Don't Ignore This Condition — It Could Lead to Brain Damage

If your pet is one of these breeds, they could be born with it. Or it could show up later as a result of head trauma, a vitamin deficiency, tumor, or exposure to bacteria or viruses. Know the signs to watch for.

Reviewed by Dr. Becker

STORY AT-A-GLANCE

- Hydrocephalus, or water on the brain, means there's an abnormal accumulation of cerebrospinal fluid inside your pet's skull and brain
- Hydrocephaly is usually congenital, or present at birth, and is most often seen in toy breeds with dome-shaped heads, as well as certain small and brachycephalic breeds
- Depending on the severity of the condition, pets with hydrocephalus can display a range of symptoms from none at all, to significant learning disabilities, behavior problems and seizures
- In symptomatic pets, surgery to reroute excess fluid away from the brain is often recommended
- In pets with diagnosed hydrocephalus but no symptoms, an integrative approach can be ideal, as there are many nontoxic options available to keep these pets asymptomatic

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Hydrocephalus, which is also called water on the brain, is a condition in which there's an abnormal buildup of cerebrospinal fluid (CSF) inside the skull and brain.

CSF forms normally in the brain. The fluid circulates through parts of the brain and coverings, bathing and protecting them, and is ultimately absorbed into the circulatory system. Hydrocephalus occurs either because the body produces too much spinal fluid or more commonly, the brain can't regulate the fluid properly.

In animals with hydrocephaly, the fluid-filled spaces called ventricles within the brain eventually overflow with too much CSF. The brain swells and the increased pressure can damage or inhibit the development of brain tissue.

Causes of Hydrocephalus

Hydrocephalus is usually congenital, meaning the puppy or kitten is born with it, and it's referred to as primary hydrocephalus.

The condition is most often seen in toy breeds with dome-shaped skulls, as well as certain small and brachycephalic breeds, including the Maltese, Yorkshire Terrier, Pomeranian, Cairn Terrier, Toy Poodle, Boston Terrier, English Bulldog, Lhasa Apso, Pekingese, Pug, Shih Tzu and especially, the **Chihuahua**. In cats, the **Siamese** breed is predisposed to this condition.

Secondary hydrocephalus is acquired later in life, usually as the result of head trauma, a brain hemorrhage, vitamin A deficiency, brain tumors or exposure to certain drugs, chemicals toxins, bacteria or viruses.

Symptoms of Hydrocephalus

A pet with hydrocephaly often begins showing signs of an enlarged head within a few weeks of birth. In very young animals, the bones of the skull haven't yet fused together, which is why enlargement is possible.

Once the skull has grown to its final size, the cerebrospinal fluid continues to build, putting a tremendous amount of pressure on the brain and causing neurological symptoms that typically begin to show up around 8 to 12 weeks of age.

Puppies with hydrocephalus are often the runts of the litter, slower to learn than their siblings and they can be extremely difficult to housetrain. Because the brain is involved, these pets often seem mentally dull or stunted, disoriented and have significant learning disabilities.

There can also be excessive sleepiness and lethargy, as well as compulsive or erratic behavior, and even aggression. Other symptoms of hydrocephaly include seizures, head pressing, eyes that focus downward and outward, gait or movement abnormalities and blindness.

Depending on the severity of the condition, some pets with hydrocephaly show no obvious signs, while others have symptoms that slowly worsen over time.

The nature and severity of an animal's symptoms doesn't necessarily correspond to the degree of head enlargement or accumulation of cerebrospinal fluid. A pet with mild fluid buildup can have severe symptoms, while a pet with a significant accumulation of CSF may have only mild or no signs of the condition.

Diagnosing Hydrocephaly

Hydrocephalus isn't difficult to diagnose and is often based on the pet's appearance, history and symptoms, including behavior changes. Your veterinarian or veterinary specialist will want to perform a thorough neurologic examination, as well as standard blood and urine diagnostic tests.

If the hydrocephalus is not caused by an infection or other systemic disease, these test results will probably be normal. Skull X-rays may be needed to check for abnormalities associated with hydrocephalus.

A definitive diagnosis of hydrocephalus requires advanced testing, such as a computed tomography (CT) scan, magnetic resonance imagery (MRI) and/or electroencephalography.

In certain rare instances, a veterinary specialist might recommend taking a sample of an animal's cerebrospinal fluid in a procedure requiring general anesthesia.

Treatment Options

The treatment strategy for hydrocephaly is to decrease the amount of cerebrospinal fluid being produced, increase the amount of fluid being absorbed and/or surgically reroute (shunt) the excess fluid elsewhere.

The goal is to relieve the buildup of pressure on the nerves, blood vessels and other affected brain tissues, however, currently there is no effective long-term medical intervention that can increase the brain's ability to absorb fluid.

In the case of acute hydrocephalus, veterinarians sometimes prescribe medications to try to decrease the amount of CSF the body is producing until surgery can be scheduled. Anti-seizure medications may also be recommended. Unfortunately, drug therapy typically provides only temporary relief of symptoms.

If the decision is made to surgically shunt excess fluid away from the brain, there are several different techniques that can be used to accomplish the rerouting. Surgical treatment of hydrocephalus should be done only by a veterinary neurologist or soft tissue surgeon with plenty of experience in the procedure.

Your pet's treatment will depend on his symptoms, size, physical condition, and most importantly, the underlying cause of the hydrocephalus if it's a secondary condition and not congenital. If an animal has been diagnosed with hydrocephalus but is showing no signs of the condition, an integrative approach can be very beneficial. There are many nontoxic options available to keep pets asymptomatic.

These include **cannabidiol (CBD)** therapy, as well as intravenous (IV) antioxidants that cross the blood-brain barrier to help scavenge cerebral free radicals and maintain cognitive health, while also keeping patients comfortable and symptom-free for as long as possible.

If you have an asymptomatic pet with congenital hydrocephaly, it's strongly recommended that you partner with an integrative veterinarian as soon as possible to help maintain your pet's quality of life to the best of your ability.

The outlook for a pet with hydrocephalus depends on several factors. For animals with no or mild symptoms, and those in which the condition is secondary to a problem that can be identified and treated before significant brain damage occurs, the prognosis is good.

For an animal who is symptomatic or has congenital hydrocephalus with obvious neurologic symptoms and concurrent brain damage, the outlook is much less optimistic, which is why the sooner you are able to identify this major medical issue, the better your pet's outcome will be.