Medicine vs. Surgery

Medical management is successful about 80% of the time. Although strict rest may resolve the first episode of weakness, the chance of a recurrence is very high. Recurrences are generally more severe than the initial episode and can be harder to fix surgically.

Surgery is successful 99% of the time when the patient is still able to wag their tail at the time of surgery. High success rates, and low recurrence rates make surgery an ideal option in most cases. Surgery is advised when there have been previous episodes of pain and /or weakness, poor response to medical management or if the patient it unable to stand or walk. Benefits unique to surgery include immediate pain control, rapid return to function, and low recurrence rates.

	WITH SURGERY	WITHOUT SURGERY
Functional Recovery	99%	80%
Major Recurrence*	5%	50%
Minor Recurrence**	30%	90%

**Major – inability to walk or severe pain that does not improve with medical management.*
***Minor – 1-2 days of weakness or discomfort.*

Early diagnosis is better because once there is loss of deep pain surgery is successful only 50% of the time.

Diagnosis

At BVNS we use either CT scanning or a MRI to make the diagnosis and plan for surgery, when necessary. CT has the advantage of being accurate and fast but CT does not give information about the health of the spinal cord. MRI provides much more information and is selected in cases that are deep pain negative or when the neurologist has a sense the diagnosis might not be disk disease. Myelography is rarely performed due to the risks and decreased diagnostic yield relative to CT and MRI.

Clinical Trial

BVNS is collaborating with NCSU veterinary school in a clinical trial comparing placebo, high does steroid therapy and polyethylene glycol in dogs that are deep pain negative and have surgery. It is expected that steroid therapy will make no difference in outcome and make some dogs sick while polyethylene glycol might help some dogs to recover. We do not advise therapy with high doses of steroid.

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BUSH VETERINARY NEUROLOGY SERVICE
The Leading Center For Advanced Neurology

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Intervertebral Disk Disease

Who can be affected?

Disk disease is more prevalent in certain breeds of dogs. Dachshunds, Beagles, Shih Tzus/Lhasas, Bichons, Cocker Spaniels and Corgis are among the most common, but even cats can develop disk disease.

Any disk can rupture, but the disks in the mid-back and neck are at the highest risk. The information in this brochure will focus on problems with disks in the mid-back.

The good news is that disk disease is usually curable with surgery, and many dogs have a good chance of getting through their first episode of pain and mild weakness without surgery.

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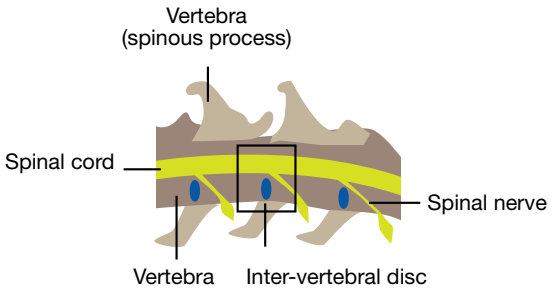
Anatomy

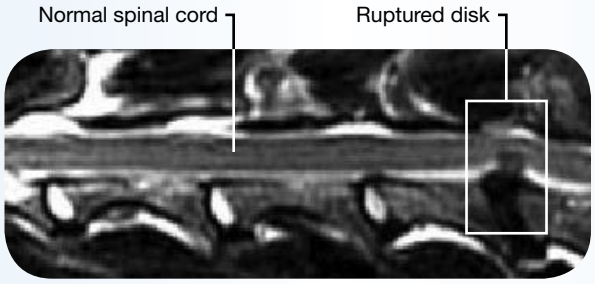
The spinal cord carries movement and sensory information between the brain and limbs. It is protected by a segmented, bony box, called the vertebral column. Each segment or vertebra is cushioned by a disk.



The intervertebral disks are usually well hydrated, spongy, and wrapped by ligament. At rest, the disk is under pressure and movement of the vertebrae increases the pressure within the disk.

Disease

In disk rupture, the ligament wrapping the disk becomes weak and the contents of the disk dehydrate. Either spontaneously, or with sudden movement, the ligament can tear and the pressurized contents strike and persistently compress the spinal cord. This process causes pain and/or weakness. The disease progresses when persistent compression damages neurons and blood vessels, causing chemically mediated damage and decreased blood flow to the spinal cord.



Signs of Disease

Pain is caused by stretching of the nerve roots and spinal cord lining. Weakness and decreased proprioception (sense of limbs in space) occur as compression inhibits signals between the brain and limbs.

Pain & Weakness

- Decreased appetite for normal food
- Hiding, being quiet, aggressive or irritable
- Tense abdomen or yelping when being picked-up
- Reluctance to jump, do stairs or walk
- Falling when walking

Decreased Proprioception

- Standing with toes knuckled under foot
- Standing with feet too close or too far apart
- Crossing one leg in front of the other when walking
- Ataxia (disordered way of walking)

Correction of Knuckling
A veterinarian will test for significant cord compression by looking for the inability to flip the toes back when knuckled. The represents a loss of proprioception.

Progression

With persistent or progressive spinal cord compression fewer signals can pass through the spinal cord.

- Inability to move one of more limbs
- Inability to move tail
- Poor control of urination or defecation
- Loss of deep pain sensation
- Loss of muscle tone of back legs

Deep Pain Perception
The inability to sense a deep pain stimulus is serious, indicating that no signals can pass through the severely damaged spinal cord. This can be tested by clamping the toe or tail with a hemostat and looking for a pain reaction.

Pain management and strict rest are necessary to recover from disk disease. Pain medication must be coupled with exercise restriction. Confinement to a crate or small area is optimal. Running, jumping, stairs, and excessive movement should be prohibited. Being carried from the crate to outside and walking just a few steps in order to eliminate, is ideal.

Pain medication and exercise restriction should continue until there are no signs of pain or weakness. At this point, the medication should be stopped, but exercise restriction should continue for an additional seven days. If at the end of seven days there are still no signs of pain or weakness, normal activity can gradually be resumed.

Surgery

During surgery the disk material causing the compression is removed allowing the spinal cord to heal and better transmit signals. At the same time fenestration is performed, where small holes are placed in adjacent disks. This decreases pressure within the disks and significantly lowers recurrence rates.

There is a 2-3 day hospital stay following surgery. Once the patient is eating and comfortable the exercise restriction can be continued at home. A follow up visit is scheduled about two weeks after surgery, during which a less restrictive exercise plan is explained. At six weeks following surgery normal activity can be resumed.