

Brain Tumors in Dogs

Dr. Justine A. Lee, DVM, DACVECC

Justine has more than 18 years of experience in the veterinary industry and is a board-certified emergency critical care veterinary specialist and toxicologist as well as the CEO and founder of Vetgirl. She is also founding member of IDEXX's Pet Health Network team.

Years ago, I lost my own personal [pit bull](#) to a fast growing brain [tumor](#). Unfortunately, in both human and veterinary medicine, brain tumors can result for no known reason. While genetics and environment may potentially have a role, the underlying cause for brain tumors is typically unknown. [Breeds](#) with "smooshed" faces such as [Boxers](#), [Boston terriers](#), and pit bull terriers are overrepresented with brain tumors.

While rare, the diagnosis of a brain tumor in a dog can be devastating to a pet guardian, as the onset of clinical signs is typically very rapid. Clinical signs of a brain tumor include:

- Aggression
- Altered behavior
- Decreased cognitive function
- [Hearing loss](#)
- [Blindness](#)
- Abnormal pupil size
- Acute [seizures](#)
- Constant or abnormal panting
- Inability to walk
- Walking drunk
- Circling in one direction

Diagnosis of a brain tumor

The diagnosis of a brain tumor in dogs typically starts with a [thorough physical examination](#) by your veterinarian (including a careful neurologic examination to look at the pupils, the response to light, the reflexes in the limbs, etc.). Additional tests to diagnose a brain tumor include:

- Baseline blood work to make sure the [kidneys](#), [liver](#), and other organs are working appropriately and to evaluate the white and red blood cells
- Chest [x-rays](#) to make sure there is no obvious [cancer](#) spread to the lungs
- A CT or MRI under general anesthesia to look

specifically at the central nervous system

Treatment of a brain tumor

Emergency treatment for a brain tumor is often necessary – that's because [dogs](#) often present with acute seizures secondary to a brain tumor. Unfortunately, slow growing brain tumors may encroach on the normal space of the brain. As the tumor gets bigger, it can cause pressure changes within the brain (e.g., cerebral edema), resulting in neurologic signs.

Specific treatment to stop the seizures include:

- Placing an intravenous (IV) catheter immediately
- Checking a blood sugar
- Using IV diazepam (Valium™) to stop the seizures
- Starting potent anti-seizure medications such as phenobarbital, Keppra™, or other drugs to stop the seizures
- Using medication to decrease the swelling within the brain (e.g., mannitol)
- Nursing care to help decrease [swelling](#) in the brain (e.g., elevating the head at a 15-30 degree angle, oxygen therapy, etc.)

So what are the options when it comes to treating brain tumors?

- **Euthanasia**— Some guardians would elect to euthanize immediately based on the severity of the clinical signs (e.g., seizures).
- **Medical management** — This includes using steroids (e.g., prednisone) to help reduce the swelling in the brain along with anti-seizure medications (e.g., phenobarbital, Keppra™). Unfortunately, this treatment only typically extends the lifespan of your dog by 1-2 months. While the steroids are very inexpensive and the anti-seizure medications only moderately expensive, both drugs have significant side effects such as increased thirst, urination, and appetite.
- **Traditional radiation therapy + chemotherapy** — Certain specialty veterinary hospitals and veterinary schools offer radiation therapy (RT). This requires daily [anesthesia](#) (only briefly for about a few minutes) to help

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irradiate the general location of the brain.

Typically, this occurs once a day, 5 days a week, for 3 weeks in a row. Unfortunately, the RT can zap healthy brain tissue also, potentially causing some rare side effects from RT.

- **Stereotactic radiation therapy (SRT)** — This requires a specialized type of RT that is only available in a few veterinary locations throughout the world. This requires brief anesthesia for 1-4 days in a row, and only zaps the tumor – not all the healthy brain tissue. Unfortunately, this is extremely expensive and typically costs \$8-10,000.
- **Brain surgery** — This is not quite as advanced as human medicine (which is often done while the person is awake and talking during the surgery). Brain surgery requires putting your dog under anesthesia, [surgically](#) removing the skullcap, having the tumor surgically "debulked" (which is a nice way of saying "scooped" out). This can also be costly, is cutting edge, and is typically only done by board-certified specialists in neurology or surgery (so not available everywhere). Unfortunately, rare side effects include altered mentation, worsening seizures, and surgical complications.

Prognosis of a brain tumor

Unfortunately, the prognosis varies depending on whether medical management, surgical management, or RT is chosen. The prognosis also varies with what "type" of brain tumor it is; however, it is often difficult to determine the exact "type" until surgery occurs (and a piece of tissue can be biopsied or analyzed). Some brain tumors such as meningiomas have a much better prognosis with brain surgery (to remove or debulk the tumor). Fast, invasive types of brain tumors such as glioma or glioblastoma have a poor prognosis, even in human medicine.

When in doubt, talk to your veterinarian and an oncologist or neurologist. Remember that making an appointment with an oncologist or neurologist doesn't commit you to a several thousand-dollar RT or surgical plan – it lets you weigh your options with those who have the cutting edge knowledge in that area.

Questions to ask your veterinarian

- Does my dog need a referral to a neurologist?
- How much is a CT or MRI?
- What are the side effects of the medications?

If you have any questions or concerns, you should always visit or call your veterinarian -- they are your best resource to ensure the health and well-being of your pets.