[ INSERT YOUR AD HERE PLACEHOLDER ]
Pet ears come in many sizes and shapes. Some are big and floppy, others are smaller and pointy. One thing they all have in common is the potential for an ear hematoma to develop. Although ear hematomas can occur in any dog and even in cats, they are most common in dogs with floppy ears.

Dogs often shake their heads, especially when they are wet or when the ear is irritated, such as with an ear infection. As the ears are shaken back and forth, blood vessels in the flap can rupture, causing bleeding under the skin. Hematomas can also be caused by ear bites or other forms of trauma, such as striking the flap against something (e.g., a coffee table) while shaking.

The bleeding in the ear flap is irritating, which causes your pet to shake its head even more, setting up a vicious cycle. Blood and other fluid can continue to accumulate in the ear flap, and the swelling can reach the size of a lemon in some cases. Sometimes, the hematoma will rupture during a shake, spewing blood in all directions.

Any swelling in the ear flap suggests a hematoma. The swollen area usually feels warm and squishy, like a bag of fluid. Your veterinarian will examine the ears for signs of any problems that may have set off head shaking, such as an ear infection or a bite wound. If an ear hematoma is not treated, the ear flap can eventually scar up, resulting in a deformed ear that may be prone to infections.

Although your vet can drain the fluid out of an ear hematoma with a syringe, the problem almost always returns and more extensive treatment is needed. Many treatments are used, including surgery to open the hematoma, or insertion of a temporary drain that will continue to allow fluid to escape. Often, the ear flap is bandaged alongside the head to allow it to heal. Your vet will discuss the various treatment options and what is best for your pet.
THE EAR FLAP

The ear flap, also known as the auricle or pinna, is what most people think of as the “ear.” This is the part that sticks out from the head and guards the external auditory canal (ear canal) that leads to the eardrum.

The auricle is shaped like a funnel, wide open at one end to receive sound, and narrower and rolled up to form a tube at the other end where sound is concentrated. The tip of the flap is called the apex, and the outer edge is known as the helix.

A complex set of auricular muscles attached to the skull control ear movement. These muscles allow the right and left auricles to be voluntarily turned toward the source of sound. In fact, your pet can turn each ear independently to focus on separate sounds, without needing to turn its head.

The ear flap gets its shape from supporting auricular cartilage. This cartilage lies within a sleeve of skin that is tightly stretched over its surface. Blood vessels that lie between the cartilage and the skin provide oxygen and nutrients to the structures of the outer ear. The larger of these vessels are visible to the naked eye as lines just under the skin.

In many dogs and cats, the cartilage is sufficiently stiff to keep the auricle erect at all times. But some breeds of dogs (and certain other animals) have relatively soft cartilage that allows the flaps to collapse like pot covers. Even so, most dogs can prick their ears and make them turn to the source of sound as needed.

Anatomy of the ear flap
An ear hematoma is essentially a blood blister under the skin of the ear flap. The initial bleeding within the flap is caused by trauma to the ear from scratching, a bite wound, or blunt injury (as when a shaken ear hits a coffee table). Bleeding is exacerbated by chronic head shaking that drives blood into the ears via centrifugal force.

Underlying Causes That Predispose To Ear Hematoma

- Ear infection (otitis externa)
- Allergy
- Ear mites
- Bite wounds
- Blunt trauma (e.g., striking the ear against a surface during shaking)
- Excessive ear moisture (e.g., swimming) or any other condition that promotes shaking

The hematoma appears as a large, fluctuant swelling between the skin of the ear and its cartilage. It is usually warm to the touch and may be painful when handled. Ear hematomas usually develop on just one ear but occasionally, a hematoma develops on both ears.
In most other locations, a blood blister is a relatively minor issue that goes away gradually without any complications. But an ear hematoma is more of a problem because the mechanics of head shaking promote continued bleeding that can greatly increase the blister to the size of a lemon. The hot, swollen ear becomes a source of constant irritation, scratching, and shaking, which exacerbates the problem. In some cases, swelling can be so severe that the hematoma breaks open during a shake, spewing the patient and surrounding area with blood. Eventually, the ear will scar as the blister heals, resulting in a permanently misshapen ear flap that inhibits ventilation of the canal and promotes ear infection.

**Ear Infection**

One of the most common underlying causes of hematoma is an infection of the ear canal, also known as otitis externa. This problem is very common in dogs and cats because they have deep ear canals that tend to trap moisture and wax, creating a warm and humid environment that is ideal for growth of bacteria, yeast, and mites. In addition, many dogs have floppy ears or hair growing inside the ear that closes off the canal, which further impedes ventilation and adds to the problem.

Pets with ear infections usually rub or scratch at their ears and frequently shake their heads. The inside of the ear is typically red, moist, and inflamed, and infected ears often have a bad odor.
severe cases, infection may spread through the ear drum into the **middle ear**, which can cause pets to lose their balance. Middle ear infections can further spread to the bone, requiring longterm therapy. Chronic ear infections can toughen and scar the ear canal, and sometimes surgery is required to open the passageway.

Your veterinarian will examine the ear canal with an **otoscope**. This instrument allows the vet to check the severity of the infection, look for foreign material (e.g., plant awns), and see if the ear drum is intact. He or she may also examine some material from the ear under a microscope to look for things such as ear mites and yeast cells.

Treatment begins with cleaning the ears, and anesthesia is sometimes needed to do a thorough job. Ear drops are usually prescribed to clear the infection and remove mites (if needed). Oral antibiotics are often needed if there is a middle ear infection.

Unfortunately, ear infections often recur without regular preventive care. Ears should be cleaned frequently (e.g., weekly), especially if your dog swims or goes in water often.

See the WebVet learning POD on ear infections for detailed information on the causes and management of this condition.
MANAGEMENT

Your vet will begin the management process with a history and physical to check for underlying problems such as ear infections or allergy. It may be necessary to draw some blood to rule out hormonal disorders (e.g., hypothyroidism) that can lead to skin problems.

Treatment of the hematoma involves drainage of the blood blister. This should be done as soon as possible to prevent blood from clotting into an organized mass that increases scar formation.

It is a relatively easy matter to drain an ear hematoma using a needle or by making a small incision. However, the blood blister almost always reforms as the puncture/incision heals and the ear continues to bleed into the pocket. So the trick of managing a hematoma is to keep the fluid draining during healing, so that the skin gradually reseals against the cartilage without forming a blister.

There have been various approaches explored for treating hematomas, with different vets claiming the one they are most familiar with or has given them most success. No approach is necessarily wrong or the best, but several have become popular, standard management techniques. All approaches require anesthesia and surgical prep of the ear.

Traditional Surgery
After your pet has been anesthetized, the vet will cut along the length of the hematoma with a scalpel blade, remove the accumulated fluid and blood clot, and then flush out the remaining pocket. To remove dead space and keep a new clot from forming, the skin is then tacked down in multiple places about 1 cm apart.

Mattress sutures are placed completely through the ear (skin and cartilage), so that suture thread shows on both the inside and outside ear surfaces. Usually, some form of stent or suture-spacing device such as drain tubing, buttons, or pieces of X-ray film are placed between the suture and skin on the outside of the flap. This spreads out the tension and prevents the suture from becoming embedded in the skin.

The ear is then bandaged to protect the area and absorb drainage. Once the lesion has healed up, which usually takes one to several weeks, the sutures are removed.

This technique is relatively invasive, so some vets reserve it for older hematomas in which the fluid has already been replaced by clotted blood and early scar tissue.
Diagram of the traditional surgical method for treating ear hematoma. The mattress sutures (arrow) are placed completely through the ear (bottom cutaway).

Cannula Technique
This technique relies on continual drainage of the hematoma as it heals gradually, so that the dead space is naturally removed without suturing.

The vet will make a small incision, often near the apex of the ear. He or she will express any blood and then flush the remaining pocket to remove clotted material.

Next, the vet inserts a cannula that is used in large-animal medicine to keep cow teats open. This tube maintains a temporary passage that allows fluid to continually leave the pocket. In some cases, a piece of tubing is used rather than a cannula to keep the pocket draining.

The ear is left unbandaged to drain over several days to weeks. Usually, the amount of drainage lessens over time.

When the hematoma appears resolved and the layers of tissue are healed together, the teat cannula (or drain tube) is removed by gently wiggling it out of the incision. Any small remaining hole is left to heal on its own.
A teat cannula (B) can be inserted into the hematoma (A) to allow continual drainage. A rubber or plastic drain tube (C) can be used instead. Source: Fossum, Theresa Welch. Small Animal Surgery, 4th Edition, Elsevier, 2013.
Photographs showing a teat cannula placed in ear hematomas.
**Suction-Drain Technique**

This technique works on the same principle as the cannula method, but with a twist. Whereas the cannula allows passive drainage, the suction drain uses vacuum pressure for active drainage.

Most often, a butterfly catheter is modified for this procedure. The hub on one end is removed, and the tube near that end is punched with tiny holes, so that fenestrated tubing is on one end and a needle on the other.

As with the cannula method, a small incision is made to express and flush the hematoma. The fenestrated end of the butterfly tubing is then inserted into the pocket and sutured into place. The area is then bandaged to form a seal, leaving the needle end of the catheter exposed so that it can be inserted into a [Vacutainer tube](#).

The Vacutainer tube provides constant suction and allows the tissue layers to adhere without fluid buildup. The tube is replaced every 12 hours until the fluid accumulation is 2 mL or less (usually 5–7 days). Then the apparatus can be removed.
The drainage from the hematoma gradually lessens over time.

Other Techniques
As mentioned previously, there are many other methods for dealing with an ear hematoma. Most are some variation of the versions already described, and all rely on long-term drainage that allows the ear to heal without forming a blood blister.

A couple additional methods are described below.

**Punch Biopsy Technique:** A biopsy punch is used to make one or several drainage holes that are left open to allow drainage during healing. These biopsy holes are not sutured closed and are allowed to heal by granulation.

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**Disposable 4-, 6-, and 8-mm biopsy punches.**
**Laser Technique:** A carbon dioxide (CO₂) laser is used to make several drainage holes over the hematoma. The holes created with the laser are allowed to heal by granulation.

A CO₂ laser being used to remove a small ear tumor.

**Bandaging and Other Treatments**
Most treatment methods require wrapping the ear against the head with a compression bandage for at least 5–7 days after surgery, at which time your vet will want to recheck the ear. It’s important that the bandage not be too tight so as to cut off circulation to the flap.

*Be sure to tell your vet immediately if a bandage seems painful or exudes a foul-smelling liquid. This may mean that the bandage is too tight and needs removal.*
In addition to bandaging, pets will need to wear an Elizabethan collar (or cone) until the surgical wound and hematoma heal. The cone physically prevents your pet from getting at the area while it heals.

Cat wearing an Elizabethan collar to protect its feeding tube.
MANAGEMENT

Your vet may prescribe other medications such as short-term corticosteroids and antibiotics to calm the inflammation and prevent secondary infections. It is also important to treat underlying conditions to remove the problem that led to the hematoma in the first place.

- Otitis externa is treated with ear cleaning and use of antibiotic, antifungal, and corticosteroid drops, as needed.
- Allergies can be treated using antihistamines and short-term corticosteroids.
- Hormonal problems such as hypothyroidism also need to be addressed.

See the WebVet POD on allergies for detailed information on this topic.

Follow-Up and Prognosis

Your vet will want to recheck the ear at intervals of at most 5–7 days. Sutures are usually removed in 10–14 days, but drains and collars may need to remain in place for several weeks.

Prognosis

Most hematomas resolve without complications after surgical drainage. But recurrence is common, especially if pets are allowed to dig at the ear, if the bandage or sutures are prematurely removed, or if underlying problems are not corrected.

Scarring and disfigurement usually develop if the hematoma is left untreated. In rare instances, disfigurement of the pinna can also develop after surgical drainage, especially if pets dig at the ear. Disfigurement is most noticeable in dogs and cats with erect ears.
# GLOSSARY FOR EAR HEMATOMA

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Biopsy Punch</td>
<td>A metal, rod-like instrument with a sharp cavity on one end and a blunt handle on the other. When driven against the skin, the sharp punch removes a small, round piece of tissue for biopsy evaluation.</td>
</tr>
<tr>
<td>Butterfly Catheter</td>
<td>A metal needle with flexible plastic “wings” and a short length of tubing. The wings assist in placement and facilitate fixation with tape.</td>
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<tr>
<td>Cannula</td>
<td>A tube for insertion into a duct or cavity</td>
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<tr>
<td>Carbon Dioxide Laser</td>
<td>One of the earliest and most medically useful lasers. Electric energy excites nitrogen molecules, which then transfer their energy to CO2 molecules that in turn generate a beam of infrared energy.</td>
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<tr>
<td>Cartilage</td>
<td>Rubbery tissue that cushions and protects the ends of the bones, and gives shape to structures like the ear and nose</td>
</tr>
<tr>
<td>Centrifugal Force</td>
<td>The pressure that results when something is spun around a central axis; this is the force that makes things fly off a spinning object.</td>
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<tr>
<td>Corticosteroid</td>
<td>A drug that mimics the hormones involved with controlling inflammation and swelling; these are sometimes referred to as steroids, but they should not be confused with the anabolic steroids used in body building.</td>
</tr>
<tr>
<td>Dead Space</td>
<td>A pocket or gap in tissue associated with wounds or surgery. Dead space is often closed with buried, absorbable suture material, so that fluid will not build up and impair healing. Alternatively, drains are used to maintain fluid outflow during healing.</td>
</tr>
<tr>
<td>Ear Canal</td>
<td>Trumpet-like tubes that direct sound to the ear drums</td>
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<tr>
<td>Ear Drum, or Tympanic Membrane</td>
<td>The thin, pearly layer of tissue between the middle and outer ear. Sound waves cause the ear drum to vibrate; these vibrations are translated into electrical impulses to the brain.</td>
</tr>
<tr>
<td>Ear Mites</td>
<td>Tiny, eight-legged parasites that can live in the ear canal of cats and dogs</td>
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<tr>
<td>Elizabethan Collar</td>
<td>A plastic cone placed around the neck of pets to physically prevent them from bothering skin lesions. These are so named because they are thought to resemble the high collars worn in Elizabethan England.</td>
</tr>
<tr>
<td>Granulation</td>
<td>The process by which open wounds heal by scar formation. The delicate new tissue that initially fills the wound is gradually replaced by fibrous scar tissue.</td>
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<td>Hematoma</td>
<td>A blood blister caused by bleeding under the skin or within an organ</td>
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<tr>
<td>Hypothyroidism</td>
<td>A condition in which the body has too little thyroid hormone, which controls metabolism</td>
</tr>
<tr>
<td>Mattress Suture</td>
<td>A surgical suturing pattern used for skin edges under tension. The needle goes into the skin, across the incision, and out through the skin on the other side; then inserted parallel to the incision and on top of the skin; then back through the skin, across the wound, and out to the surface again. This suture may be interrupted or continuous, vertical or horizontal, and direct or crossed.</td>
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<tr>
<td>Middle Ear</td>
<td>The part of the ear on the inner side of the ear drum; the middle ear contains tiny bones that carry the sound vibrations from the ear drum to nerve cells.</td>
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<tr>
<td>Otoscope</td>
<td>A clinical instrument consisting of a magnifying lens, light source, and cone for examining the ear canal</td>
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<tr>
<td>Stent</td>
<td>A device or mold of a suitable material used to provide support when tissues are sewn together</td>
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<tr>
<td>Vacutainer Tube</td>
<td>A commercial tube used for blood collection. The vacuum inside this glass tube provides steady suction so that blood readily enters once the rubber stopper is punctured by a needle.</td>
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<tr>
<td>Yeast</td>
<td>Microscopic, fungus-like organisms that can infect the skin and ear canals</td>
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