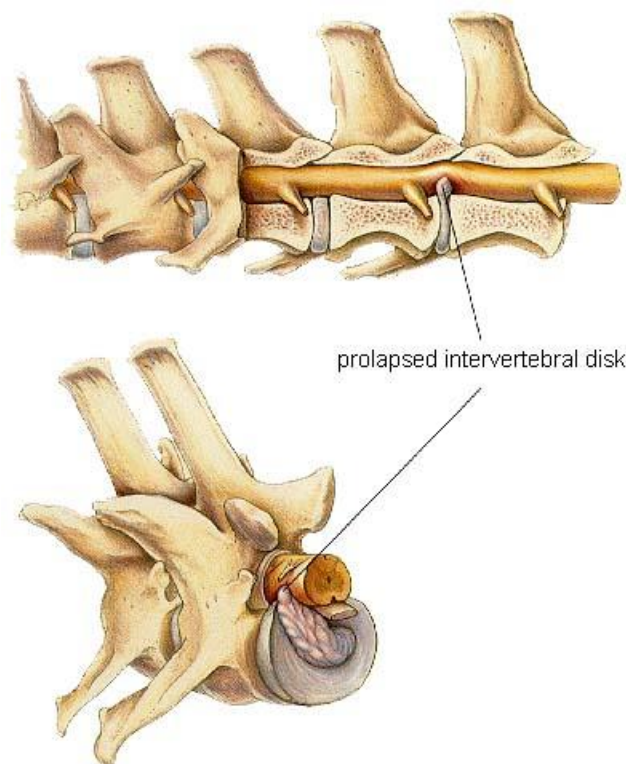


Paws, Claws & Wings

Physical and Behavioral Rehabilitation for Animals

Intervertebral Disc Disease

Intervertebral disc disease is a problem associated with the spine and is the most common neurologic problem in dogs. Dogs generally present to the veterinarian because of difficulty walking. Herniation of an intervertebral disc is a very serious problem with potential permanent consequences. It is therefore important to follow the advice provided by your veterinarian after a definitive or suspected diagnosis of intervertebral disc disease has been made.



The canine spine is made up of vertebral bodies and intervertebral discs. The discs function as shock absorbers for the spine. The disc is made up of two different substances, the nucleus pulposus and annulus fibrosis. In dogs with a ruptured disc the nucleus pulposus (jelly) breaks through the annulus fibrosis (outer covering) and lodges in the spinal canal where the spinal cord is located. The spinal canal is a tubular bone structure that contains among other things the spinal cord. There is a limited amount of space in the spinal canal and when dried disc material ejects into the canal the spinal cord becomes compressed. This compression is one of the primary causes of the difficulty walking seen in animals with herniated discs. The disc often hits the spinal cord at a high velocity, which also causes injury to the spinal cord. Any type of dog can develop a disc

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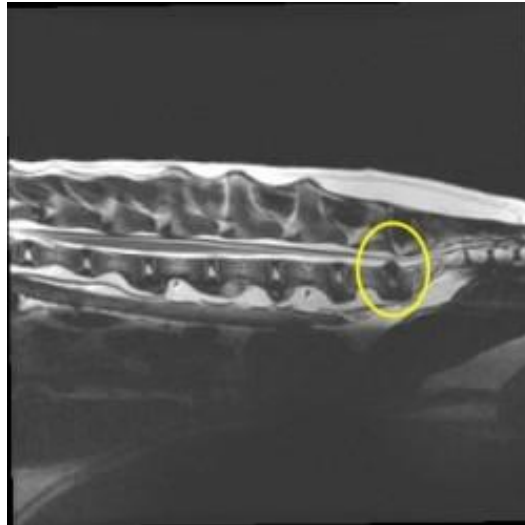
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herniation but chondrodystrophic breeds with short legs and long bodies such as Dachshunds, Bassett Hounds and Pekingese are most commonly affected. Disc herniation most commonly occurs in dogs between 4 and 7 years of age

Some dogs, in spite of the best medical and surgical care, are permanently paralyzed by IVDD. Unfortunately this is the nature of spinal cord injury. The spinal cord has minimal capacity for healing, and so can only withstand injury up to a point. Injuries which result in severe damage to the spinal cord are likely to be irreversible, regardless of treatment. In this way, trauma from disc displacement is no different than that sustained after a severe spinal fracture.



Treatment options:

Surgery or conservative management is an option in most animals. Surgery is recommended in all animals with any significant problem walking. For animals with only signs of back pain conservative management is generally recommended. Conservative management primarily consists of strict cage rest for 6 weeks. Some animals will also benefit from small doses of steroids. Steroids decrease the spinal cord swelling in the short term but do not improve long-term outcome. Steroids also have the potential for negative side effects (i.e. ulcers in the stomach) and therefore must be used with care.

The chance of improvement following surgery of a ruptured disc is very good but depends on the neurologic status prior to surgery. The neurologic status is basically a measure of how much difficulty an animal is having walking. Greater than 90% of dogs with any ability to move their back legs or the ability to feel the toes of their rear limbs being pinched will return to normal or near normal function within a few weeks of surgery. Animals that have lost the ability to feel pain in the back legs have an approximately 50% chance of recovery with surgery. Many animals will also improve with strict cage rest. Improvement is however less predictable than with surgery. Recovery also takes longer and the chance of recurrence is greater. The above percentages of recovery apply to all animals with a

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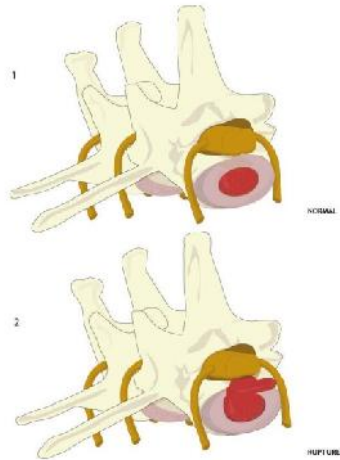
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relatively stable neurologic status. If an animal is seen within a few hours of being normal then it could continue to get worse with time even with surgery. Following surgery an estimated 5 to 20 percent of dogs will develop an additional disc herniation within 2 years of a first herniation. If this happens within 4 weeks of surgery generally the same site has re-herniated. If it occurs greater than 4 weeks after surgery then most likely a different disc space has ruptured. Repeat disc herniation occurs most commonly in dachshunds.



Physical rehabilitation:

Rehabilitation is aimed at preserving and promoting the spine and hind leg's muscle mass, strength and range of motion through early (3-5 days) postoperative weight bearing ambulation and passive range-of-motion exercises. Early ambulation can be achieved by assisting the dog in getting up and walking. A towel can be placed under the abdomen to make assistance easier to perform in heavy dogs. Leash walks and/or hydrotherapy should be performed until near normal use of the body returns. Passive range of motion physical therapy is also necessary to increase muscle strength and flexibility. Rehabilitation is critical and should be implemented within a couple of hours after the surgery. The amount and difficulty of the activity will be determined by a qualified individual. Exercise also improves joint range of motion which in turn, keeps the dog more comfortable.

Hydrotherapy, because it is a non-weight bearing exercise, can be a very useful means of maintaining muscle tone and range of motion without placing concussive forces on the spine.

Dogs that are obese, inactive or have substantial muscle atrophy and have poor owner compliance with physical therapy recommendations will have less chance of recovery.

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