

DEGENERATIVE MYELOPATHY (A SPINAL CORD DISEASE)

BASICS

OVERVIEW

- “Degenerative” refers to degeneration; “degeneration” is the decline or loss of function or structure of a tissue or organ; “myelopathy” is a disorder of the spinal cord
- “Degenerative myelopathy” is a disease of the spinal cord that causes progressive weakness of the hind limbs (known as “paraparesis”)

GENETICS

- Unknown inheritance pattern
- A familial (runs in certain families or lines of animals) inheritance currently is suspected due to the number of purebred dogs affected; genetic studies are underway

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs

Breed Predispositions

- Purebred, large-breed dogs
- German shepherd dog is the most commonly affected breed
- Other breeds include Pembroke and Cardigan Welsh corgi, Chesapeake Bay retriever, Rhodesian ridgeback, Irish setter, boxer, collie, standard poodle

Mean Age and Range

- Mean—9 years of age
- Range—older than 5 years of age
- Younger dogs also affected

Predominant Sex

- Males and females equally affected

SIGNS/OBSERVED CHANGES in the ANIMAL

- Subtle (insidious), progressive asymmetric wobbly, incoordinated or “drunken” appearing gait (known as “ataxia”)
- Hind-limb weakness or partial paralysis (paraparesis) leading to paralysis, eventually progressing to weakness or partial paralysis of all four limbs (known as “tetraparesis”) or paralysis of all four limbs (known as “tetraplegia”)
- Gait will show long-strided, spastic weakness or partial paralysis (paraparesis)
- Loss of proprioception early in disease course; “proprioception” is the normal subconscious awareness of the location of the limbs and movement
- Spinal reflexes usually present or exaggerated
- Decrease or absence of “knee-jerk” reflex (known as the “patellar reflex”) may be seen
- Loss of muscle mass due to decreased use (known as “disuse muscle atrophy”)
- Control of urination and defecation is lost late in disease course
- Lack of sensitivity to touch or pain along the spine (known as “paraspinal hyperesthesia”) is a key clinical feature
- Sensory perception remains unaffected

CAUSES

- Unknown (so called “idiopathic disease”)
- Hypothesized causes include immune-mediated disease, metabolic deficiencies, toxic-related disorder, oxidative stress and genetic disorder

RISK FACTORS

- Unknown

TREATMENT

HEALTH CARE

- Supportive care
- Breeds of small size may survive longer with degenerative myelopathy because the pet owner is able to give appropriate care more easily

- When the dog is unable to walk (known as being “nonambulatory”), s/he should be kept on a well-padded surface to prevent “bed sores” (known as “decubitus ulcers”) over bony prominences
- Keep hair trimmed, and skin clean and dry to prevent skin lesions (known as “urine scald”) that develop due to contact with urine, when the hair and skin remain damp, secondary to inability to control urination (known as “incontinence”)
- Physical therapy using range-of-motion and isometric exercises may help maintain limb mobility and muscle strength

ACTIVITY

- Exercise is encouraged to slow loss of muscle mass (disuse atrophy) of hind limbs
- Water-based physical therapy (known as “hydrotherapy”) can involve use of an under-water treadmill set up
- A wheel cart may assist with patient mobility

DIET

- Maintain a balanced diet
- Prevent weight gain

SURGERY

- None

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.

- No drug has been proven to be effective in slowing or halting disease progression
- Some medications are being tried, including aminocaproic acid, vitamin E, or vitamin B₁₂

FOLLOW-UP CARE

PATIENT MONITORING

- Repeat nervous system examinations
- Monitor urination
- Urinalysis and urine culture to check for urinary tract infection

PREVENTIONS AND AVOIDANCE

- Use of a well-padded surface to prevent “bed sores” (decubitus ulcers)
- Ensure that animal is urinating to prevent urine retention and urinary tract infection
- Keep hair trimmed, and skin clean and dry to prevent skin lesions (urine scald) that develop due to contact with urine, when the hair and skin remain damp, secondary to inability to control urination (incontinence)
- Prevent weight gain

POSSIBLE COMPLICATIONS

- Urine retention may increase the likelihood of urinary tract infections
- Local skin infections from “bed sores” (decubitus ulcers)

EXPECTED COURSE AND PROGNOSIS

- Paralysis of the hind limbs (known as “paraplegia”) occurs within 6 to 9 months from time of diagnosis
- Weakness or partial paralysis of all four limbs (tetraparesis) may be evident within 1 to 2 years from time of diagnosis
- Long-term prognosis is poor

KEY POINTS

- “Degenerative myelopathy” is a disease of the spinal cord that causes progressive weakness of the hind limbs (paraparesis)
- Long-term prognosis is poor
- Meticulous nursing care is crucial to preventing secondary complications in a recumbent patient