

What is cauda equina syndrome?

Cauda equina syndrome (CES) is caused by compression of the nerve roots passing from the lower back toward the tail at the level of the lumbosacral junction. The most common cause of CES is narrowing of the vertebral canal at the level of the lumbosacral joint (called lumbosacral stenosis).

Lumbosacral stenosis is most commonly caused by degenerative changes to the intervertebral disc, arthritis of the joints, and abnormal proliferation of the ligaments. Dogs with abnormal shape to their last lumbar or sacral vertebrae and German Shepherd dogs are predisposed to developing lumbosacral stenosis. Neoplasia (cancer) and infection at the level of the lumbosacral disc (discospondylitis) may also cause signs of CES.

What are the symptoms of cauda equina syndrome?

The most common neurologic sign associated with cauda equina syndrome is pain in the lower back. Signs of pain may include decreased willingness to jump up and climb up stairs, low tail carriage or reduced tail wagging, difficulty posturing to defecate, and whimpering/crying if the lower back is touched. In some cases, dogs will have a weakness or lameness in one or both hind limbs—this occurs secondary to compression of the nerve root that supplies the sciatic nerve as it exits at the lumbosacral joint. If the compression of the nerve root causes significant pain, dogs may hold up a limb after exercise or cry out. Severe compression of the nerve roots can lead to fecal and urinary incontinence, which is irreversible in most cases.

How is it diagnosed?

The first step in diagnosing cauda equina syndrome is through a neurologic examination. The doctor will observe the dog's gait for any lameness and/or stiffness. A physical examination will include palpation over the spine to determine the site where the dog is most painful. Manipulation of the hips and tail will elicit pain response in most dogs suffering this syndrome. The doctor will also test reflexes, proprioception (foot placement), and anal tone. Radiographs are taken to look for abnormal shape of the lumbosacral joint, spinal arthritis at the lumbosacral joint, infection of the disc space, or tumors. An MRI is the preferred imaging test to examine the nerve roots. In some cases, CT is used to better visualize the bone in dogs with lumbosacral disease.

How is it treated?

The treatment for cauda equina syndrome directly correlates to the degree of the symptoms. Dogs that are exhibiting mild pain and have never had an episode of back pain before are usually treated with strict rest and pain medications. In cases where the dog is not responding

to conservative medical therapy or exhibiting neurologic symptoms, surgical intervention is necessary. The procedure is called a dorsal laminectomy and involves removing the “roof” of the spinal canal to release the entrapped nerve roots and remove the associated ruptured intervertebral disc, if present. If necessary, a foraminotomy is performed to open the nerve root canals and relieve the entrapped nerve roots. In some cases, if there is significant instability at the lumbosacral joint, the joint is surgically stabilized with pins and bone cement.

What is the post-operative prognosis?

Prognosis is very good in dogs with mild neurologic signs (i.e. pain only, mild weakness). Dogs with severe nerve root compression and subsequent urinary or fecal incontinence have a very poor prognosis, and the majority of dogs never become continent again—even with surgery. Surgery can work to alleviate the pain in these dogs, however.

Many dogs with lumbosacral disease have other back problems (i.e. chronic intervertebral disc disease) and hip or other orthopedic disease, which can affect their recovery after surgery. Recovery is also slower in overweight dogs, and obese patients must be put on a strict diet to reduce their weight.

Strict cage rest is critical to a good surgical recovery. Specific complications that can occur after surgery include formation of a fluid pocket or scar tissue that compresses the nerve roots or fracture of the bones at the surgery site. Dogs that are overly active after surgery are much more likely to develop complications.