

COONHOUND PARALYSIS (IDIOPATHIC POLYRADICULONEURITIS)

BASICS

OVERVIEW

- Sudden (acute) inflammation of multiple nerve roots and peripheral nerves in dogs, with or without a previous history of contact with a raccoon
- Coonhound paralysis generally refers to dogs that have had previous history of contact with a raccoon, while sudden (acute) canine idiopathic polyradiculoneuritis refers to dogs that have the same nervous system signs and progression of disease, but do not have history or contact with a raccoon
- “Idiopathic” is the medical term for a disease of unknown cause; “polyradiculoneuritis” is the medical term for inflammation of multiple spinal nerve roots and nerves
- Proposed animal model for Guillain-Barré syndrome in people

GENETICS

- No proven basis

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs

Breed Predispositions

- Coonhound paralysis—coonhounds; any breed in contact with raccoons are susceptible
- Sudden (acute) canine idiopathic polyradiculoneuritis—no breed predisposition

SIGNS/OBSERVED CHANGES in the ANIMAL

- Appear 7 to 14 days after contact with a raccoon (coonhound paralysis)
- Stiff-stilted gait in all four limbs—initially
- Rapid progression to a flaccid lower motor neuron weakness to partial paralysis of all four legs (known as “tetraparesis”) to paralysis of all four legs (known as “tetraplegia”); “lower motor neuron disease” involves the nerves that connect the spinal cord and muscles
- Appetite and water consumption—usually normal
- Urination and defecation—normal
- Initial progression—usually occurs over 4 to 5 days; maximum progression can take up to 10 days
- Usually symmetrical nervous system signs
- Generalized decreased reflexes (known as “hyporeflexia”) to absence of reflexes (known as “areflexia”); decreased muscle tone (known as “hypotonia”) to lack of muscle tone (known as “atonia”), and severe decrease in muscle mass due to lack of nerve stimulation (known as “severe neurogenic muscle atrophy”)
- Rear legs more severely affected than are the front legs in a few patients
- Breathing—labored in severely affected dogs; occasional progression to paralysis of the respiratory muscles
- Loss of voice (known as “aphonia”) or altered voice (known as “dysphonia”) is common
- Weakness of facial muscles (known as “facial paresis”)—dog may not be able to completely close the eyelids
- Pain sensation is intact (in other words, dog can still feel pain); commonly dog may be overly sensitive to pain or touch (known as “hyperesthesia”)
- Motor dysfunction—always predominates; even a dog that is paralyzed in all four legs (tetraplegia) can usually wag its tail
- Sudden (acute) canine idiopathic polyradiculoneuritis—nervous system signs and progression of disease is the same, except no known initial encounter with a raccoon is identified

CAUSES

- Coonhound paralysis—contact with a raccoon; perhaps more important, contact with raccoon saliva
- Sudden (acute) canine idiopathic polyradiculoneuritis—none proven; possibly previous respiratory or gastrointestinal viral or bacterial infection, or vaccination

RISK FACTORS

- Coonhound paralysis—coonhounds tend to be susceptible, primarily because of the nature of their activities; previous disease does not confer immunity and may increase risk of redevelopment; multiple bouts are not uncommon
- Sudden (acute) canine idiopathic polyradiculoneuritis—unknown

TREATMENT

HEALTH CARE

- Inpatient—closely monitor patients in the progressive stage of the disease (especially during the first 4 days) for breathing problems
- Severe breathing compromise—intensive care; breathing support and oxygen, as required
- Intravenous fluid therapy—lactated Ringer’s solution; necessary only if patient is dehydrated because of inability to reach water
- Outpatient—stabilize patient, after initial diagnostic confirmation of disease
- Dogs usually are able to eat and drink, if they can reach the food and water; often must be hand fed because of paralysis
- Intensive physical therapy—important to decrease loss of muscle mass (muscle atrophy)
- Frequent turning of the dog and excellent padding of the bed—essential to prevent pressure sores

ACTIVITY

- Encourage as much movement as possible; many patients are paralyzed in all four legs (tetraplegia)

DIET

- No restrictions
- Make sure dog is able to reach food and water
- If the dog has weakness involving the neck muscles—may need to be hand fed

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- None proven effective
- Immunoglobulin—given early may decrease severity and/or shorten recovery time; “immunoglobulin” is an immune protein or antibody necessary for fighting disease

FOLLOW-UP CARE

PATIENT MONITORING

- Outpatient—keep in close contact with veterinarian regarding complications or changes in the dog’s condition
- Urinalysis—perform periodically to check for inflammation of the bladder (known as “cystitis”) in dogs that are paralyzed in all four legs (tetraplegia) or severely weak or partially paralyzed in all four legs (tetraparesis)
- Ideally, re-evaluate at least every 2 to 3 weeks

PREVENTIONS AND AVOIDANCE

- Coonhound paralysis—avoid contact with raccoons; often not feasible because of coonhounds’ environment and primary use as raccoon hunters
- Sudden (acute) canine idiopathic polyradiculoneuritis—none

POSSIBLE COMPLICATIONS

- Paralysis of respiratory muscles—in progressive stage of the disease
- Pressure sores; skin lesions that develop due to contact with urine, when the hair and skin remain damp (known as “urine scald”); and inflammation of the bladder (cystitis)—common in dogs that are recumbent for a prolonged time

EXPECTED COURSE AND PROGNOSIS

- Most recover fully
- Mild residual nervous system deficits—duration of several weeks in mildly to moderately affected dogs; duration of 3 to 4 months with severe disease

KEY POINTS

- Good nursing care is essential
- Prevent pressure sores and skin lesions that develop due to contact with urine, when the hair and skin remain damp (urine scald)
- Limit the degree of loss of muscle mass (muscle atrophy) by diligent physical therapy (such as passive limb movement and swimming as the patient’s strength begins to improve)
- The dog needs soft (fleeces are excellent), resilient bedding (straw is excellent) that must be kept clean and free of urine and feces, frequent turning (every 3 to 4 hours), frequent bathing, and adequate nutrition