SpineFAQs **Risks of Spinal Surgery**

Any surgical procedure carries some risk. No matter how careful we are, and no matter how sophisticated technology becomes, there is always the possibility of a complication when undergoing surgery. Fortunately, with years of experience, we can reduce the risks of surgery to a very acceptable level.

In general surgical risks can be divided into three categories:

1) The medical risks attendant to any type treatment
2) Risks that are associated with surgery in general
3) Risks specific to a particular procedure

This SpineFAQ handout cannot cover every possible risk or complication for every type of spinal surgery, but most spine surgery procedures carry very similar risks.

Medical Risks

Because we are traumatizing your body with surgery, and we are generally using anesthesia to keep you comfortable during surgery, extra stresses are placed on your body during and after surgery. In particular the systems that regulate your breathing, heart rate, and blood pressure are affected. Age, general health and medical condition, and complexity of surgery all affect how you respond to those stresses. Medical risks with any type of surgery include, but are not limited to:

- Heart Attack
- Heart Rhythm Problems
- Stroke
- Pneumonia
- Kidney Failure

- Reaction to the anesthesia medications or allergic reaction
- Inability to be taken off the breathing machine
- Blood Clots (DVT) and Pulmonary Embolism (PE)
- Death

Fortunately, medical risks can be reduced to a very low level by making sure you are medically stable and well managed. Depending on your age and health status, I may ask you to be evaluated by your medical doctor or cardiologist to assess your condition. Blood tests, EKG heart tracings and chest X-Rays may be needed in addition to more advanced tests to assess your health and make sure you are up to having surgery. Most of the time, even the sickest person can safely have surgery. There are occasions, however where you are too frail to safely tolerate surgery.

Risks of Surgery in General

Since surgery involves entering your body and manipulating the tissues, organs and structures of the body, there are a number of possible things that can happen. These may include:

- **Bleeding, even to the point of needing a transfusion**. Any time we make an incision, bleeding occurs. Generally this is controlled with a special electric device that causes the blood to clot. Sometimes, however, bleeding can be difficult to control. We often use a special suction system in the operating room to allow us to return much of the lost blood back to you. A blood transfusion may be required if there is a lot of bleeding. While every blood unit is tested, there is still a small risk of transmission of disease such as hepatitis or AIDS with a blood transfusion.

- **Injury to the nerves, tissues or structures around the area of surgery.** Sometimes these injuries are minor, but sometimes they are catastrophic...including paralysis and death. We do everything possible to take care and avoid this type of injury.
- **Wound Infection.** Any time we cut through the skin, we create the possibility that bacteria can enter the body and cause an infection. Sometimes these show up early, sometimes many weeks after surgery. We try to reduce the possibility of infection by using sterile techniques in the operating room, and giving people antibiotics before/during and after surgery. If an infection occurs, we may have to go back to the operating room one or more times to clean out the infection. It also often requires many weeks of continued antibiotics by vein to cure the infection.
- **Wound healing problems**. When making an incision in the skin, we sew the wound back together, but have to rely on your healing powers to heal the wound. People with diabetes, cancer, or immune system problems such as rheumatoid arthritis and AIDS have a harder time healing their wounds.
- **Skin Breakdown or necrosis**. The body naturally moves about to take pressure off of the skin to prevent pressure injury. Unfortunately when under anesthesia, your body cannot move. This can lead to skin pressure which can cause breakdown and death of the skin. While rare, this can be a very bad problem, sometimes requiring plastic surgery to fix. We are very careful to pad those areas that might be under pressure.
- **Injury to the teeth or eyes**. During general anesthesia, a tube is placed into your throat to help you breath. Occasionally the teeth can be chipped or broken while inserting the tube. This is more common in people with

poor teeth. Additionally, while asleep, you do not blink. It is possible that your eyes can dry out, or the corneas get scratched while asleep. The anesthesia team is very careful to avoid these problems.

Risks Specific to Spine Procedures

In general, spine surgery can affect nerves, bones, discs, and joints found in the spine. In addition, since spine surgery is aimed at reducing or eliminating pain (which is a very subjective complaint), it is possible to continue to have pain or numbness/ tingling even after well performed surgery. This often occurs because there has been some permanent changes in the nerves, and they are no longer functioning normally. Here are some of the more common risks associated with spine surgery:

- **Continued pain, numbness or tingling.** Since we do not have any type of test to tell us if there has been permanent nerve injury, and since we cannot tell if the nerve has been permanently damaged by looking at it, it is possible that the nerves cannot recover. In general, I counsel people that it may take up to a year before we will know if you have permanent problems with your nerve after surgery.
- **Adjacent (nearby) level degeneration**. Unfortunately in spine surgery we do not have a “total spine replacement”. Surgery on the spine, therefore basically involves changing the spine you have in order to reduce your symptoms. It is essentially a compromise. We cannot stop the aging and deterioration of the spine that continues throughout your life. This makes it possible that as time goes on, you might develop deterioration of the levels nearby, which in some cases can become symptomatic enough to require additional surgery.

- **Breakage or misplacement of the instrumentation.** If we are putting hardware (screws, plates, rods, cages etc) into the spine to stabilize the spine, it is possible to either put them in the wrong place (causing possible damage to the nerves or surrounding areas). Training, care and skill make this a very rare problem. It is also possible that these man-made metallic devices can break. This can particularly happen if the levels do not fuse, and there is continued motion. Sometimes this is such a problem that we need to remove and replace the broken hardware.
- **Damage to the dura and leakage of the spinal fluid.** The nerves and spinal cord are held in a soft tissue tube or sac called the dura. The dura also contains the spinal fluid which feeds the nerves. If this sack is torn or punctured, the spinal fluid can leak out. While your body continues to manufacture spinal fluid, you cannot be "run dry". Continued leaking, however can be a real problem. Bad headaches, weakness, and collection of fluid can occur. Sometimes the collection of fluid can keep the skin wound from healing. This can increase your risk of infection. Fortunately, we are able to repair the tear or hole by suturing it back together, and occasionally using a sealant material. If we get a spinal fluid leak, we may keep you at flat bed rest for several days to allow the repair to heal. This can delay your discharge from the hospital.
- **Intra-abdominal Catastrophe.** When operating on the spine from an anterior approach, the spine is accessed through the abdomen and the intestines, arteries, veins and bladder can be damaged. In posterior procedures where the disc is entered (Discectomy, inter body fusion), these structures can be damaged as well. If unrecognized, severe injury and possibly death can

occur. Abdominal surgery on an emergent basis may be required. Fortunately these problems are extremely rare.

- **Ischemic Optic Neuropathy.** When positioned prone on your belly to do surgery, the blood flow to the optic nerve can become compromised, starving the nerves and eyes of blood. There are extremely rare cases where patients have gone blind as the result. Generally however, these patients are older, undergoing long operations with high levels of blood loss.