



Critters corner presents:

Medical Causes of Aggression In Dogs

Medically Related Aggression

Aggression in dogs is defined as a threat of harmful behavior directed at another animal or person. It may involve snarling, growling, snapping, nipping, biting, or lunging. A dog may act aggressively for either behavioral or medical reasons, or a combination of both. Here are some of the medical conditions that may contribute to or cause canine aggression.

Hypothyroidism

All veterinarians are aware of [hypothyroidism](#), a condition in which the thyroid gland produces less thyroid hormone than normal. Hypothyroidism can be suspected from overt signs, such as increased body weight, lethargy, hair loss, etc. Blood levels of thyroid hormone can confirm the diagnosis. Recently, however, it has come to light that hypothyroidism is not simply an all-or-none condition; there can be various degrees of dysfunction.

Somewhere between “normal” and hypothyroid are dogs whose thyroid hormone levels are lower than necessary for optimal function but whose levels are still technically within the normal range. In this situation, only one or two of the clinical signs of hypothyroidism may be present, and even so, their extent may only be subtle. This situation can be referred to as “sub-clinical” or “sub-threshold” hypothyroidism (i.e. below the threshold for a definitive diagnosis).

For example, a 2-year-old golden retriever that is shedding excessively and showing aggression may have thyroid hormone levels in the 25th percentile in the normal range. A healthy, active dog of this age should have her thyroid hormone levels between the 50th to 100th percentile of the normal range for optimal well being. If thyroid hormone levels are elevated to the optimum end of the range by giving synthetic thyroid hormone, dramatic improvements in the dog’s physical status, mood, and behavior can result.

Sub-clinical hypothyroidism is diagnosed with a number of other factors in mind such as:

- The breed of the dog (e.g. golden retrievers and shelties).
- Various physical subtle signs of hypothyroidism (e.g. excess shedding, bald spots, susceptibility to infections, allergies, irregular heat periods in intact bitches, a tendency to gain weight).
- Anxious or aggressive behavior that does not conform precisely to any of the usual aggressive patterns or is excessive for the circumstances in which it occurs.
- Borderline low thyroid hormone levels
- Positive behavioral response to treatment with synthetic thyroid hormone. This may be rapid (5 days) or slow (up to 4 weeks).

For dogs that are being treated with synthetic thyroid hormone, close monitoring of thyroid levels is very important. Blood samples should be taken 4-6 weeks after initiating or adjusting the dose, and should be taken 4-6 hours after the dog is pillied. The goal is to elevate thyroid levels to the upper end of the normal range.

Congenital or Acquired Neurological Problems

If a dog is born with a neurological problem or develops one (through injury or illness), its perception and judgment may be affected, causing inappropriate behavior. The following are some of the problems that can lead to aggressiveness:

- Hydrocephalus – most common in short-nosed breeds [brachycephalics].
- Encephalitis (bacterial or viral)
- Head trauma
- Brain tumors
- Epilepsy

Hydrocephalus

Hydrocephalus is a congenital condition in which the fluid filled spaces in the brain (the ventricles) become enlarged and the surrounding brain tissue subsequently becomes thinned or compressed. In humans, the term 'water on the brain' has been used to describe this condition. Dog breeds most commonly affected are toys and brachycephalics.

In mild cases, there are few, if any, clinical signs. However, more severe degrees of hydrocephalus are associated with a variety of neurological signs, sometimes including aggression. The definitive test for this condition is a CT (computed tomography) scan or MRI (magnetic resonance imaging). It can also be picked up on an EEG.

Encephalitis (bacterial or viral)

Any condition that causes inflammation of the brain can cause neurological signs, including aggression. Diagnosis is by observation of clinical signs and through evaluation of the CSF (cerebrospinal fluid – i.e. the fluid within the brain and spinal cord).

Head Trauma

When the brain is traumatized, regional swelling and bleeding will affect the functioning of the brain in that region. A variety of neurological signs may result including aggression.

Brain Tumors

When an elderly dog suddenly shows a change of personality, possibly including an increased aggressiveness, the possibility of a brain tumor should be seriously considered. Brain tumors are diagnosed from clinical signs and by specific neurological testing, with or without ancillary diagnostic aids, such as CT scan or MRI.

Epilepsy

Dogs that have epilepsy, and periodically convulse, are often more aggressive in the immediate post-seizure phase before they have fully returned to normal. Dogs in this state should always be handled cautiously as they are not fully aware of what they are doing.

Aggression is also sometimes associated with partial seizures. In this type of seizure the dog does not go into convulsions but remains relatively lucid and yet can display aberrant behavior.

Behavioral seizures

Partial seizures occurring in a region of the brain that controls aggression (e.g. hypothalamus or limbic system) can result in sudden unprovoked aggression. Certain breeds of dogs are known for this sudden, haphazard, and sometimes violent form of aggression. Included are: Springer spaniels, cocker spaniels, Chesapeake Bay retrievers, bull terriers, poodles, and golden retrievers. The clinical signs of seizure-related aggression are completely different from any of the other types of aggression mentioned above. They are as follows:

- A mood change just before the seizure.
- Sudden violent aggression for trivial or no reason.
- Signs of autonomic discharge (salivation, dilated pupils, and evacuation of anal sacs).

- Aggressive posturing, more or less continuous during an attack lasting several minutes, hours or even days.

Following a bout, affected dogs often appear depressed and lethargic, unresponsive to commands, and may stare at a wall or simply sleep. An electroencephalogram (EEG) will often demonstrate abnormalities. Some dogs with this type of aggression may respond to treatment with anti-convulsants (e.g. phenobarbital).