

Discospondylitis

Discospondylitis is a bacterial or fungal infection of the intervertebral disc and neighboring vertebral endplates. Intervertebral discs are located between vertebrae in the vertebral column, or spine. Vertebral endplates are the ends of the bones that make up the vertebral column.

While discospondylitis can occur in any animal, it is generally a disease of dogs. Large, young, intact male dogs are more likely to get discospondylitis, such as: Great Danes, German Shepherd Dogs, Boxers, Rottweilers, Doberman Pinschers, and English Bulldogs.

Signs

Pain along the spinal column is the most common clinical sign, with more advanced cases presenting with neurological symptoms.

Signs of discospondylitis may include:

- Vocalization when touched along the back
- Reluctance to move or do routine activities
- Hiding behaviors
- Stiffness
- Trembling
- Lethargy
- Fever
- Lack of appetite
- Weakness
- Incoordination
- Paralysis in severe cases

Causes

There are a few possible ways bacteria or fungi can reach intervertebral discs and vertebral bones to cause discospondylitis:

1. Hematogenous spread is the most common cause of discospondylitis and happens when bacteria or fungi are carried by the bloodstream through the intervertebral disc space.

2. Direct contamination can occur from a deep puncture wound over the spinal column, although surgical procedures involving the spine may also result in the infection.

3. Migrating foreign bodies, such as a grass awn, contaminated with bacteria or fungi may enter the body through inhalation, ingestion, or a wound and migrate to the spine.

Infections are most frequently bacterial such as *E. coli*, staphylococcus, streptococcus, and (less frequently) brucella. However, German Shepherd Dogs are prone to fungal infections, such as aspergillus.

Diagnosis

Although the intervertebral disc cannot be seen on an X-ray, discospondylitis causes changes in the adjacent bony vertebrae including narrowed or widened disc space and irregular or destroyed vertebral endplates. However, clinical signs must persist for two-six weeks for these changes to show up.

Magnetic resonance imaging (MRI), on the other hand, doesn't require bone destruction to be diagnostically helpful. It is far more sensitive and can detect subtle changes in soft tissue, such as the intervertebral discs and spinal cord. MRI is also helpful in planning for surgery, if necessary.

Once imaging confirms discospondylitis, the next step is determining whether the infection is bacterial or fungal and, if possible, which organism is at fault in order to select the most appropriate treatment. This may include blood and urine cultures, biopsies, and testing for a very serious bacterial infection called brucella that can spread to humans.

Treatment

There are four main areas of treatment in cases of discospondylitis:

1. Pain management may include anti-inflammatory and/or nerve pain medications, generally removed over a few weeks to months as the patient starts to recover.
2. Clearing the infection requires antibiotics or antifungal medications depending on the infection. Sometimes, we may not actually find the organism, but can gauge whether the infection is bacterial or fungal based on response to treatment. Treatment takes at least six months, but we typically treat patients for up to a year, as it is extremely difficult to clear infection from bone. In some cases, treatment can be required lifelong.
3. Supportive care may consist of recumbent care including changing positions, assistance with eating and drinking, bladder expression, and passive range of motion (PROM) exercises. Because patients may develop spinal fractures or luxations, supportive care should also consist of activity restriction including crate rest, sling walks, gentle handling, and maintaining a low-impact lifestyle.
4. Followup appointments are critical, because relapses are highly possible. Fairly frequent rechecks to monitor patients for pain and neurological improvement as well as repeat imaging and cultures are typically necessary to make sure the infection has cleared completely.

If there is spinal cord compression or disease progression despite treatment, surgery may be suggested to decompress the spinal cord or collect samples from the intervertebral disc for culture.

Prognosis

Discospondylitis generally has a fair to good prognosis. However, prognosis can be fair to poor if suffering from a fungal infection, spinal fractures or luxations, or severe neurological signs such as paralysis.

Bacterial discospondylitis can often carry a good prognosis with early and aggressive treatment. Cases of brucella may require lifelong antibiotic therapy, but it is still possible for these patients to have a good quality of life.

Fungal infections are more worrisome. Fungal discospondylitis has a guarded to fair prognosis. While many dogs respond to medication, some do not. And even among the dogs that do, many require lifelong treatment.



Learn more about
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