Cervical Spondylomyelopathy

ABOUT THE DIAGNOSIS

CAUSE: In dogs and cats, the vertebral column is a series of back bones (vertebrae) that extends from the base of the skull to the tip of the tail. Dogs have seven vertebrae in the neck. These are called cervical vertebrae. Between the vertebrae are discs that act as cushions to prevent friction between the vertebrae. The vertebrae protect the spinal cord that runs through them.

Cervical spondylomyelopathy (also called caudal cervical spondylomyelopathy, cervical vertebral instability, and "wobbler syndrome") is a disorder of the cervical vertebrae or discs. It occurs mainly in large-breed dogs, rarely in small-breed dogs, and is essentially nonexistent in cats.

The fundamental problem in cervical spondylomyelopathy is an instability of the vertebrae, which allows them to shift and move abnormally in relation to each other. Additionally, in some instances the discs are weakened and damaged. Either way, a hard structure (vertebral bone or disc) shifts or slips when the dog moves and compresses the spinal cord. Since the spinal cord sends nerves to the legs, the spinal cord pressure caused by cervical spondylomyelopathy produces varying degrees of an uncoordinated gait: stumbling, dragging the top side of the paws (the "knuckles") on the ground, or tripping/leg-crossing when walking are common symptoms. Some severely affected dogs are unable to rise to a standing position. The hindlimbs are usually affected more than the front limbs. The dog may be reluctant to raise the head because doing so causes neck pain.

This disorder is progressive (worsens over time) and most commonly occurs in Great Danes and Doberman pinschers, but other large and giant breeds can be affected. The cause is unknown. It can be present at birth (congenital) or may affect middle-aged to older dogs.

DIAGNOSIS: Your veterinarian will take a complete medical history from you about your dog, including asking you about the nature of your dog's symptoms, their duration, and any medications you have given (and any observed effects). Your veterinarian will also perform physical and neurologic exams, which are simply examinations involving palpating (feeling with the fingers) different muscles and organs. The neurologic exam can help to pinpoint the location of the problem and includes watching your dog walk and assessing several reflexes (e.g., tapping below the kneecap to observe the strength of the kick).

X-rays and myelography are also important. Myelography is a technique that involves injecting a dye into the fluid canal around the spinal cord, which allows x-rays to identify compressed areas of the spinal cord that are otherwise invisible on regular x-rays. This information is required to help determine if surgery needs to be performed and if so, the exact location and extent of surgery. Dogs need to be under general anesthesia to have a myelogram. Veterinarians will usually need to refer you to a veterinary specialist if a myelogram and surgery are to be performed because of the need for specialized equipment. Nowadays, many specialty referral veterinary hospitals use computed tomographic scanning (CT or CAT scan) or magnetic resonance imaging (MRI) instead of myelography, but for dogs, general anesthesia is still required for these scans.

LIVING WITH THE DIAGNOSIS

There are several conservative measures that you can take that may make your dog more comfortable once the diagnosis is made. The goal of these measures, which are appropriate in mild cases, is to help reduce pain and help improve function of the limbs without resorting to surgery. These measures include strict cage rest (i.e., avoiding all outdoor activity except three 3-minute walks each day for urinating and defecating), wearing a neck brace, and allowing only short walks on a harness (not a collar) for several weeks. Antiinflammatory medications are often prescribed at this time as well. You may notice progress at the end of this period if the conservative measures have been effective; however, it is important not to allow a dog with cervical spondylomyelopathy to resume full activity, because a relapse to the same state as before, or worse, can occur. Rather, some degree of restricted exercise, to be discussed with your veterinarian and tailored to your dog's individual activity level and character, usually is necessary long term (months, sometimes lifelong) (see Treatment below).

If no improvement is apparent after this conservative type of treatment, surgery is usually recommended.

TREATMENT

Surgery is usually the treatment of choice because it offers the best chance of long-term success. The goal of surgery is to remove the hard tissue that is compressing the spinal cord, since this is the best way of relieving pain long-term and of minimizing neurologic deficits like incoordination of the legs and paralysis. The exact type of surgery is tailored for your dog's particular needs.

After surgery, the healing period usually takes several days to a few weeks. It is common that for the first few days after surgery, the dog's ability to stand and walk is even worse than before the surgery; this is to be expected as a result of the surgical manipulations round the spinal cord and improvement should be apparent a few days (sometimes a week or so) after the surgery. Some dogs may need to wear a body cast to prevent movement in the neck while it heals. Therapy that can be performed at home to help with the recovery process includes physical rehabilitation exercises, short walks several times per day, or the use of a cart or sling for dogs unable to walk. Be sure to review these with your veterinarian before starting them; correct exercises are very helpful during recovery, but incorrect or inappropriate exercises can cause more harm than good.

Progress is intentionally slow, to allow healing and recovery over a period of weeks. The long-term outlook (prognosis) depends on many factors including the stage of cervical spondylomyelopathy in your dog before surgery and appropriate postsurgical care. Surgery does not carry a guarantee that a dog with cervical spondylomyelopathy will fully recover from this disorder but in dogs with a confirmed diagnosis of cervical spondylomyelopathy (based on the myelogram, CT scan, or MRI) and symptoms of pain or walking abnormalities, surgery generally offers the best chance at long-term improvement. As with any surgery or procedure, complications are possible, and you should discuss the possibility of these, and best ways to avoid them, with your veterinarian prior to the surgery if possible. One potential future complication is the development

of problems in vertebrae adjacent to those treated surgically, causing a return of symptoms and sometimes the need for another surgical procedure.

Nonsurgical or conservative treatment with strict cage rest for several weeks and antiinflammatory medication is an option in a small number of dogs; however, it is important to understand that this disease is active and therefore that symptoms, once they have occurred, are likely to recur. Therefore, extremes of exertion and any other activity that increases movements of the neck and body should be minimized or avoided, and this type of conservative approach should really only be considered if the cost of surgery is prohibitive, or if the physical burden of recovery (carrying, supporting, and handling the dog for weeks after surgery) is excessive, as it can be in large, heavy dogs that live in apartments without elevators, for example.

DOs

- If your dog experiences recurrent weakness or an awkward gait, contact your veterinarian. Minimize your dog's activity until then.
- Use a harness instead of a collar on your dog if a veterinarian has found signs of neck pain and cervical spondylomyelopathy.
- Inform your veterinarian if your dog has ever been diagnosed with a medical condition and is taking medication, to reduce the risk of drug interactions or masking of other symptoms.
- Give medication exactly as directed by your veterinarian, and if you are concerned about possible negative effects, discuss them with your veterinarian immediately rather than simply altering or discontinuing the treatment.
- Seek a second opinion with a veterinarian specialized in the treatment of cervical spondylomyelopathy if you have questions your veterinarian cannot answer, or for additional information on treatment options. These veterinary neurologists (www.acvim.org; www.ecvim-ca.org) and veterinary surgical specialists (www.acvs.org) can be found in most large city centers in North America and Europe.

DON'Ts

- Do not force your dog to lift his or her head if reluctant. This movement can be very painful in individuals with cervical spondylomyelopathy and may even damage the spinal cord.
- Do not postpone visiting your veterinarian if you observe any clinical signs of cervical spondylomyelopathy. This disease is progressive (generally worsens over time) and prompt diagnosis and treatment may improve the long-term outlook.
- Do not give medication that you have at home that has been prescribed for human use; some of these may interfere with treatment and cause even more severe problems.

WHEN TO CALL YOUR VETERINARIAN

- If you cannot keep a scheduled appointment.
- If you are unable to give medication as directed.
- If clinical signs return or begin to worsen.

SIGNS TO WATCH FOR

During treatment, the following could indicate early worsening:

- General signs of illness, which include vomiting, diarrhea, decreased appetite, weight changes, and changes in behavior.
- Signs of persistent or worsening cervical spondylomyelopathy, which include uncoordinated gait, dragging the paws, reluctance to extend the neck and raise the head, or difficulty/inability to stand up.

ROUTINE FOLLOW-UP

- After your dog goes home from surgery, routine appointments are required to assess progress. X-rays may be taken and neurologic exams are performed at regular intervals, with exact time frames depending on the extent of spinal cord damage and symptoms your dog is showing.

Other information that may be useful: "How-To" Client Education Sheets:

- How to Assist a Pet That Is Unable to Rise and Walk
- How to Perform Range of Motion Exercises
- How to Provide General Postoperative Care at Home

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