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CAUDAL NEUROSTIMULATION FOR PELVIC PAIN – A NEW FRONTIER FOR UROLOGY

Hypothesis / aims of study

Sacral neuromodulation has been shown to have modest effect in controlling pelvic pain. The S3 roots are the typical targets because nerve branches originating from S3 primarily supply the anterior perineal musculature. However, sensations from the pelvic floor are mainly conveyed by the sacral afferent parasympathetic system, S2–S4. We have developed a novel technique to capture all the sacral nerve roots (S2-5) before they exit the sacral foramina specifically for the treatment of intractable pelvic pain. The hypothesis is that stimulation of this extensive area of innervation will allow better control of severe pelvic pain.

Study design, materials and methods

The sacral canal is accessed via a caudal approach using the Interstim foramen needle by entering the sacral hiatus. Entry into this sacral epidural space is confirmed by AP and lateral views of the sacrum on fluoroscopy. The introducer is passed, through which the quadripolar tined lead is guided in a retrograde fashion until the tip is at the S2 level where the dural sac ends. A second electrode is deployed in a similar fashion over the contralateral nerve roots. Intra-operative stimulation is used to achieve optimal motor and sensory responses. Both leads are then tunneled subcutaneously and connected to an external pulse generator for a 2 week trial period.

Results

30 patients have undergone the caudal neurostimulation procedure since April 2003 for debilitating pelvic pain. Most patients required significant narcotic regimen prior to implantation including Fentanyl patch, morphine infusion pump, and intrathecal injections. 80% of the patients had >50% improvement in symptoms and proceeded to implantation of a permanent pulse generator. 30% have discontinued their opiate medications and one-third were able to significantly reduce their opiate requirements. There have been no complications associated with the implantation to date.

Interpretation of results

Short-term data shows that this new approach for neurostimulation is effective and well-tolerated with low morbidity.

Concluding message

Caudal neurostimulation is a promising new treatment for pelvic pain syndromes. The technique of sacral stimulation has evolved from targeting only a single nerve root using a unipolar lead to the ability to capture the entire sacral plexus via a minimally invasive percutaneous quadripolar self-anchoring lead. Our experience is growing and the results, although preliminary, are extremely promising.