NEUROLOGY

IVDD

by Anthony Conte, DVM

VETERINARY NEUROLOGY & IMAGING OF THE CHESAPEAKE

IVDD stands for Intervertebral Disk Disease. The intervertebral disks sit between the vertebrae in the spine and act as shock absorbers as your pet moves, twists, and jumps. The spinal cord, which transmits signals from the brain to the legs, lies in a space above the disks and the body of the vertebrae. The disks should be shaped like a jelly donut - they have an inner jelly layer (the nucleus pulposus) that helps absorb shock, and it is held in place by an outer fibrous layer (annulus fibrosis).

Intervertebral disk disease is a degenerative condition and while there is no sex predilection, chondrodystrophic breeds such as Dachshunds, Poodles, Cocker Spaniels, French Bulldogs and Pekingese are more commonly affected. In cases of IVDD that are localized to the cervical (neck) region there is a higher incidence in Beagles, Doberman Pinchers, Labrador Retrievers and German Shepherds. Regardless of the location of the disk disease most affected dogs are middle aged.

Clinical signs vary from mild pain, to unrelenting pain and all the way to complete paralysis with potentially absent nociception (feeling/pain response) in the limbs. Sudden onset pain with or without neurologic deficits (most commonly dragging of the rear limbs, ataxia (unsteadiness/wobbliness), and/or scuffing while walking) is the most common presentation.

There are two main forms (or types) of IVDD and each is explained below.

In type I disease, there is degeneration of the inner jelly-like layer. This material gets dry and hard, and over time it is unable to properly absorb shock from day-to-day activities. This causes the material to start to rip and tear through the outer fibrous layer. Ultimately the outer fibrous layer ruptures and the inner jelly is able to come out of its normal position and compress the spinal cord. This is the form of intervertebral disk disease that we most typically see in chondrodystrophic breeds (dogs with a long body and short legs) such as dachshunds and Corgis.

In type II intervertebral disk disease, there is progressive degeneration of the outer fibrous layer. This causes the outer fibrous layer to gradually protrude up into the vertebral canal and cause progressive compression of the spinal cord. This is the type of intervertebral disk disease that is most commonly described in large breed dogs such as Dobermans, and German shepherds.

Diagnosis is by advanced spinal imaging such as magnetic resonance imaging (MRI). Other diagnostics employed may include radiographs (x-rays) and cerebrospinal fluid analysis.

Treatment of intervertebral disk disease can be medical (pain medications) or surgical and this depends on the severity of the clinical signs and the neurologist's discretion. However regardless of the route chosen the most important aspect of this plan is strict rest. This rest should continue for 4-6 weeks, even if the pet seems to be improving and wants more activity. It is imperative and necessary to please keep the pet confined to a crate or a small area without access to stairs or furniture, no running, no jumping, with only short walks for bathroom purposes only (not longer than 5 minutes, 3-4 times daily). The purpose of the rest period is to allow

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the disk to heal and hopefully prevent further herniation. If at any point the pet is getting weaker, more painful, or is having difficultly urinating, please have them evaluated by a veterinarian immediately.

Prognosis for IVDD dis variable and again this is based upon the severity of the clinical signs that are being shown. However speaking in generalities if the pet is showing any combination or all of aforementioned neurologic deficits (exhibiting pain, scuffing of the limbs, ataxia (unsteadiness/wobbliness) in one or more limbs) but nociception (feeling/pain response) to the affected limbs is present, surgical prognosis usually is in the range of 80-90% to make a full recovery. It is important also to note in this group of patients that if there is no motor function of the limb(s), known as plegia, the recovery time may be longer. Prognosis does however decrease if a patient has the above-mentioned signs but does not have nociception (feeling/pain response). If the patient is taken to surgery within the next 24-48 hours the prognosis is roughly 50% for the pet to gain function in the affected limbs again with this number declining the further outside the 24-48 hour window the patient is.