Tick Paralysis

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BASIC INFORMATION

Description

Tick paralysis is a form of generalized muscle paralysis of dogs that is caused by a neurologic toxin generated by certain species of ticks. The neurotoxin responsible for tick paralysis prevents the nerves from activating muscles by blocking a chemical called *acetylcholine*.

Causes

The two ticks most commonly associated with this condition are the *Ixodes* and *Dermacentor* ticks, both of which are natural parasites of dogs. Not every tick is capable of producing the disease. In order to cause tick paralysis, the tick must bite and feed on the animal. As the tick feeds, the neurotoxin is released into the blood of the animal. Signs typically appear after the tick has been attached for 3-5 days.

Clinical Signs

The most obvious clinical sign is generalized weakness involving all four legs. Signs appear suddenly (acutely) and steadily worsen over 1-3 days. Initially, the hind legs become weak, followed rapidly by weakness in the front legs. Decreased muscle tone is observed in all four legs, which makes the legs appear very limp. The dog often has difficulty standing, stands in a crouched position, and has a short-strided gait. Affected animals easily become tired when walking and often can walk only a few steps before having to rest. Severely affected animals become paralyzed.

If the tick is not removed, the muscles involved with breathing can become paralyzed, which can be life-threatening. Affected dogs are not in pain. Occasionally, jaw weakness and an inability to blink the eyelids are observed.

Diagnostic Tests

A presumptive diagnosis of tick paralysis can be made from a combination of clinical signs, neurologic examination findings, and finding a tick feeding on the affected animal. If a tick is not found but the animal improves after application of a product that kills ticks, tick paralysis may also be suspected. Specialized neurologic testing can be done to support the diagnosis but usually requires referral to a veterinary neurologist. Other tests are often recommended to rule out other diseases that cause similar clinical signs.

TREATMENT AND FOLLOW-UP

Treatment Options

Clinical signs rapidly resolve over 24-48 hours after removal of the tick. Severely affected dogs usually require hospitalization and intensive supportive care during the recovery period. Animals with difficulty breathing may be placed on a mechanical ventilator. Insecticide products that are safe for dogs are applied to kill any remaining ticks and prevent re-exposure.

Follow-up Care

Removal of the tick usually cures the disease. Long-term follow-up is not necessary in dogs that recover, but continuous, year-round tick prevention should be instituted.

Prognosis

Prognosis for recovery is excellent once the tick has been killed or removed. Prognosis is worse if muscles involved with breathing are affected or if pneumonia is present. Recurrence can occur if the dog is bitten by another tick capable of inducing the disease.

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