius*** is the most common bacterial infection. A more serious ear infection, with pus in the ear, may be caused by ***Pseudomonas aeruginosa***
- 2- mixed infections caused by bacteria and fungal species, ***Malassezia pachydermatis*** is a common fungal agent for ear infections in dogs
- 3- and progressive changes in the environment of the outer ear canal.
- 4- Excessive moisture caused by swimming, or overzealous, abrasive, and improper ear cleaning may also lead to otitis externa and otitis media.

Symptoms and Types

The most common symptoms of otitis externa and otitis media are:

- 1- pain, head shaking, scratching at the external ear flaps, and bad odor.
- 2- In a physical examination , a dog with the condition may exhibit redness and swelling of the external ear canal, scaling skin or obstruction of the ear canal.
- 3- Signs such as tilting the head, anorexia, uncoordination, and occasional vomiting may indicate the development of otitis media, or otitis interna, if the infection and inflammation spreads to the inner ear.

Diagnosis

These two conditions can be diagnosed in several ways. For instance,

- 1- X-rays may be used to diagnose otitis media;
- 2- an magnetic resonance imaging (MRI) may also be used to identify an accumulation of fluid or soft tissue growth in the middle ear.

Other ways of diagnosing these conditions include:

- 3-skin scrapings from the dog's ear flaps to test for parasites,
- 3- and skin biopsies to check for autoimmune diseases.

However, the single most important tool for diagnosing otitis externa and otitis media is a microscopic examination of the ear discharge (aural exudate).

Treatment

Treatment is usually by a dual regimen of ear cleaning and ear medication.

1-Ear cleaning should be demonstrated by a veterinarian, due to the risk of pushing infected material deeper into the ear.

The aim of cleaning is to remove any byproducts of the infection which lead to further irritation and discomfort, and may be in turn, causes of further infection. Good care often involves cleaning the ear daily, to prevent build-up and bring the infection under control.

Cleaning of the ears is very important for treatment of ear infections. Cleansing and antiseptic mixtures are made from isopropyl (rubbing) alcohol, boric acid and acetic acid (vinegar) in various proportions. In some recipes, povidone-iodine (betadine) is added as well.

2-Ear medications are applied after cleaning and drying, and is usually in the form of ear drops or ointment applied daily or twice daily for one or two weeks.

The type of infection must be identified by the veterinarian by examining a sample of ear exudate under a microscope, since bacterial infection will only respond to antibiotics, fungal infection to a fungicide,

- and ear mites to an insecticide. Treatment for ear mites include ear drops that contain pyrethrins or an avermectin such as ivermectin or selamectin.

--3 In more severe cases, oral antibiotics, antihistamines, or even oral steroids may be needed to get infection and inflammation under control.

Complications and Treatment of Otitis Externa (Overview)

When ear infection continues over weeks and months, numerous complications can arise. Some are irreversible. They include:

1. Chronic changes

Years of infection and inflammation take their toll. Scarring and swelling causes the ear canals to close down, trapping fluid and debris worse than before. In time, the ear canals can literally solidify with hard-as-bone scar tissue. Major corrective surgery is often the only recourse at this point.

2. Ear Hematoma

Violent head-shaking from an intensely itchy case of otitis externa can actually injure the ear flap, breaking blood vessels below the skin surface. The result is an ear hematoma, or “pillow ear.” Ear hematoma is not painful, but should be treated promptly to reduce the chance of a disfigured ear flap. Treatment is surgical, and involves draining the fluid from the hematoma and using special sutures to tack the earflap flat again. veterinarian will also strive to identify and treat the itch-inducing ear problem, lest the hematoma recur.

3. Middle & inner ear infection

The external ear canal is separated from the middle ear cavity and inner ear (cochlea) by a thin fibrous membrane – the ear drum. Severe or ongoing otitis externa can actually rupture the eardrum. Once the eardrum is breached, it's not long before yeast and bacteria set up shop in the area of the middle and inner ear. Symptoms of middle and inner ear may include the following:

- o Dizziness, Tilting of the head to one side
- o Circling ,Poor balance, Uneven pupils
- o Strange rhythmic eye movements, Pain on opening the mouth
- o Loss of hearing

Prevention

Prevented

- Check dog's ears regularly for abnormal discharge, odor and/or redness .
- If dog's outer ear appears dirty, clean gently with a cotton ball dampened with a solution suggested by veterinarian.
- the veterinarian can make recommendations on how frequently should clean dog's ears.
- After baths and swimming, be sure to dry dog's ears thoroughly.

dog has excessive hair in the outer ear canal, it should be removed. A groomer can do this.

Ear infections can be very painful and if left untreated can harm both the ear canal and middle ear.