

Intervertebral Disc Rupture



The spine is composed of bony vertebrae between which intervertebral disks are "sandwiched." These disks provide stability and mobility to the spinal column. In health the intervertebral disks are composed of a tough out coat of fibrous tissue (annulus) and a fluid, shock-absorbing, centre (nucleus). The spinal cord lie immediately above these disks in encased in a bony spinal canal through the vertebral bones.

With age the fluid nucleus undergoes hardening which can lead to rupture of the annulus during even normal activity. Rupture results in disc nucleus material entering the spinal canal and compressing the spinal cord. The site of disc rupture is most often the mid-back (thoracolumbar) or neck (cervical). Dogs most commonly affected by disc rupture are young mature to middle-aged dogs with short limbs and long backs. Older large breed dogs may also suffer intervertebral disc disease, but is less common. Cats can be, but are infrequently affected.

Depending on the amount and force of the disc rupture the signs can range from discomfort to complete paralysis. Although the majority of dogs affected by disc rupture can be effectively treated if done so rapidly after onset of injury, a proportion of patients develop permanent paralysis, urinary and faecal incontinence. On rare occasions these injuries may progress to death or necessitate euthanasia.

The first and most important test in the diagnostic workup of intervertebral disk rupture is a full physical and targeted neurological examination. Advanced imaging (Myelography, CT or MRI) of the spinal cord is required to confirm the diagnosis and accurately localise the site of injury.

Myelography is performed under general anaesthesia and requires a "spinal tap". Radiographic contrast material is carefully injected into the spinal canal to outline the spinal cord. Spinal radiographs (X-rays) or a CT scan are then performed to identify the exact location of disc rupture.

Once the severity and location of the disk rupture has been identified a treatment plan can be formulated. For dog with signs of mild spinal pain and weakness, non-surgical treatment with pain control medication and strict hospital rest can be safely offered. For dogs suffering severe pain or severe weakness/paralysis (especially if progressive), surgical decompression of the spinal cord is recommended.

For those patients where surgery is indicated immediate progression to surgery should be pursued after the site of disk rupture has been identified. The surgical procedure involves creating a bone window into the spinal canal to allow removal of the disc material compressing the spinal cord. For a cervical (neck) disc this is a "Ventral Slot" procedure and for the thoracolumbar (back) disc a "Hemilaminectomy" procedure will be performed. Both of these procedures require specialised surgical instruments and advanced surgical training.

All dogs with intervertebral disk rupture must remain in hospital until they are comfortable, showing improvement in limb function and can urinate on their own. The time required for this to occur can vary widely but usually takes from five to ten days. Physiotherapy is commenced as soon as practical either at home or with an experienced veterinary physiotherapist.

Once the patient is discharged from hospital they must be strictly confined with supervised activity. Home care requires strict confinement and supervised activity only until they are walking well. Long term medication is not usually required. The frequency of veterinary are determined on an individual basis; though are typically performed at two weeks postoperatively for suture removal and prior to return to normal activity.

It is vitally important that restriction of activity is vigilantly adhered to and monitoring of the passage of urine and faeces is monitored closely. Early controlled activity and physiotherapy is beneficial. Rehabilitation with an animal physiotherapist or hydro therapist can also be arranged.

Normal comfort and good mobility is almost always achieved for dogs that have some movement and/or feeling in their feet prior to surgery. Of those dogs with no movement and no feeling in their feet (the most serious stage of spinal compression), 50% may never walk again. Unfortunately there are no preoperative tests currently available to identify patients with permanent spinal injury from those that will recover.

Disc rupture and subsequent spinal cord injury is a serious, potentially permanent and sometimes life-threatening disease. While complications from the injury, during diagnosis, or surgery are uncommon they may occur and can alter chances of recovery.

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