

Surgical Interventions

Failed Back Syndrome and Revision Surgery

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Every year more than one hundred thousand patients have an elective spinal surgical procedure performed in the United States. A significant number of individuals will experience improvement but continue to experience spine related symptoms. A smaller but substantial percentage will develop new signs and symptoms as a result of the surgery that may be worse than the original presentation. Some patients will go on to have a repeat surgery or revision surgery at the same spine level. When surgery fails, the resulting condition is referred to as failed back syndrome (FBS). This condition has previously been referred to as "failed back surgery syndrome".

The most important step in reducing the risk for failed back syndrome and revision surgery is an accurate diagnosis and proper patient selection before surgery. The initial diagnosis may be the single most important factor when attempting to prevent FBS. The diagnostic process should include identifying whether complaints are primarily related to the spine as well as identifying any contributing factors which may need to be addressed. The next step is determining whether surgery represents a reasonable approach for treating the problem. Surgery should always represent a "last resort" after more conservation methods have been considered or applied. According to Joseph Margulies, M.D., Ph.D. in the text titled "Spine Secrets", poor outcome after initial spinal surgery can sometimes be attributed to one of the three "Ws", wrong patient, wrong diagnosis and wrong surgery.

Concurrent factors, which increase the probability of a poor surgical outcome include multiple prior spinal surgeries, obstructive sleep apnea, cigarette smoking, fibromyalgia has also been associated with increased risk for post-operative pain syndrome. Additional risk factors include the development of excessive scar tissue (fibrosis/adhesions), recurrent or residual disc herniation, spinal stenosis, infection, pseudoarthrosis, and spinal instability. The presence of a blood disorder (systemic disease) such as diabetes, rheumatoid arthritis, lupus erythmatosis, thyroid disease, clotting disorders among other disorders can alter the healing (recovery) properties of the tissue which are operated on. These types of conditions need to be identified before surgery and considered in the treatment plan whether it include surgery or not.

Technical errors during spine surgery can also lead to poor outcome. Examples include operating at the wrong level, inadequate surgical removal (decompression) of pressure off neurological structures, poor restoration of spinal alignment during surgery and malposition or failure of instrumentation used during surgery. Poor patient selection and operating on a part of the spine that is not the source of pain will lead to FBS.

Medical complications during spine surgery can also lead to poor outcome. This includes a heart attack (myocardial infarction), stroke, pulmonary embolus and anaphylactic reaction.

Certain patient behavior and habits can adversely affect spine surgery outcome. Examples include poor nutrition, smoking, alcohol and drug abuse, poor sleep habits, frailty or physically being out of shape. Proper patient education prior to surgery can help

improve results. Other diseases such as chronic neurodegenerative disorders will increase the risk for poor surgical outcome. This includes patients with Parkinson's disease, Alzheimer's disease, neurofibromatosis, Charcot spinal arthropathy and neuromuscular spinal deformity.

If a patient is very young at the time of surgery (> 50) their likelihood of having another spine surgery or revision surgery is greater than older patients. There is simply more time for degenerative changes to take place and for surgical instrument to mechanically fail. A revision spine surgery always presents a challenge for the attending surgeon. The surgeon must deal with compromised anatomy (structures) and altered tissue, the result of prior surgery. The surgeon relies heavily on diagnostic imaging to plan the procedure.

It is always reasonable for any patient who has been told they need an invasive procedure such as spine surgery to consider obtaining a second and/or third opinion. This provides the patient with an opportunity to learn about different operative and non-operative options and the ability to investigate the risks associated with the recommended procedure. There are many helpful tests, which may be ordered prior to revision spine surgery, these include X-rays, advanced imaging such as CT and MRI, bone scans, nerve studies (EMG/NVC) and lab work. These tests are integral for the doctor to confirm a surgical diagnosis.