

## An Overview of Spinal Disease in Dogs – Laura Munro

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The inspiration for this month's column came from a phone call. A woman with an 8-year old Dane called because her vet had told her the dog had wobblers. A friend referred her to me because I have some experience with this condition.

This dog was rescued from horrific conditions, and was placed in the care of this wonderful woman. She has had this dog for a couple of years and this condition came on very recently. I discussed the dog's condition with her and related my experience with wobblers to her. After talking to her, I don't think her dog has wobblers at all, but instead has some age-related or possibly injury-related condition that has some of the same symptoms as wobblers.

This led me to the conclusion that "wobblers" is a catch-all phrase used to describe a myriad of conditions in dogs and not one specific disease process. And that conclusion, led me to read up on spinal diseases in dogs. This month I bring you a general summary of my readings.

There are several classifications of spinal disease in dogs. Wobblers syndrome, and the various disease processes that fall under that term, is just a subset of this group.

**Degenerative Myelopathy** is a specific spinal disease that typically occurs in mature dogs. It presents with rear leg weakness. It can be equilateral, but one side can be more affected than the other. It is distinguished by a difficulty in moving as opposed to an inability to control movement. It is progressive and while it generally starts in the rear limbs, it will eventually involve the forelimbs and the brain stem. It is not normally associated with pain and bladder and bowel function remains intact. Symptoms include decreased mobility and dogs often drag their feet. There are other diseases which can present with very similar clinical signs, so this disease can't be

definitively diagnosed on the clinical signs alone. This is genetic and there is a DNA test for it at the University of Missouri.

**Intervertebral Disk Disease (IVDD)** includes a multitude of degenerative conditions. These conditions may be age-related or trauma-related but often involve genetic-related predispositions. Premature degeneration of the spinal elements predisposes disks to damage and injury.

Essentially, the disk loses moisture, becomes less flexible and effective at cushioning the spine from shock and eventually breaks down. It can result in shifting of the vertebral tissues, compression and inflammation of the spinal cord, the membranes covering the spinal cord and the nerve roots. There are many different symptoms that can develop from this type of disease. How the disease presents will influence the treatment options and prognosis for the dog.

**Wobblers Syndrome** is another disease that includes multiple forms, but these are specific to the cervical vertebrae. The term, "Wobblers" primarily describes four types of cervical abnormality.

1. Vertebral malarticulation/malformation (misaligned/malformed vertebrae),
2. Intervertebral disk extrusion/protrusion (disk-based compression),
3. Articular Facet Disease (degeneration of the joint surface) and
4. Spinal Ligamentous Disease (weak ligaments).

Wobblers is a condition where the cervical vertebrae are misaligned, are abnormally formed, subluxate due to weak ligaments or where degenerating spinal tissues cause a narrowing of the spinal canal. It typically presents with an unsteady or "wobbly" gait, which is how it came to

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be known as “Wobblers”. To me it looks like the dog is wagging its hocks as it walks.

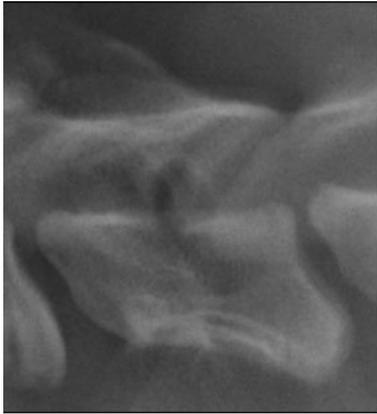


Figure 1

Figure 1 shows an x-ray of the 6<sup>th</sup> cervical vertebrae of a 7-month old Great Dane with Wobblers. Notice the relative uniformity of the top of the vertebrae and the spacing between it and the vertebrae to the left. Now notice the front of the 7<sup>th</sup> cervical vertebrae to the right. You can see that the top of this disk is not aligned with C6 and the space between C6 and C7 is irregular.

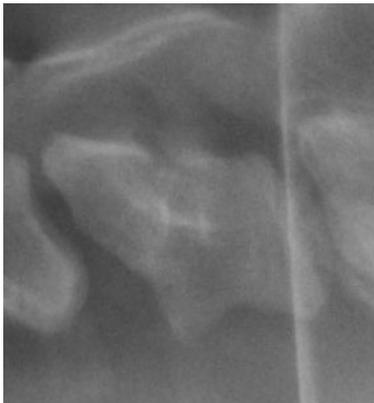


Figure 2

Figure 2 is centered on C7 where you can better see the misalignment of the vertebrae resulting in compression on the spinal column and on the disk between C6 and C7. Compare this disks position and shape with the one in Figure 1. The irregularity

of the space between the two disks is easily seen in this view as is the narrowing of the spinal canal. Figure 2 demonstrate the “classic” presentation of this disease in Great Danes.

There are two basic clinical forms of Wobblers Syndrome. One that typically occurs in middle-aged to elderly dogs and another that typically is found in younger dogs, often less than one year of age. Doberman Pinschers commonly get the first form, while the latter form is more typical in Great Danes.

The form of Wobblers that is associated with senior dogs typically presents with compression on the spinal cord primarily located in the lower part of the cervical column. In this case, spinal compression is rarely the result of abnormal formation of the bone. Instead, it is commonly due to enlargement and/or protrusion of the soft tissues.

In younger dogs, the compression is more commonly due to enlargement of joint capsules and supporting ligaments. As seen in the x-rays shown above, in Danes it is typically a result of a dorsal misalignment of the bone that compresses the spinal column. The instability can cause dynamic compression with change in neck position. In other words, as the dog flexes and extends its neck, the level of compression can increase or decrease. This can be seen by manipulation of the neck during an MRI or Mylegram.

**Lumbosacral Disease** is a term that defines various disease of the lumbosacral spine. It is also known as Cauda Equina Syndrome. It can be due to misaligned and/or abnormally formed disks, but is more commonly due to disk degeneration that leads to a protrusion of tissue into the lumbosacral joint space. It is sometimes associated with OCD lesions in the 7<sup>th</sup> lumbar vertebrae (L7). Lumbosacral disease results in compression of the nerves of the cauda equine. Surgical treatment may

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be an option, but it is typically more successful in mild cases.

**Spondylosis Deformans** is commonly seen in middle-aged to older dogs. It is believed to be an age-related, degenerative abnormality. It can be found in all positions along the spine. Bony abnormalities can be found in young animals, but that is uncommon. The cause may be due to mild vertebral instability and associated damage. It can be painful and can present with limb dysfunction.

**Neoplasia** refers to tumors in the spine. Depending on the location and position, these tumors can have a variety of effects on the comfort and mobility of the dog. The tumors are categorized by the position in the spinal tissues. Faster growing, more aggressive tumors can expand and extend across multiple regions. These tumors are also characterized by their place of origin – those that start in the cells of the spine and those that metastasize from cells in another location. The characteristics of the tumor will determine if it is local or systemic and will influence the treatment and prognosis. Knowing where it started and where it is located will help determine the type of tumor it is. The most common are osteosarcoma, fibrosarcoma, chondrosarcoma, and hemangiosarcoma.

There are quite a variety of spinal conditions we might see in a dog. Definitive diagnosis can be invasive and quite expensive. Traditional treatment can be even more invasive and costly, and often has limited success. There are a number of holistic modalities for treatment – acupuncture, chiropractics, joint supplements, gold bead implants and water therapy are some of the alternative options available. Although less invasive, they are not necessarily less expensive and have varying success rates as well.

I had a couple of older dogs that were somewhat arthritic and had acupuncture. The trip to the acupuncturist was hard on the older of the two. I wasn't sure if the acupuncture was actually helping but being undone by the stress of the trip there and back. I've found that joint supplements have worked well with older arthritic dogs, and have even helped with age-related degenerative disease of the spine.

I saw definite improvement in a wobbler after acupuncture. The dog was also put on a holistic diet and Chinese herbs. This was not an inexpensive course of treatment. After about a year, when the dog was done growing, I had to wonder if there was any continued benefit to continuing this course of treatment. Plus the cost was getting prohibitive after so many months. I gradually took her off the acupuncture, then the supplements and finally the diet. It's been almost 2 years since I stopped the treatment and her condition has deteriorated slightly, but she is still very mobile, active and happy.

It's difficult and costly to get a definitive diagnosis for spinal problems in dogs. It's much easier to make an assumption based on clinical observation and/or results of treatment. Maybe the cost and complexity of the diagnostic process leads us to generalize these problems a bit more than is reasonable. It seems far more likely that the dog that was described at the beginning of this article has Degenerative Myelopathy or IVDD, but without having history on the dog, it was labeled "Wobblers" by the vet.

The assortment of diseases, symptoms and treatments can be quite overwhelming. The lesson from my experience with several elderly dogs, injured dogs and dogs with congenital spinal defects is to consider the condition and treatment options carefully. Don't be afraid to explore alternatives and please, share your experiences!