

Methods Used to Determine Surgical Issues

Surgical thinking regarding spinal issues is mainly focused on finding the right spinal level to work on in addition to choosing the correct method. So the method of evaluation is almost as important as the type of surgery chosen.

MRI

Magnetic Resonance Imaging (MRI). Magnetic resonance imaging (MRI) can provide very well-defined images of soft tissue and bone. The test is not painful or dangerous, but some people may feel claustrophobic in scanners where they are fully enclosed. MRIs can detect tears in the disks, disk herniation, or disk fragments. It can also detect spinal stenosis, and non-spinal causes of back pain, including infection and cancer.

MRI scans often detect spine abnormalities that are not causing symptoms in the patient. **At least 40% of all adults have bulging or protruding vertebral disks, and most have no back pain.** Also, the degree of disk abnormalities revealed by MRIs often has very little to do with the severity of the pain or the need for surgery. Disk abnormalities in people who have back pain may simply be a coincidence rather than an indication for treatment.

Patients are also more likely to think of themselves as having a serious back problem if abnormalities are identified on MRI scans, even if the scans do not result in treatment changes. This perception may sometimes slow down their recovery.

Computerized Tomography (CT Scan)

CT stands for Computerized Tomography. In this procedure, a thin x-ray beam is rotated around the area of the body to be visualized. Using very complicated mathematical processes called algorithms the computer is able to generate a 3-D image of a section through the body. CT scans are very detailed and provide excellent information for the doctor.

Bone Scintigraphy and SPECT Imaging

Bone Scintigraphy and SPECT Imaging. In rare cases, doctors may use bone scintigraphy (bone scanning) to determine abnormalities in the bones. The technique may be useful for early detection of spinal fractures, cancer that has spread to the bone, or certain inflammatory arthritic conditions. During this exam, a small amount of radioactive material is injected into a vein. It circulates through the body, and is absorbed by the bones. The bones can then be seen using x-rays or *single photon emission computed tomography* (SPECT).

X-ray Myelogram

An *x-ray myelogram* is an x-ray of the spine that requires a spinal injection of a special dye and the need to lie still for several hours to avoid a very painful headache. It has value only for select patients with pain on moving and standing. It has largely been replaced by CT and MRI scans.

Discography

Discography: Since many people have evidence of disk degeneration on their MRI scans, it is not always easy to tell if the finding on this MRI scan explains pain the patient may be experiencing. Discography is a test that is used to help determine whether an abnormal disk seen on MRI explains someone's pain. When performed, it is generally reserved for patients who did not experience relief from other therapies, including surgery. This procedure requires injections into disks suspected of being the source of pain and disks nearby. It can be painful. There is controversy among physicians who take care of the spine regarding the usefulness of discography for making decisions about care, particularly surgery. The American Pain Society is against the use of provocative discography for patients with chronic nonradicular (pain that does not radiate) low back pain.

Blood and urine samples may be used to test for infections, arthritis, or other conditions. Injecting a drug that blocks pain into the nerves in the back helps locate the level in the spine where problems occur.

Disclaimer: This information is not intended as a substitute for medical or chiropractic professional help or advice, but is to be used only as an aide in understanding spinal and nerve issues.

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