

MEDVET CLINICAL REVIEW

Intervertebral Disk Disease in Dogs

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Intervertebral disk disease is the most common cause of spinal cord injury in dogs. A better understanding of how the spinal trauma responds to trauma has enhanced both medical and surgical treatment of intervertebral disk disease (IVDD) and subsequently improved patient prognosis.

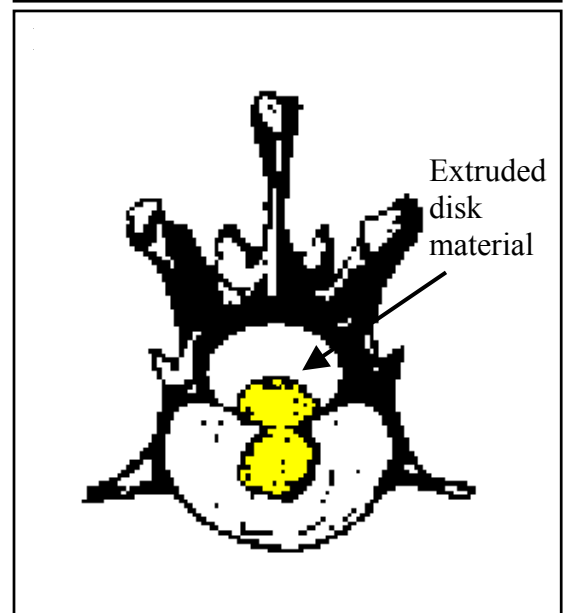
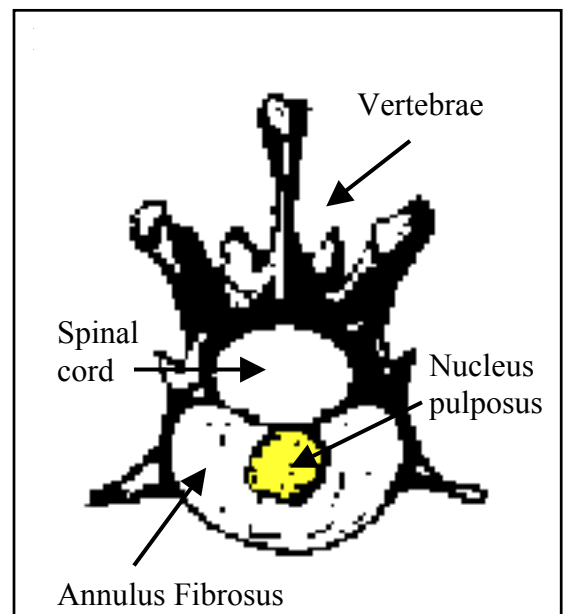
Basic Review

The nucleus pulposus (soft jelly-like center) and annulus fibrosus (outer firm tissue) compose the intervertebral disk and both play a role in the development of IVDD (**Figure 1**). Short-legged breeds (dachshunds, beagles, etc.) are the most commonly affected. These dogs have been bred for their diminutive stature and in turn their normally soft, gelatinous nucleus pulposus undergoes degeneration and mineralization to become hard, noncompliant, and a poor shock absorber. These mineralized disks can rupture acutely, tearing through the annulus with tremendous force and causing spinal cord trauma (**Figure 2**). Chronic annulus fibrosus thickening is another aspect of IVDD and results in progressive compression of the spinal cord without actual extrusion of the mineralized center (**Figure 3**). Both types of disk degeneration can produce similar clinical signs and can affect large and small breed dogs.

Diagnosis

The two most common locations of IVDD are thoracolumbar (mid-spine) and cervical (neck). Dogs with thoracolumbar IVDD tend to have a combination of neurologic dysfunction and pain while dogs with cervical IVDD often have severe pain alone. Physical examination centers on localization of the IVDD and determining the severity of the neurologic deficits.

Cervical IVDD patients usually have a history of painful behavior characterized by crying out without apparent cause and, less frequently, intermittent non-weight bearing forelimb lameness (“root sign” or radiculopathy) caused by nerve root compression (“pinched nerve”). Examination findings include: pain elicited on neck spinal palpation or neck movement, rigid/tense neck, and variable limb weakness or wobbly gait.



Thoracolumbar IVDD can present suddenly or as chronic progressive rear limb weakness. Unlike cervical IVDD, thoracolumbar IVDD usually causes significant neurologic dysfunction. The severity of the symptoms varies ranging from mild weakness to complete paralysis with an inability to feel pain in the affected limbs. Spinal X-rays are helpful for looking for mineralized discs but myelography is required to accurately diagnose, localize, and determine the degree of spinal cord compression present. A myelogram is performed by injecting a liquid around the spinal cord that is visible on X-rays. This shows any compression that may be taking place and allows for proper treatment.

Treatment

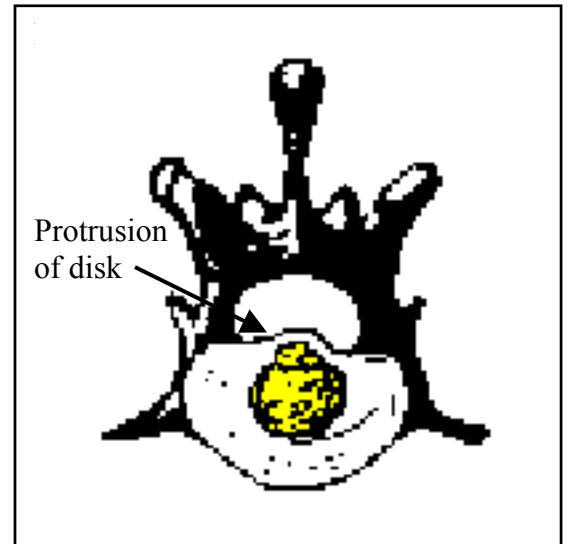
Treatment varies with the type of symptoms present. Oral anti-inflammatories and cage rest are reserved for dogs with mild signs only. Some improvement is expected within 48 hours or less with this treatment. A lack of a significant response is grounds for more aggressive treatment. Cervical IVDD patients with even mild neurologic dysfunction should be considered as potential surgical candidates.

Myelography and surgery is indicated for all dogs that have failed to respond to medical treatment or those that have more severe or progressive symptoms. Surgery is effective at relieving pain, removing spinal cord compression, and maximizing chances for patient recovery. Surgery requires creating a small window in the bone around the spinal cord to gain access to the disc material. The material is removed; the spinal cord compression relieved, and healing can now take place.

Prognosis

Prognosis for patients with cervical IVDD is generally very good with a >75% chance for recovery. The prognosis for thoracolumbar IVDD depends on the clinical signs present. Weak or paralyzed patients have a very good chance for recovery with surgery. Most dogs show dramatic improvement during the first few weeks of recovery from surgery. Dogs that are both paralyzed and cannot feel their legs have the poorest chance for recovery. These patients have more severe spinal cord trauma that has a limited capacity to heal.

MedVet works in conjunction with your veterinarian to help determine the most effective care for patients suffering from disk problems. Together, we successfully treat hundreds of these patients annually with very consistent results.



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