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INTERVERTEBRAL DISC DISEASE IN DOGS

The intervertebral discs link the vertebral bodies (or vertebrae) of the spine. Their main function is to stabilize the vertebral bodies. They also act as shock absorbers when force is applied to the spinal column. There are two main structures that make up the intervertebral disc:

1. The Outer Annulus Fibrosus
2. The Inner Nucleus Pulposus.

There are two types of Intervertebral Disc Disease (IVDD):

1. Hansen Type I: This is the true "ruptured disc". It occurs acutely (over 1-5 days) and it is characterized by an extrusion of the nucleus pulposus into the spinal canal, resulting in cord compression and nerve root irritation. This type usually affects young to middle aged small breed, chondrodystrophic dogs (i.e. Dachshunds, Lhasa Apsos, Cocker Spaniels, Shih-Tzus, etc.) The most frequent area of rupture is at the junction of the thoracic and lumbar spine. The onset of symptoms is usually sudden and many of these dogs present with impaired motor function (wobbly gait) or complete loss of voluntary movement in both hind limbs (paraplegia). Surgery is generally viewed as the best option for these patients.
2. Hansen Type II: This is a protrusion of the annulus fibrosus, and is often called a "bulging disc". This type of disc is more common in older, large breed dogs such as Labradors, German Shepherds and Rottweilers. However, small breeds are not immune to this type of disc. The onset of symptoms is typically slow and comes with a history of difficulty in rising, climbing stairs or jumping and increasing ataxia in the hind limbs. In some cases, if the neurological deficits and pain are mild, these dogs may be treated conservatively. Management of these cases may include strict cage confinement for a minimum of 4 weeks and medical pain and anti-inflammatory drug treatment.

Myelograms

Myelograms are performed under general anesthesia. A contrast agent is injected into the subarachnoid space (the space around the spinal cord). This injection is usually made in the lower lumbar region (commonly at L5-L6), or slightly in front of where the tail joins the body. When the spinal cord is compressed as with IVDD, the resulting contrast columns will be deviated or narrowed around the rupture area.

Surgery

Once the site of the disc rupture has been determined by the myelogram, surgery can be performed. Most ruptures occurring in the Thoracic/Lumbar region are accessed by means of what is called a Hemillaminectomy. The actual bone of the vertebrae is cut away in order to exposed the ruptured disc material that is compressing the spinal cord and nerve roots that exit from either side of the cord. Once the disc material is removed from around the cord and nerve roots, allowing the cord to return to a normal anatomic condition, the pressure is relieved and normal circulation is restored.

Post-Operative Management

Immediately post operatively, patients are treated for pain and given intravenous fluids (which aid in the elimination of the contrast solution used in the myelogram). Most paralyzed patients will need to be on soft bedding and will need to have their bladder expressed every 6 to 8 hours until they are able to eliminate on their own.

What to expect when they're finally home again

Confinement is encouraged for at least 4 to 6 weeks after surgery. This means no running, jumping, chasing squirrels, going up and down stairs, etc. Leash walking only when they need to urinate and defecate. If pets are still not able to urinate voluntarily, the bladder must be expressed a minimum of every 6 hours until voluntary elimination resumes. Most veterinarians will discharge their patients with pain medication to continue at home and some may release patients with anti-inflammatory medication also.

Physical Therapy

You may safely begin light physical therapy after the first week. Exercises should include passive range of motion and massaging. Do not begin aggressive therapy until at least 4 to 6 weeks, as the surgery site still needs time to heal. Water therapy should not begin until all sutures have been removed (usually 10 to 14 days post op).