Trial Stimulation for Pudendal Neuralgia via the Sacrococcygeal approach: Technical Report

Kenneth B. Chapman, M.D.1,2, Keyvan Jahanbakhsh, M.D.1, and Alon Y. Mogilner, M.D., Ph.D.3
1Department of Pain Management, NYU Langone Medical Center, New York, NY
2Department of Pain Management, North Shore-LIJ Health System, New York, NY
3Center for Neuromodulation, Department of Neurosurgery, NYU Langone Medical Center, New York, NY

Introduction

Chronic Pelvic Pain (CPP) and Pudendal Neuralgia typically present as treatment challenges for primary care physicians, gynecologists and pain physicians. In the past a wide variety of conservative and interventional methods have been used to treat such pain with limited success. Janicki and colleagues have proposed that CPP is a form of complex regional pain syndrome (1). While the pathophysiology remains unclear the suggested relationship between CPP and CRPS allowed for neuromodulation as a treatment. The main challenge and obstacle for the use of spinal cord stimulation in the successful treatment of CPP is correct placement of the leads. The goal of both the trial and final placement of leads is to capture the pudendal nerve distribution and avoid any additional stimulation in non-painful regions (aberrant stimulation). In our examination of the literature we did not find any case series presentations of sacrococcygeal placement of SCS leads. The objective of this case series is to evaluate the ability to stimulate the painful region successfully during the trial period using the sacrococcygeal anterograde approach.

Methods

In our case series, 7 patients with CPP secondary to pudendal neuralgia underwent neuromodulation trials. All of the patients had only partial or short-lasting relief with conservative and interventional treatments. The patients selected for the trial all had pain limited to the pudendal nerve distribution. Each patient was given counseling about the treatment and placement of the SCS, in addition to information provided by the manufacturer. Furthermore, a full psychological evaluation was performed prior to trial.

In each case the epidural space was accessed through the sacrococcygeal ligament under fluoroscopy with two 14 gauge Touhy needles [Figure 1]. Once the epidural space was successfully obtained, 2 Octode St. Jude Medical leads were placed in the anterior sacral epidural space bilaterally [Figure 2], medial to the sacral foramina, with the tips at the top of S1 foramina level. Placement of the leads was confirmed with fluoroscopy in both AP and lateral views. Intra-operative stimulation was performed in the operating room to confirm proper placement of the leads. The leads were then affixed to the skin using St. Jude Medical anchoring devices and attached to an external pulse generator. All patients were discharged home the same day.

Discussion

Paresthesia coverage in the pudendal nerve distribution was obtained in all 7 patients with minimal to no additional need for lead manipulation after initial placement. There was no reported aberrant stimulation reported by any of the patients. The average duration of each trial was 5 days. Six of the seven patients chose to proceed with implantation. Criteria for proceeding with implantation were decrease in VAS pain score, increased patient activity/function and overall patient satisfaction. Permanent implantation of appropriately sized-paddle leads (St. Jude Medical) was performed via a L5-S1 laminectomy [Figure 3].

The pudendal nerve arises from the S2-S4 sacral nerve roots, it exits the pelvis via the greater sciatic foramen and reenters the pelvis through the lesser sciatic foramen. The nerve itself then branches into the inferior rectal nerve, perineal nerve and dorsal nerve of the penis or clitoris. The pudendal nerve innervates the clitoris/penis, vulva, labia, vagina, perineum and rectum (2). Pain associated with the nerve can be localized across the entire distribution of the nerve or specific sites of innervation. The pain is usually described as burning, tingling or numbing. Most patients exhibit significant pain with sitting or lying on their back and relief with standing or lying on their stomach.

References