

## SACRAL NEUROMODULATION FOR THE TREATMENT OF WOMEN WITH NON-OBSTRUCTIVE URINARY RETENTION

### Hypothesis / aims of study

Non-obstructive urinary retention in women is an uncommon clinical condition that can be frustrating to treat for both patient and physician. This is particularly so as the underlying etiology is frequently elusive. Treatment options are few and include discontinuing any potentially offending medications with anticholinergic effects, long term indwelling or intermittent catheterization, urinary diversion, or a trial of peripheral sacral neuromodulation using InterStim Therapy (Medtronic, Inc.). If successful, it allows affected women the ability to spontaneously void without the need for catheterization or urinary diversion. We describe our 6 year single institutional experience with sacral neuromodulation for women with non-obstructive urinary retention.

### Study design, materials and methods

A retrospective chart review of all patients treated with sacral neuromodulation from 2002 to 2008 revealed a total of 11 women with non-obstructive urinary retention who had been treated utilizing this technique. Most patients underwent test stimulation with tined leads for at least 2 weeks (range 1 – 4 weeks) except 2 who were tested with temporary leads (duration 4-5 days). The rate of response to stage one and ultimately that of those who were implanted was assessed. Success was defined as the ability to void without the need for further catheterization (i.e. post void residual < 100 ml) with continued use of the device.

### Results

Mean age of the 11 women in this cohort was 49 years (range 28 - 76). The urinary retention was managed by clean intermittent catheterization (CIC) in 8 patients, foley catheterization in 2 and both in 1. All patients underwent preoperative urodynamics which revealed detrusor areflexia in 7, detrusor hyperactivity with impaired contractility in 3, and detrusor hypocontractility in 1. Comorbidities that could have potentially played a role in the urinary retention included diabetes mellitus, treatment for cervical cancer, Parkinson's disease, potential multiple sclerosis, and peripheral neuropathy. Ten of 11 women (91%) had successful test stimulations and were ultimately implanted. At a mean follow-up of 22.7 months (range 1 – 65) after initial implantation, six (60%) have had successful outcomes as previously defined. Four were deemed failures because of recurrent/persistent urinary retention or pain requiring removal of the device. Complications included infection, generator migration/failure, pain, sensation of shock, and lead displacement occurring in 5 (50%) patients requiring 20 re-operations (range 1 - 6).

### Interpretation of results

Non-obstructive urinary retention in women is uncommon, however when it occurs can be challenging to treat. Options are few and for many patients undesirable. Sacral neuromodulation has been shown to be effective in a significant number of patients who have this condition. Our limited experience has demonstrated a high rate of success with initial stimulation and subsequent implantation (91%). Complications however, are not infrequent and oftentimes require multiple revisions.

### Concluding message

Considering the negative impact on quality of life in these patients, surprisingly many are willing to undergo multiple revisions once they have experienced a successful outcome. Sacral neuromodulation should therefore continue to be in the treatment armamentarium for the management of non-obstructive urinary retention in women.

<b><i>Specify source of funding or grant</i></b>	<b>NONE</b>
<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>No</b>
<b><i>This study did not require ethics committee approval because</i></b>	<b>This was a retrospective chart review. All patient identifying information was removed to hide their identification from the chart reviewer .</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>No</b>