

Spinal Cord Diseases in Bernese Mountain Dogs



AN OVERVIEW FOR BERNER OWNERS
ORGANIZED BY
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*Based on materials obtained from the Berner Garde Foundation database &
Veterinary Information Network (VIN)*

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Overview



- What Spinal Cord Diseases affect BMDs?
 - Data from the Berner Garde Foundation Database
- What are distinguishing characteristics of Spinal Cord Diseases?
 - What you need to know to help your Veterinarian help your BMD.
- Details on Selected Spinal Cord Diseases affecting BMDs
 - Intervertebral disk disease
 - Diskospondylitis
 - Ischemic myelopathy (Fibrocartilagenous emboli)
 - Degenerative myelopathy
 - Neoplasia/Tumor

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Selected BMD Berner Garde Data on Spinal Diseases

as of 3/2008

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Disease Description (Frequency)	Disease Description (Frequency)
Invertebral disk disease (7)	Cauda equina syndrome (1)
Spinal tumor/neoplasia (30)	Degenerative myelopathy (47)
Diskospondylitis (1)	Cervical vertebral malformation/ malarticulation (Wobbler's) (17)
Caudal vertebral defect (1)	Spinal lesions (1)
Myelitis (3)	Spinal problems (32)
Fibrocartilagenous emboli/Ischemic myelopathy (8)	Ruptured/herniated disk (6/12)
Ataxia (1)	Lumbar neurologic deficit (3)
Myelitis (3)	Unexplained pain (1)
Paresis/Paralysis (10/14)	<i>(Note: not all are diagnosed definitively, but rather anecdotal (suspected); some disease categories are over lapping or not exclusive)</i>

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Help Your Vet Help Your Berner

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- Spinal cord diseases differ on the basis of location, age at onset, relative pain level & progression.
- Help your vet by observing the following:
 - What part of the spine is affected (*neck, mid or lower back*)?
 - Did the condition occur suddenly or as gradual deterioration?
 - Was the progression rapid (*in days or hours*) or slow (*in weeks or months*)?
 - Does your dog appear to be in pain?
 - How old is your dog?

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Diseases Affecting Any Part of the Spine

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- Intervertebral disk disease
- Diskospondylitis
- Tumor
- Trauma
- Myelitis
- Ischemic myelopathy (Fibrocartilagenous emboli)

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Spinal Diseases Affecting Specific Locations

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- Neck
 - Wobbler's Syndrome
- Mid Back
 - Degenerative myelopathy
- Lower Back
 - Lumbosacral instability
 - Cauda Equina Syndrome

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Spinal Diseases by Age Affected

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- Diseases affecting primarily younger dogs:
 - Trauma
 - Myelitis
 - Degenerative myelopathy
 - Diskospondylitis
 - Wobbler's Syndrome
- Diseases affecting primarily older dogs:
 - Degenerative myelopathy
 - Neoplasia/Tumors

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Differences in Onset & Progression

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- Acute onset with rapid progression
 - Intervertebral disk disease (Type I)
 - Ischemic myelopathy (Fibrocartilagenous emboli)
- Slow onset with chronic progression
 - Intervertebral disk disease (Type II)
 - Degenerative myelopathy
 - Diskospondylitis

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Spinal Disease Pain Levels

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- Painful Spinal Diseases:
 - Intervertebral disk disease
 - Diskospondylitis
 - Tumor/Neoplasia
 - Myelitis
- Spinal Diseases with Little or No Pain:
 - Ischemic myelopathy (Fibrocartilagenous emboli)
 - Wobbler's syndrome
 - Degenerative myelopathy & other degenerative conditions

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Intervertebral Disk Disease

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- Location of herniation can be **any place along the spine** below the neck.
- **Clinical signs** include **neck pain** and **difficulty moving**.
- **Diagnosis** is made with advanced imaging or myelography.
- Radiographs do not offer a definitive diagnosis.
- General therapeutic guidelines are:
 - Mildly affected (*neck pain alone with mild impaired movement*) may be managed with cage rest for at least 2 weeks. If after 2 weeks there is no improvement, diagnosis and surgery should be considered. If there is improvement continue cage rest another 1-2 weeks after the dog is clinically normal.
 - More severely affected (*unable to support weight*) are surgical candidates for decompression of the cord. Dogs with deep pain have an 80-90% chance of being able to walk at some time after surgery. If no deep pain, the prognosis for walking falls to 50%. If deep pain is absent for longer than 48 hours, the prognosis for return to walking falls to below 5%.
 - Myelomalacia (*necrosis of the spinal cord*) suggests irreversible damage to the cord. Surgery is not helpful. If it ascends to involve the cervical spinal cord, death will result. Euthanasia may be considered.

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Diskospondylitis

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- **Caused** by an **infection** of the disk space and surrounding area.
- Affects **large breed dogs**.
- **Predisposing factor** is a history of chronic infections (skin, urinary tract, prostate) or administration of immunosuppressive drugs (corticosteroids). History of reproductive problems may be noted.
- Spinal pain is most consistent **clinical sign**. Difficulty in movement is usually mild unless the infectious process extends into the spinal canal. Muscle atrophy may be severe along spine.
- Diagnosis is supported by radiographs. Blood and urine cultures may reveal specific organism. *Brucella canis* titers should be evaluated.
- **Treatment** includes prolonged antibiotic administration specific for the organism present. If blood and urine cultures remain negative and clinical improvement is not seen on antibiotics, surgical exploration should be performed.

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Ischemic Myelopathy (Fibrocartilagenous Emboli)

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- A **blood vessel disease** of the **spinal cord** (*myelopathy*) caused by a blocking of the cord's blood supply (*ischemia*) by fibrocartilage, similar to that found in the intervertebral disks. The way that this fibrocartilage enters the blood system is unknown.
- Typically, **acute, sudden onset** of paralysis. It is a common cause of paralysis in dogs (*particularly large & giant dog breeds*).
- **Diagnosis** is made **by exclusion** of other diseases.
- Definitive diagnosis can only be made at necropsy.
- There is no cure for IS/FCE, but the disease can be managed.
- **Prognosis** depends on the severity of the clinical signs.
 - Loss of deep pain sensation is a poor prognostic factor for return to function.
 - If deep pain sensation remains, many animals will recover useful spinal function. Exercise such as swimming or walking is recommended. Once the dog is unable to walk, pressure sores may develop (use soft bedding) and incontinence may also occur.

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Degenerative Myelopathy (DM)

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- A **slowly progressive disease** of **undetermined cause**.
- **Diagnosis** is by **exclusion** of other diseases, specifically elimination of disk disease, FCE, tumor, diskospondylitis, trauma and hip dysplasia. Much of what is attributed to be DM is likely to be something else.
- Definitive diagnosis requires necropsy.
- Results in **loss of control of hind legs**, which progresses to weakness and then paralysis.
- Generally not seen in dogs under 5 years old.
- **Clinical signs** include difficulty raising hind quarters, awkwardness, lack of coordination, toe nail dragging/wear. May be episodic or progress steadily.
- **Disease** can be **managed**, but **not cured**. No treatment has been shown effective in published trials (*as of 2003*), but Epsilon amino caproic acid may delay progression (*anecdotal evidence*). Exercise such as swimming or walking is recommended. Once the dog is unable to walk, pressure sores may develop (*use soft bedding*) and incontinence may also occur.

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Tumors/Neoplasia

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- Tumors can occur in several places, but **most common locations** are on the outermost, toughest, and most fibrous of the three membranes covering the spinal cord (i.e., the dura mater).
- **Diagnosis** is made primarily with myelography or CT/MRI. Tumors of the bone may be seen on radiograph.
- **Treatment options** include surgical removal, and possibly radiation therapy – *esp.* for extradural tumors.
- **Prognosis** depends on tumor type, how completely the tumor can be removed, if it has penetrated the spinal cord, and the damage to the cord prior to and during surgery.

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Other Spinal Cord Diseases

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- **Myelitis** – Myelitis can result from inflammatory diseases. Low incidence. Toxoplasmosis has been suggested as a cause of myelitis in older dogs.
- **Trauma** – remains among the most devastating and preventable of all spinal injuries that a canine can sustain.