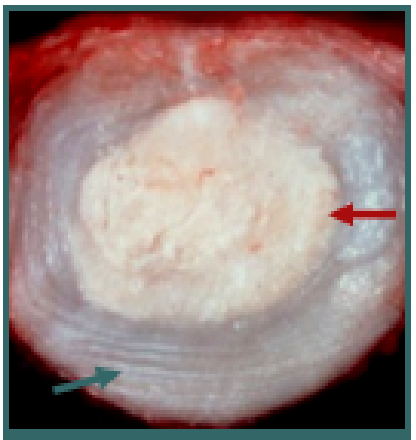
Cervical Intervertebral Disc Herniation

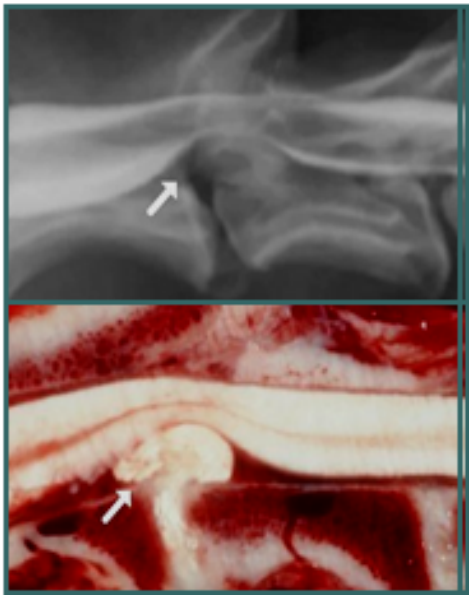


Cross section of an intervertebral disc. Annulus fibrosis (green arrow) and nucleus pulposus (red arrow).

Intervertebral disc disease is the most common neurologic disorder diagnosed in veterinary patients. Cervical (neck) disc disease accounts for about 15% of all canine disc herniations. The intervertebral disc functions as a shock absorber in between each vertebral body (individual bones of the spine). The disc is made of 2 components, an outer fibrous shell (annulus fibrosis) and a gelatinous center (nucleus pulposus). Herniation of the disc commonly occurs in one of two ways. The annulus can rupture extruding the gelatinous center into the spinal canal (referred to as a Hansen type I) or the annulus can hypertrophy or thicken and compress the spinal cord (referred to as a Hansen type II). In general Hansen type I extrusions are more common in smaller breeds. Hansen type II herniations are more common in larger breeds and can be a component of a more complex syndrome known as wobbler's disease.

Clinical Signs Most animals suffering from cervical disc herniation present with acute neck pain. They often have a stilted gait, a reluctance to move their head, and a lowered head position. About 10% of dogs will have tetraparesis (neurologic dysfunction of all 4 legs) and a portion of these animals will be non-ambulatory. Some dogs may present with one sided forelimb lameness known as a "root signature." This results from a disc herniation at the rear of the cervical spine impinging on the nerves providing function to the affected limb.

Diagnosis Plain radiographs (X-rays) are helpful but not completely diagnostic for cervical disc herniations. A myelogram, or contrast study outlining the spinal canal, is generally required to visualize a herniated disc, identify the disc space affected, assess the degree of spinal cord compression and potentially rule out other forms of spinal cord compression not associated with disc herniation. Computed Tomography (CT or CAT scan) and MRI are also available and helpful in diagnosing more complicated cases.



A myelogram (top) is a contrast enhanced X-ray study outlining the spinal cord allowing visualization of disc herniations.

A gross sagittal section (bottom) of a Hansen I disc herniation. Note the severe spinal cord compression in each image.

Treatment Treatment options for cervical disc herniations are often dictated by the patients history and presenting neurologic status. Patients presenting with mild neck pain or forelimb lameness may respond to conservative management. This is comprised of strict cage confinement for at least 4 weeks, anti-inflammatory drugs and muscle relaxants. Patients treated conservatively often have recurrence of their clinical signs in the future. Dogs presenting with intractable pain, neurologic deficits or recurrence following conservative treatment are candidates for surgical management.

TREATMENT: Surgical Management Surgical correction is accomplished via a ventral slot procedure. A ventral (underneath) approach to the spine is made and a small "slot" is made through the affected disc space and apposing vertebral bodies. Once access to the vertebral canal is gained, the herniated disc material can be removed. Some dogs (the minority) will have some instability between vertebral bodies and will require stabilization and fusion of the affected disc space.



A ventral slot procedure performed on a cervical spine model. The arrow indicates the "slot" made in the intervertebral disc space and apposing vertebral bodies.

Prognosis The outcome following surgical repair is variable based on the severity of clinical signs on presentation. Dogs with neck pain should show considerable improvement within a few days. In patients with neurologic deficits, it may take several weeks to regain function. Despite the proximity of vital neurologic structures, surgical complications are rare and the overall prognosis for a normal return to function is excellent.