Surgical Repair Of Spinal Fractures and Luxations

Spinal fractures and luxations are a serious injury and the decision on whether or not to do surgery is often complex and difficult to determine. The following considerations must be looked at carefully when making this decision.

1. Financial
Spinal surgery is often very expensive and represents a considerable investment for most people. The specialized equipment and implants needed to repair broken necks and backs can exceed fifty thousand dollars in costs. In addition, specialized training and skill is needed in both the area of neurosurgery to protect the delicate spinal cord and orthopedic surgery to repair the fractured vertebrae. Only highly trained surgeons attempt this difficult surgery and even in the best of hands, a successful outcome is never guaranteed. These patients many times require a special radiograph called a myelogram, where contrast agent is placed into the spinal canal, in order to determine if the spinal cord is “crushed” or damaged before attempting any surgery.

2. Neurologic Status
Some pets will have very minor fractures or luxations on their radiographs and be completely paralyzed while others have severe fractures and luxations and walk normally. The spine can completely separate and damage the underlying spinal cord and then “snap back” into place due to the large amount of muscle and ligaments that hold it together; so that a patient with a “normal” radiograph or one with only mild changes can still have suffered severe trauma that is just not apparent at the time the spine is radiographed. In addition, many times an animal will appear to have a minor luxation when radiographed awake, but under anesthesia, when the muscles relax, have very severe changes. This is why some animals wake up from anesthesia without having had surgery and appear to be neurologically worse.

If your pet is completely paralyzed and can not feel pain when their rear toes are pinched with a hemostat they often need emergency surgery if they are to have any chance of walking again. Unfortunately, patients in this category have only a five or ten percent chance of recovery. If your pet is partially paralyzed, we will often postpone surgery and treat them medically with very powerful steroids (solu-medrol) in an attempt to reduce the swelling and improve their condition before surgery is attempted or recommended. If your pet is completely normal, often times we will not recommend surgery no matter how bad the fracture looks since many of these patients will recover with strict rest and confinement. Unfortunately, once the pain from the injury diminishes and these pets become more active, they can worsen their injury and become permanently paralyzed. If often comes down to a decision as to whether the risk of further injury without surgery...
outweighs the risk of the surgery itself worsening your pet’s neurological condition.

3. Instability of the Spine
Some injuries leave the spine very unstable and this makes your pet more likely to have further damage to the spinal cord with simple movements or even barking excessively. Surgery is often necessary to stabilize the spine with or without reduction of the fracture simply to prevent future damage to the spinal cord.

4. Location of Injury
The lower you go on the spine, the more room there is in the canal, so injuries to the lower three vertebrae are not as serious as injuries to the neck or middle back region. Additionally, the spinal cord actually ends around the fifth or sixth vertebrae depending upon the size of your pet and only smaller nerves run the rest of the way. These nerves are less prone to damage and swelling than the actual spinal cord higher up again making even very severe injuries to the lower back less dangerous than areas higher up.

5. Patient
The age, health and temperament of your pet are also considerations that must be taken into account when deciding upon surgery. Young patients heal quickly but they have softer bone which makes surgery more difficult as you can damage the fragile vertebrae with the clamps that are used in reduction. Pins and screws also loosen quite easily in soft bone making stabilization more challenging. On the other hand, young, active patients are more difficult to keep strictly confined without surgery so stabilization is often preferred so they can be more active while they are healing. Old or debilitated patients are often not good surgical candidates and spinal surgery is usually a lengthy procedure. These patients are also more easily confined making surgical less necessary.

6. Pain
A broken back or neck is one of the most painful conditions you can experience as your back muscles are used to do everything, including breathing, moving, sitting down, laying down, and going to the bathroom. If your pet is not a candidate for surgery based upon their injury and neurologic status, but is in extreme pain that is not controllable with medication, we will often recommend surgery to shorten the amount of time and the intensity of pain that your pet is experiencing.

Your doctor will discuss all these factors with the surgeon and together they will make the best recommendation for your pet’s individual situation. Each case is different and there is no “one size fits all” way to handle injuries to the spine. Your doctor and the surgeon will be happy to answer all of your questions before making any decisions regarding the care of your pet.

Post Surgical Care
Once your pet has had surgery for their injured spine, it will usually take 12-24 hours
before we know how well things turned out. Unlike human patients, we can not ask our patients to “wiggle your toes” or “can you feel this” so post-operative neurological status can be difficult to determine until they are completely awake. High levels of pain medication also make your pet very groggy and they simply will not attempt to stand or walk until the medication wears off. If your pet had some neurologic damage pre-operatively, it can take several weeks or even months before they return to normal function. Often, even with the most delicate technique, anesthesia and surgical manipulation of the spine will worsen your pet’s neurologic status, but most of the time this is temporary and they will return to their pre-operative status within a few days. Rarely, a second surgery to control spinal cord swelling may be indicated if it was not done during the first surgery. This procedure is called a laminectomy and is only needed if we suspect spinal cord swelling or “pinching” of the cord from the injury or a pre-operative myelogram was done and it demonstrated that the spinal cord was swollen or compressed.

The following instructions will be your guide to home care.

**Weeks 1-3**  
Provide pain management with NSAID’s the first five days and antibiotics for the first week. Confining your pet to a small bathroom or crate or gated area with just enough room to move around comfortably. No running, jumping, playing or outside activity is allowed. Carry your pet outside two or three times daily to urinate or defecate. Decrease your pet’s caloric intake by cutting down the amount of food you normally feed by about one third since they will be burning up less calories than normal. Be sure to support both the front and rear of your pet when you pick them up. Be very careful doing this if they are still in pain as they will even bite their owner under these circumstances. Your veterinarian can show you how to humanely muzzle your pet if this is a problem so no one gets hurt. Recheck with your doctor one week after surgery, sooner if you notice any swelling or redness around the incision or pet stops eating or drinking or suddenly worsens neurologically. Sutures should be removed ten days after surgery.

**Week 4**  
Begin slow leash walks of less than 10 minutes three times a day with no further activities. You can allow your pet to have access to a larger area but no stairs are allowed and no jumping up onto couches or beds. A progress radiograph should be taken at this time to evaluate the implants and the healing of the spine.

**Weeks 5- 6**
Increase the slow leash walks to 20 to 30 minutes two or three times daily but nothing else.

**Weeks 7-8**
Schedule another recheck with your doctor eight weeks after surgery to evaluate your pet’s progress and possibly take another radiograph.
Take your pet on leash walks for 30 to 40 minutes two to three times daily and allow full run of the house as long as there are no large flights of stairs that they are prone to run up and down.

**Weeks 9 - 12:**
At this point, your pet’s healing should be complete and should gradually return to full activity by the end of 12 weeks.

**Additional Instructions:**

Licking at the incision should be discouraged because it may lead to chewing at the sutures or staples causing a wound infection. It may be necessary to bandage the body or use an Elizabethan collar to prevent licking.
Bandages, if used, should always be kept dry and clean. Any odors and/or persistent licking are indicators that there may be a potential problem and **should be checked by your veterinarian immediately.** Bandages and splints should be checked weekly by your veterinarian or veterinary technician.
Feed your pet its regular diet but reduce it by 20-30% to allow for reduced activity.
Mild swelling may occur near incision. Your veterinarian should check moderate or severe swelling or any drainage immediately.

**Complications**

As with any surgical procedure, complications can occur. Unlike human patients who can be confined to a bed, our patients do not know enough to slow down when they start to feel better, so restricted activity is a major responsibility of you, the pet owner. Failure to follow these instructions carefully can lead to delayed healing or even failure of the implants.
The most common complication is delayed healing, where, despite our best efforts to stabilize the spine, individual patients respond slower than others. If your pet seems to have worsening pain or weakness in the limbs after going home, please notify me or your doctor right away. If you have any questions, please feel free to ask your veterinarian or call me at the number above.