Intervertebral Disc (Ruptured Disc) Disease in Dogs

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The dog's spine is made up of numerous small bones called vertebrae. These extend from the base of the skull all the way to the end of the tail. The vertebrae are interconnected by flexible discs made of a cartilage-like material. These are called the 'intervertebral discs' or 'intervertebral disks'. These discs provide cushioning between each bone and permit the neck, spine, and tail to bend, allowing changes in position and posture. Each vertebra has a tunnel running through it. The spinal cord runs through these tunnels, where it is protected by the bone surrounding it, except for the places in between the vertebrae where it runs over the top of the disks. The spinal cord is made up of a mass of nerve fibers that run back and forth between the brain and the rest of the body.

What is intervertebral disk disease?

As a disk becomes weaker with age or trauma, it may rupture, or herniate, causing a portion of the disk to protrude upward and place pressure on the spinal cord. This may be termed a 'ruptured disc' or 'herniated disc'. This may occur suddenly (acutely) or over a period of time (chronically). The pressure on the cord typically prevents or inhibits nerve transmission along the spinal cord. The effect on the spinal cord will depend on the amount and severity of the pressure. Effects can include pain, weakness, paralysis, loss of sensation, and the inability to control urination and defecation. The location of the 'ruptured disc' will also affect the symptoms. Disk herniation most commonly occurs in the neck, middle back, or lower back. A disk herniation in the neck area may affect the entire body, while one in the middle of the dog's back may only affect the actions of the rear legs and some abdominal organs.

Certain breeds of dogs including Dachshunds, Basset Hounds, Beagles, Cocker Spaniels, Shih Tzus, Lhasa Apsos, Pekingese, and Corgis have a greater incidence of disk disease. They are more likely to have genetic factors that increase the risk of the disease.

In many cases, we may never find exactly when or what caused the disk to rupture. Although a herniated disc may be associated with severe trauma such as being hit by a car or falling from heights, this cause is relatively uncommon. In the smaller breeds, it often occurs when these dogs jump down off furniture.

What are the symptoms of a ruptured disc?

When a disk first ruptures, it usually causes intense pain. When this occurs in the middle of the back, the dog will arch his back up in pain. When the herniation takes place in the neck, the dog is unwilling to turn his head, and may not even want to lower it to eat and drink. Some dogs will shiver from the pain and walk very carefully and slowly. In severe herniations, the back legs will be partially or completely paralyzed. This may be temporary or permanent. The nerves affecting the bladder and colon may also be affected making it difficult for the dog to urinate or defecate on his own. This is a very serious condition and it is imperative that you seek veterinary care immediately.

How is a herniated disk diagnosed?

The veterinarian will suspect a herniated disk based on a physical exam, the history, and the clinical signs the dog is showing. Radiographs are often used to add support to the probable diagnosis. A myelogram, MRI, or CAT scan are generally advised to pinpoint the exact location of the disk problem(s) - since more than one disk may be involved. A sample of cerebral spinal fluid (CSF) may be collected to rule out an infection surrounding the spinal cord, which can cause similar symptoms to intervertebral disk disease.

What is the treatment of intervertebral disk disease?

Medical (nonsurgical) therapy is used when there are only mild symptoms. Treatment is based on temporarily confining the animal to a cage or very small area and eliminating any possibility the dog would jump, run, twist or otherwise move in a way that could further injure the area. Confinement will generally need to last 4-6 weeks. Usually the use of a nonsteroidal anti-inflammatory drug (NSAID) such as Rimadyl (carprofen), Etogesic (etodolac), or Deramaxx (deracoxib) is recommended. These medications help reduce the swelling around the spinal cord. Pain medication may also be prescribed. Do not use pain relievers without consulting first with your veterinarian.

Surgery is considered when there have been multiple episodes, if there is severe pain, or there are more severe nervous system signs. Surgery may be performed to either remove the protruding disk material and/or remove a portion of the bone that surrounds the spinal cord to help relieve the pressure. To be effective, however, surgery must usually be done within the first day or so following the injury. This surgery almost always requires the expertise of a specialist. Following surgery, the dog must be kept in strict confinement as described above. Whether medical, surgical, or a combination of the two treatments is used, it may be weeks to months before the dog has achieved maximum healing.
Prognosis is generally good if the animal can still feel deep pain in the affected limbs when presented for treatment and the treatment is provided rapidly. The prognosis is more guarded if there is paralysis or reduced deep pain sensation. The possibility of walking again is poor if the animal is paralyzed and has lost deep pain sensation or treatment is delayed.