Cordotomy has been used by neurosurgeons in the treatment of cancer pain for over 100 years. However, with modern technology it can now be performed by way of a single needle stick instead of surgery.
On each side of the spinal cord is a special tract, or bundle, of nerve fibers that carry information about pain and temperature. Cordotomy targets this area to “turn off” the pain signal.

Pain medications commonly used for treating cancer pain are not always effective. In this situation, a Percutaneous CT-Guided Cordotomy, or a needle stick through the skin, just below the ear in the side of the neck, may be considered.

Who may benefit from a cordotomy?
Most cancer pain comes from involvement with tissue, like bone, muscle, and blood vessels, a pain commonly described as aching, throbbing, sharp, stabbing, or knifelike. This kind of pain responds very well to cordotomy. Nerve pain from cancer compressing nerves may also respond to cordotomy. The best candidates are those with pain on one side of the body below the head and neck coming from tissue or from nerve compression. Anyone with significant cancer-related pain mostly on one side of the body can be evaluated for the procedure.

Not everyone is a good candidate for cordotomy, including those who cannot lay flat on their back for 30 to 40 minutes and those with severe breathing problems and low oxygen levels. Bleeding problems and blood thinners may also present management challenges.

What to expect from the procedure.
Cordotomy is an outpatient procedure done with the patient awake; however a mild sedative may be given if necessary. An area behind the ear is carefully washed and numbed using local anesthetic. The neurosurgeon uses a CT scanner to guide the needle into the spinal fluid and a small amount of dye is injected. This allows the best visualization of the spinal cord. An electrode is then placed through the needle and into the correct region of the spinal cord. The patient is then asked to report any sensation he or she may feel and its location. Once the correct area of the spinal cord is confirmed, the very tip of the electrode is heated – which is usually not felt by the patient – and the nerve fibers carrying pain sensation are disconnected. More than one heating is often required and the patient is questioned and evaluated between each lesion. The entire procedure takes less than one hour. A small Band-Aid is placed over the needle site. The patient may spend the night in the hospital for monitoring, but if so, is almost always discharged in the morning.

How effective is the procedure?
The results are immediate. Often patients become pain-free while still in the CT scanner. Improvement is seen in pain, sleep, and functional ability. The results last up to two years and sometimes more. If pain returns, a cordotomy procedure can be repeated.

Are there risks involved in the procedure?
It is commonly reported that pain is replaced by an “odd” or non-painful feeling that may go away with time, but does not always. This sensation is usually mild and does not cause any weakness or numbness. While risks associated with this procedure are low, anytime one is operating on the spinal cord, there is the risk of complication. Your neurosurgeon will discuss specific risks with you.

Meet Our Physician.
William Rosenberg, MD, is a neurosurgeon with the Midwest Neuroscience Institute at Research Medical Center and Medical Director of the Center for the Relief of Pain. Dr. Rosenberg attended Harvard Medical School in Boston, Massachusetts, graduating in 1987. He completed his neurosurgical residency at Massachusetts General Hospital, also located in Boston, in 1993. He is a Fellow of the American Association of Neurological Surgery and a diplomate of the American Board of Neurological Surgery. After eight years in academic neurosurgery Dr. Rosenberg redirected his career to join Midwest Neurosurgery Associates, out of a desire for greater focus on patient care and the ability to spend more time with family. In Kansas City, Dr. Rosenberg continued to pursue interests in complex spinal surgery. In addition, he expanded his area of expertise to include the treatment of chronic pain.