# DISCOSPONDYLITIS

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Discospondylitis is an infection involv-ing the intervertebral discs and adjacent vertebral bodies. Primarily spread by the hematogenous route, bacterial and fungal organisms are the primary causative agents. Although not common, Brucella canis should be included in the list of causative agents, mostly because of its zoonotic potential. Most reports identify large-breed, male, middle-aged dogs to be affected more commonly.

Clinical signs can be vary according to the degree of inflammation and spinal cord or nerve compres-sion. Early signs include pain upon jumping or rising, decreased appetite, lethargy and fever. Many dogs will not have neurological deficits, or may show mild progression with weakness and proprioceptive deficits. In some cases paralysis can develop with increasing inflammation and spinal cord compression. Although uncommon, this con-dition has been reported as a complication following spi-nal surgery.

Any vertebral area can be affected, although the mid to caudal thoracic and the lumbo-sacral space are more common. Many times there is more than one area which develops the infection, and physical exam should include careful evaluation of all areas of the spinal column.

Diagnosis can often be made, or highly suggested, on plain radiographs (Figures 1 and 2). The earliest radio-graphic sign of discospondylitis is narrowing or collapse of the affected intervertebral disc space. Additional signs include bone lysis of the end-plates, varying degrees of spondylosis and bone reaction, and sclerosis of the end-plates and body.

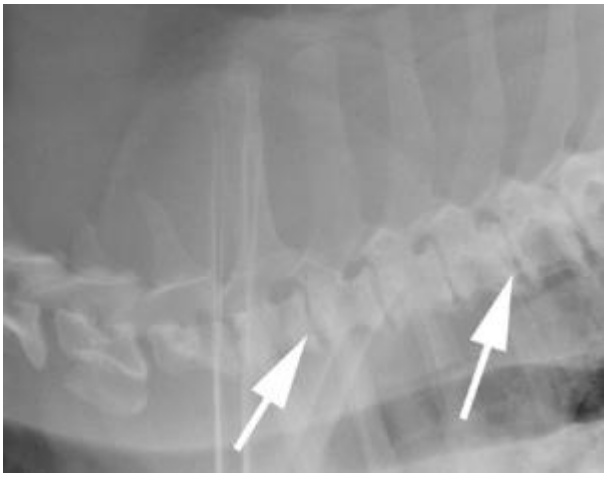

Figure 1: The white arrows point to mildly irregular endplates at T1-2 and T4-5.

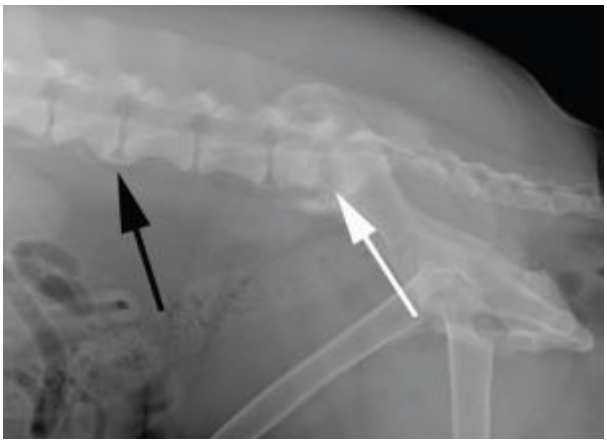

Figure 2: The white arrow points to the abnormally widened LS disc space and mildly irregular endplates, suspicious for discospondylitis. The black arrow points to smooth bone proliferation ventral to the L4-5 disc space that represents ventral spondylosis deformans, which is very common and ususally not clinically significant; note the smooth and distinctly marginated endplates at this level.

Additional imaging: CT, MRI, or myelography, can be very beneficial for diagnosis, especially in cases where the radiographic changes are more subtle (Figure 3).

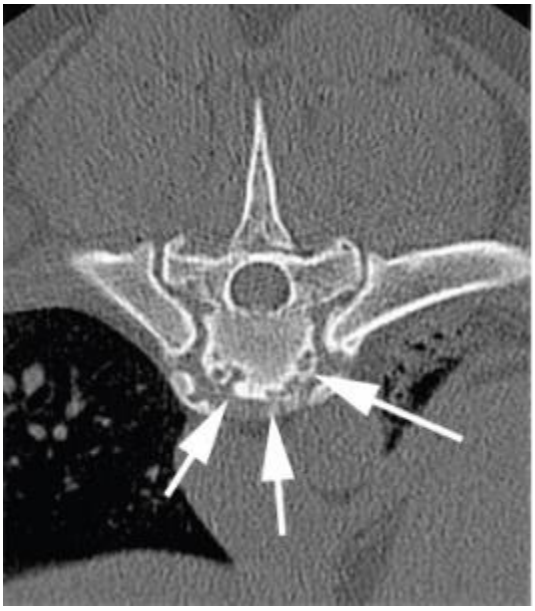

Figure 3: Axial CT at the level of a thoracic vertebral body endplate: the white arrows are pointing to circular lucencies corresponding to discospondylitis.

Advanced imaging can also allow evaluation of the associated disc and nerve roots, and help determine if surgical decom-pression may benefit the patient. Although many cases can be treated successfully with medical management alone, some dogs will have disc degeneration and com-pression or instability that responds well to surgery.

Tests should be done that try to identify the causative organism. Urine and blood cultures, along with blood titers to test for Brucella and fungal disease are recom-mended. Culture of the cerebrospinal fluid can be done, although this has a low yield for positive results. Ultra-sound, fluoroscopic-assisted aspirates, or discectomy can give good results but may require special equipment. In many cases neither the source nor the agent is definitively

identified, and empirical therapy using a broad-spectrum antibiotic which has good bone penetration is initiated. If the treatment is correct, most dogs will show a posi-tive clinical response within 7-14 days, and therapy is usu-ally continued for a minimum of 3 and up to 6 weeks, or more. Pain medications and non-steroidal anti-inflamma-tories can be beneficial; the use of steroids is contraindi-cated. Radiographs can be used to monitor healing, as well as resolution of clinical signs. The lysis of the end-plates will stop and fill in, and bridging or fusion of the affected space will occur. These changes may take one to 3 months to appreciate radiographically.

Prognosis is often based upon the degree of neurologi-cal signs and deficits, and response to treatment. Dogs with no neurological deficits and positive therapeutic response tend to have a good prognosis; those with severe paresis or paralysis can have a guarded prognosis for recovery. Surgical decompression and/or stabilization can provide a good outcome in select cases.
Magnetic resonance imaging features of discospondylitis in dogs. Carrera I., et al University of Glasgow. Vet Radiol Ultrasound. 2011 mar- Apr;52(2): 125-31.

Described the magnetic resonance imaging (MRI) findings in 13 dogs with confirmed discospondyli-tis. The involved endplates and adjacent marrow were T1-hypointense and hyperintensity in short tau inversion recovery(STIR) images in all dogs, and all dogs had con-trast enhancement of endplates and paravertebral tissues. The intervertebral discs were hyperintense in T2W and STIR images and characterized by contrast enhancement in 88%. Subluxation was present in 2 sites. MRI increases lesion conspicuity in early discospondylitis that may not be visualized by radiography.
Treatment of 10 dogs with discospondylitis by fluoroscopy-guided percutaneous discectomy. Kinzel S, et al. Vet Rec. 2005 Jan 15; 156(3): 78-81.

Ten dogs with discospondylitis were treated by percu-taneous discectomy and local and systemic antibiotics. Using fluoroscopy, a 5 mm cylinder was removed from the affected intervertebral space, which provided fenestra-tion and disc decompression without instability. The caus-ative

bacteria was identified in 9 of 10 specimens, but in only three urine cultures and four blood cultures .Clinical signs showed improvement after 2 to 9 days of treatment, and signs resolved after 5-14 days.
Surgical treatment of lumbosacral instability caused by discospondylitis in four dogs. Auger J. et al. Vet Surg. 2000 Jan-Feb;29(1):70-80.

Four dogs had lumbosacral discospondylitis which did not respond to medical treatment. Surgery was per-formed which involved distraction and stabilization of the lumbosacral vertebral segment using an external skel-etal fixator. Three of the dogs had a cancellous bone graft placed at the space to allow for fusion. All four dogs were clinically normal at the time of fixator removal. All were also treated with antibiotics for four weeks.

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