

Lumbosacral Disease, Degenerative

A. Courtenay Freeman, DVM

Marc Kent, DVM, DACVIM (Small Animal and Neurology)

Simon R. Platt, BVM&S, MRCVS, DACVIM (Neurology), DECVN

BASIC INFORMATION

Description

Degenerative lumbosacral disease is a neurologic disorder involving the joint between the last (seventh) lumbar (L7) vertebra in the lower back and the sacrum. The sacrum is the bone that lies between the lumbar vertebrae and the tail bones and is attached to the pelvis.

Causes

The lumbosacral area is a complex joint that surrounds the spinal cord within the pelvic region, provides mobility to the lower back, and attaches the vertebral column to the pelvis. The following parts of this complex joint are involved in the disease process:

- Degeneration of the intervertebral disc at L7 leads to protrusion (bulging) of the disc into the spinal canal. (See also the handout on **Intervertebral Disc Disease**.)
- The vertebral processes overlying the top of the vertebral canal in this area degenerate and develop arthritis.
- The ligaments surrounding this area become thickened.
- The joint may become unstable and even subluxate (partially dislocate).

The end result of these degenerative changes is compression (squeezing) of the spinal nerves that go to the hind legs, rear end, tail, bladder, colon, and rectum. Older to middle-aged, large-breed dogs are most commonly affected, particularly the German shepherd dog.

Clinical Signs

Pain over the lumbosacral region (pelvic region, base of the tail) is the most common sign. Other signs include a reluctance to jump, climb stairs, or rise from a lying position. Hind leg weakness, a crouched stance, paralysis of the tail, and urinary and fecal incontinence may also occur. The degree of pain and neurologic signs varies with the severity of the compression.

Diagnostic Tests

The condition may be suspected in a dog of a typical breed and age with compatible neurologic examination findings. However, clinical signs are not very specific for degenerative lumbosacral disease. Other diseases, such as vertebral malformation, infection, trauma, and cancer, can cause similar neurologic findings. Some orthopedic conditions of the hind legs, such as arthritis of the hips (hip dysplasia), can also mimic the disease.

X-rays are often performed. They help to rule out orthopedic problems but rarely provide a definitive diagnosis of lumbosacral degeneration. Computed tomography (CT scan) offers more detailed images of the L7 disc space and can also demonstrate compression of the spinal nerves within the spinal canal. Magnetic resonance imaging (MRI) provides the best detailed evaluation of the spinal nerves,

intervertebral disc, and vertebrae in this area. Other tests may be recommended to rule out diseases that cause similar clinical signs.

TREATMENT AND FOLLOW-UP

Treatment Options

Treatment options involve conservative and surgical therapies. Conservative therapy is often pursued if pain is the only clinical sign. Surgical therapy is often used in dogs with more severe neurologic signs, such as hind leg weakness, bladder and bowel incontinence, and tail paralysis. Dogs that do not respond to conservative therapy may also need surgery.

Conservative therapy consists of exercise restriction, anti-inflammatory drugs, and medications to relieve pain:

- Exercise restriction involves strict confinement and limited leash walking (for urinary and fecal elimination only).
- Dogs should not be allowed to run, jump, or play during this period of confinement.
- Exercise restriction typically lasts 4-6 weeks and is followed by a gradual return to normal activity over an additional month.
- Anti-inflammatory drugs, such as nonsteroidal anti-inflammatory or steroid medications, can be used. These two classes of drugs are not used together because of their combined side effects.

When surgery is done, the goal is to eliminate compression of the spinal nerves:

- Surgery involves opening the vertebral canal over the site of compression, which is called a *dorsal laminectomy*.
- Compression is relieved by removal of the herniated intervertebral disc.
- Occasionally, the lumbosacral joint is stabilized (fused) after the decompression.

Follow-up Care

Recovery time varies depending on the severity of the clinical signs. Time to recovery following surgery is 1-2 weeks, but severely affected dogs may require months for full improvement. Maximal improvement occurs by 3-4 months. Periodic rechecks are often needed throughout this period.

Prognosis

Prognosis depends on the degree of neurologic signs. Dogs with pain as the sole clinical sign typically respond well to conservative therapy. Most dogs treated surgically also improve. The outcome in dogs with severe neurologic problems (such as severe hind leg weakness or fecal and urinary incontinence) is less predictable. The most common long-term complication of lumbosacral degeneration is recurrence of clinical signs, so notify your veterinarian if any signs worsen or reappear.