

## SPINAL COLUMN STIMULATORS

### I. BACKGROUND

The Spinal Column Stimulator (SCS) is a device that allows for electrical stimulation of the dorsal aspect of the spinal cord in an effort to relieve pain. Stimulation in this area interferes with the conduction of pain impulses through adjacent sensory pathways. The technique does not alter the underlying pathological process or patient anatomy. However, in carefully selective patients with persistent, intractable neuropathic pain, roughly half realize pain relief, thereby decreasing the need for analgesic medication and, at times, obviating the need for further procedures.

### II. PROCEDURE

The SCS system consists of stimulation lead(s) (which deliver(s) electrical stimulation to the spinal cord); an extension wire (which conducts electrical pulses from the power source to the lead); and a power source (which generates electrical pulses). One or more epidural electrodes or paddle lead are inserted into the spinal canal over the dorsal aspect of the spinal cord. The locus of the electrode placement – cervical, thoracic or lumbar – is dependent on the location of the patient’s pain. The electrode is usually placed by a percutaneous or surgical technique which requires laminectomy.

SCS is a reversible therapy that includes testing for pain relief effectiveness before the patient receives a permanent implant. The procedure is performed in two stages. First, during the trial stage, the electrode is implanted, with a wire located outside of the body. The trial usually lasts from three to ten days and, if successful in relieving pain, permanent placement of the SCS is recommended. The procedures are generally safe but, on occasion, local or epidural infection bleeding, allergic reaction, nerve damage and headache can occur.

### III. APPROPRIATE CONDITIONS FOR SCS PLACEMENT

A. In approximately 75% of cases, the “failed back syndrome”, with persistent, intractable disabling pain of neural origin (perineural fibrosis, arachnoiditis, etc.) despite medical, surgical, or other appropriate therapies.

B. In five to ten percent of cases, chronic and intractable pain following spinal cord surgery.

C. The remainder of cases consists of nerve disorders/injuries, such as complex regional pain syndrome (CRPS, formerly known as reflex sympathetic dystrophy or chronic neuralgia), post-amputation (phantom limb) pain, and post-herpetic neuralgia; wherein there has been a failure to respond to generally acceptable alternative therapeutic modalities.

### IV. SCS PATIENT SELECTION CRITERIA

A. SCS stimulation shall be provided after an assessment by a multidisciplinary team experienced in chronic pain assessment and management of people with spinal cord stimulation devices, including experience in the provision of ongoing monitoring and support of the assessed patient. At a minimum, implantation treatment is limited to physicians with training and experience in the field of pain management, as well as in SCS use.

B. SCS implantation is restricted to those patients with an organic basis for neurogenic pain, for whom conventional medical, surgical or other therapeutic as well as behavioral modalities and therapies have been unsuccessful in providing adequate pain relief. The patient's condition must have been previously evaluated by two prior consultants (neurosurgeon, neurologist, anesthesiologist, psychiatrist, or orthopedic surgeon).

C. Patients must have been evaluated by a psychiatrist/psychologist with specific experience in the evaluation of chronic pain problems.

D. A satisfactory response to a trial of SCS, with the temporary insertion of an electrode, is required prior to permanent SCS placement.

#### V. SCS IMPLANTATION CONTRAINDICATIONS

A. Patients with significant drug-seeking behavior, including substantial drug and alcohol abuse.

B. Patients with substantial psychological instability, psychosis, etc., need to be carefully evaluated and, if appropriate, excluded.

C. Patients in whom the possibility of secondary gain (compensation, litigation, etc.) plays a significant role, need to be carefully evaluated and, if appropriate, excluded.

D. Chronic anticoagulant treatment is a relative contraindication.

#### PROTOCOL HISTORY:

Passed: 6/9/1998  
Amended: 4/27/2010  
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