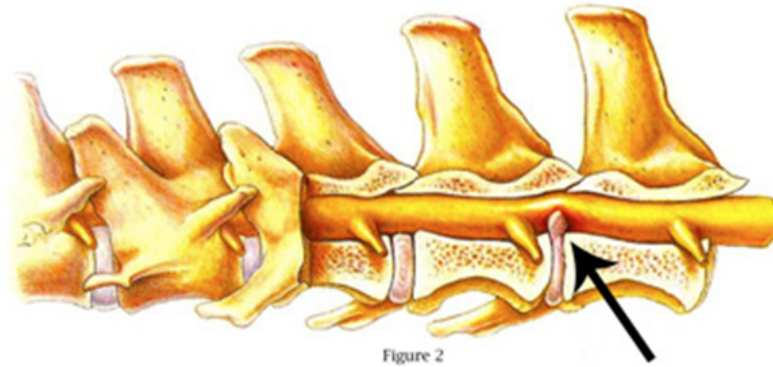


Acute spinal disease

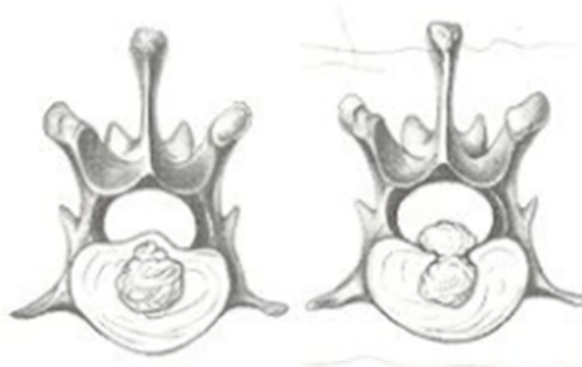
Intervertebral disc disease (IVDD)

Intervertebral disc disease is a relatively common condition in dogs, especially in certain breeds such as dachshunds and French bulldogs. In between each of the vertebrae there is a disc which acts as a shock absorber between the vertebra.



This disc is made of an outer fibrous layer (annulus fibrosus) and an inner soft fluid centre (nucleus pulposus). In certain breeds the centre can dry out which makes it more likely to protrude or herniate. As it is confined in a bony spinal canal, there is nowhere for the disc material to go, so it compresses the spinal cord. This causes pain and a delay in the messages up and down the spinal cord to the legs. Think of this as being like a “slipped disc” in people.

A good analogy is to imagine the jam (= nucleus pulposus) in the centre of a stale jam doughnut. Pressure causes the jam to force its way out through the outer dough ring (= annulus fibrosus), causing compression on the spinal cord, as seen in cross sectional image below.



Other possible but less common causes of acute spinal disease include:

- Fibrocartilaginous embolism (FCE)
- Acute non compressive nucleus pulposus extrusion (ANNPE)
- Vertebral bone fracture or malformation

- Degenerative problems (myelopathy)
- Tumours
- Infection, fluid cysts, hormone disease, parasites

Clinical signs

Spinal problems manifest themselves in various ways depending on how much damage or inflammation of the spinal cord there is, and where in the spine the problem is located. This may vary from mild discomfort to complete paralysis of one, two or all 4 limbs, or in extreme cases sadly may even result in death.

Dogs can present with the following signs:

- paresis (weakness) in the legs
- ataxia (poor coordination); walking like they are drunk
- knuckling the toes
- hunched back
- painful episodes, screaming out
- urinary +/- faecal incontinence
- loss of the ability to walk
- loss of movement of the legs
- loss of pain perception in the feet

Grading spinal cord injuries

Grade 1: Painful but not severe enough to result in any neurological dysfunction.

Grade 2: Paresis (weakness) with or without pain: as the lesion becomes more severe the degree of paresis and/or proprioceptive deficits becomes more severe.

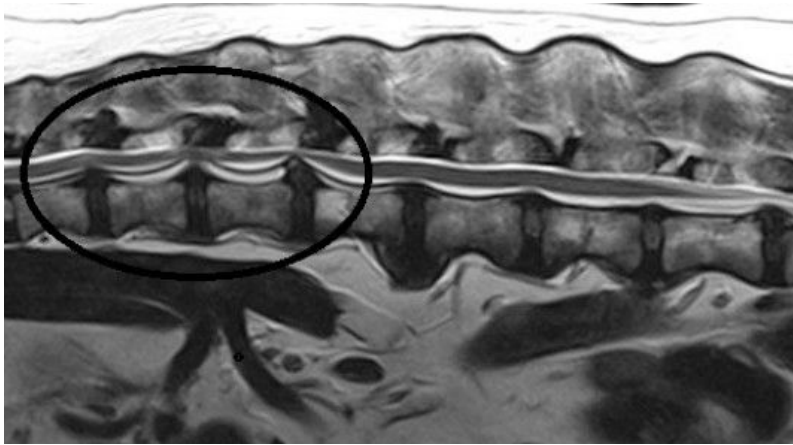
Grade 3: Plegia: inability to walk but still has some voluntary movement present in the affected limbs (and/or tail).

Grade 4: Plegia with loss of voluntary movement of the affected limbs and loss of voluntary urinary function.

Grade 5: Plegia with loss of voluntary urinary function and loss of conscious perception of painful stimuli (“deep pain perception”) in the affected limbs (and/or tail).

Diagnosis and Treatment

A CT myelogram (with a special dye injected in to the space around the spinal cord) or an MRI scan is required to diagnose spinal cord injury and to locate where surgery may be required.



MRI scan showing disc extrusions compressing the spinal cord.

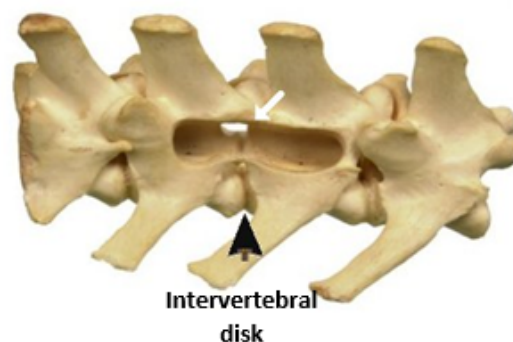
With some of the lower graded dogs, conservative management involving strict crate rest, anti-inflammatories and pain relief can be sufficient to treat an episode of acute spinal pain. In more severe cases, surgery will be indicated to allow the best possible chance of returning to normal (or near normal) function.

We cannot repair any damage already done to the nerve tissue of the spinal cord. Surgical treatment is aimed at first removing any compression of the spinal cord (“decompression”) in order to allow it to heal as much as possible, and secondarily trying to reduce the chance of this injury happening again at the same site.

Many animals will make excellent recoveries from this type of injury, although we can only advise about expected outcome on an individual basis. Spinal disease must always be considered to be a serious and potentially life-threatening problem. Rest and rehabilitation are essential to allow recovery, and we will advise you how best achieve this for your dog.

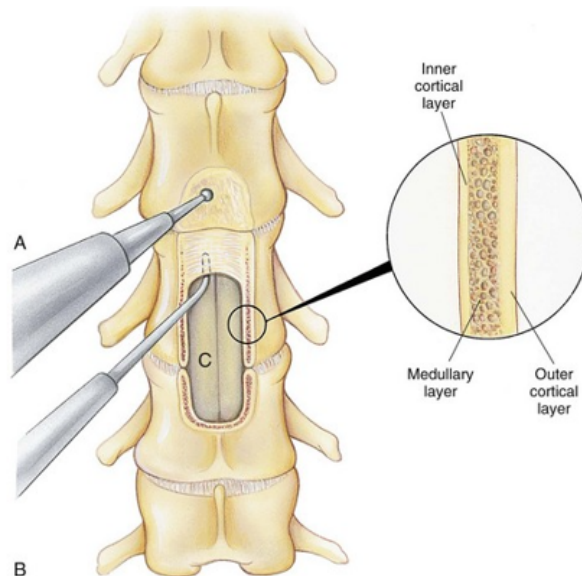
Hemilaminectomy and Ventral slot

Hemilaminectomy is the most common surgical treatment for intervertebral disc problems of the thoracic (upper) and lumbar (lower) spine, and occasionally of the cervical (neck) spine. It is a relatively safe technique, and is usually carried out at one single intervertebral space, but if necessary may be extended over a longer section of the spine.



A hemilaminectomy involves drilling away a window of bone from the side of the vertebral canal, allowing access to the spinal cord. We can then examine the spinal cord for bruising, remove any

“extruded” disc material and scrape any remaining abnormal material from the intervertebral disk space. The window also reduces compression on the spinal cord, allowing it to recover more quickly. The bone is not replaced afterwards, but will heal over with scar tissue. In the short term, the muscle and other tissues between the spine and the skin provide plenty of protection from injury to the spinal cord. However we do recommend a period of strict exercise restriction to allow healing to take place.



For compressive intervertebral disc disease of the neck, the spinal canal is approached from the underneath (ventral) side. This is called a ventral slot. Disc material can then be removed to decompress the spine.

Complications

- Further disc extrusion or protrusion. This can occur either at the original site or at an adjacent disc space.
- Infection, this is rare as there are normally no surgical implants.
- Bone fracture- very rare and normally due to extreme activity.
- Seroma- normally insignificant fluid accumulation after surgery, normally improves with no treatment.

Signs to watch out for

- Sudden worsening of clinical signs.
- Smelly, yellow or abnormal discharge from the wound.
- Extreme pain post surgery.
- Failure to improve after the surgery.

Post-operative care

1. Elizabethan (Buster) collar at all times for 2 weeks.
2. Medications as prescribed, this is normally anti-inflammatory pain relief for 4-6 weeks.
3. Restricted exercise. Your dog should be rested in a cage at all times except short lead walks to go to the toilet until the bone has healed. This normally takes 6-8 weeks.

Time after surgery	Exercise
First 2 weeks	3 x 5 minute lead walks
2-4 weeks	3 x 10 minute lead walks
4-6 weeks	3 x 15 minute lead walks
6-8 weeks	3 x 20 minute lead walks
8-12 weeks	Gradual return to normal activity
After 12 weeks	Normal activity

If you have any problems please contact your vet. It is better to have a recheck appointment when everything is normal than miss a problem. If everything is going as expected please schedule a post check appointment in 3 and 10 days after surgery. If you are worried about the wound then please contact us. Signs to watch out for include redness, heat, pain or significant worsening of any lameness.

A recheck appointment at 4- 6 weeks after surgery is highly recommended to check on your dog's progress.

Physiotherapy is an important part of recovery and rehabilitation after spinal surgery, and gentle exercises can usually begin within a few days after hemilaminectomy. Typical exercises include "passive range of movement physiotherapy" and "bouncing". We can show you how to carry out physiotherapy on your dog at the time of discharge. Hydrotherapy can also be beneficial but should not be started until the wound has fully healed and your vet advises this is appropriate for your dog.

To book in for your pet in for a health check, please call us on 01423 228080 or visit www.clarohillvets.co.uk.