

## Intervertebral Disc Disease (IVDD) in dogs SUMMARY

### What is Intervertebral Disc Disease?

Degeneration or damage of the compressive shock absorber (the disc) that lies between each vertebra (spinal bone). The result can be bulging (protrusion) or rupture (extrusion) into the spinal canal, causing compression and/or contusion of the spinal cord.

This is a problem as the spinal cord lies snugly within the spinal canal, with little additional room. Anything that squashes or pushes on the cord will lead to signs. Some breeds (e.g. Dachshunds, French Bull dogs, Beagles) are very commonly affected, but any breed can suffer from IVDD.

### Clinical Signs

The clinical signs will vary dependant on the location of disc that is causing the injury, severity of the damage, and the type of compression. Often, dogs present with back pain (hunched back, shivering, panting, unwillingness to move or settle and difficulty jumping or using stairs). This can progress to difficulty walking, poor control of the limbs, weakness or complete paralysis and being unable to urinate.

If IVDD is in the middle or lower spine, the back legs are affected. If it occurs in the neck region, the patient may have excruciating neck pain or weakness of all four legs.

### Diagnosis

IVDD is diagnosed through a combination of the dog's history, a neurological examination, and advanced imaging (MRI or CT). Any spinal injury is considered an emergency, and your pet needs to be referred and assessed by a Specialist Surgeon as soon as possible following the onset of clinical signs. Prognosis varies significantly with the degree of function remaining when the pet is evaluated and surgically treated. Delay in treatment can worsen the prognosis. The most important factor is the initial impact of the injury, that will determine the prognosis or recovery of the spinal cord function.

Other types of non-surgical, spinal cord injuries may result from non-compressive disease processes where there is direct injury (acute non-compressive or high velocity and low volume extrusion) or compromise to the blood supply of the spinal cord. Fibro-cartilagenous embolism (FCE) is similar to a "stroke" in the brain and involves the interruption of the blood supply to an area of the spinal cord by a small embolism. This disease requires MRI for diagnosis and is not surgical.

**Treatment options** include surgery, or non-surgical options (rest, pain relief, and anti-inflammatories). The recommended treatment is based on the stage and grade of the disease. The more severe the signs, the more likely that surgery will be required for successful treatment if a compressive lesion is present.

Recovery is not always possible. It is dependent on how strong the initial impact was and how long the sensation of pain has been lost.

### What does surgery involve?

Most commonly, it is a decompressive procedure that removes the extruded disc material compressing the spinal cord. The procedure involves burring away part of the vertebrae allowing access to the spinal canal to remove the damaged disc material relieving the pressure placed on the spinal cord.

## When will we know if the surgery is successful?

Unfortunately, success cannot be determined immediately. The return of neurological function, walking ability, and relief from pain may not occur for several days to weeks after surgery. Many animals will feel much better immediately after surgery, but others take longer to improve.

Sadly, some patients will have irreversible spinal cord damage that cannot be detected before or during surgery, but until 3-14 days post the onset of clinical signs. Progressive myelomalacia starts to occur at the time of the injury and is not always seen at the time of surgery. This condition is progressive and irreversible damage to the spinal cord that results in death. The risk of myelomalacia is higher in patients with paralysis, but this can also occur in patients with paresis (weakness but without paralysis).

Complications can occur at surgery, including haemorrhage (bleeding) in and around the spinal cord. This may worsen the chance of a successful surgery.

**Postoperative care:** In most cases, your dog will stay in hospital until they have regained bladder function. It may take days, weeks or months for them to regain the ability to walk and this depends on how severe their signs were before surgery. The prognosis following surgery is directly related to the neurological status and duration of clinical signs before surgery but unless they are very severely affected (loss of deep pain sensation), about 85-90% of dogs will achieve a functional outcome after spinal surgery for IVDD. Some animals may deteriorate or not improve (10-15%) despite surgery.

Post operative care may involve:

- Crate or cage confinement with restricted and controlled exercise
- Physical therapy
- Assistance with toileting

## Other conditions that can present and show similar signs to IVDD include:

- Vertebral Fractures
- Spinal masses or tumours
- Blood clots
- Infection
- Inflammatory diseases
- Acute bilateral cranial cruciate ligament rupture
- Acute abdominal pain (e.g., acute pancreatitis)

