

## CAN SENSORY AND MOTOR REACTIONS DURING PERIPHERAL NERVE EVALUATION PREDICT OUTCOME OF SACRAL NERVE MODULATION?

### Hypothesis / aims of study

A major advantage of sacral nerve modulation (SNM) in the treatment of faecal incontinence is the ability to assess treatment outcome before permanent implantation by a peripheral nerve evaluation (PNE) and subchronic test stimulation period. This study evaluates the predictive value of sensory and motor responses during PNE on test stimulation and permanent stimulation outcome.

### Study design, materials and methods

All PNE procedures between July 2000 and August 2007 were analysed. PNE was performed in 208 patients (195 female, age 56.7 years, range 17-83). Correct needle placement was confirmed by typical S3 sensory and/or motor responses. After the procedure placement was confirmed by plain x-ray film. Test stimulation was considered successful when a >50% decrease in incontinence episodes was confirmed by a bowel habit diary.

### Results

72.6% had successful subchronic test stimulation. 13.9% only had sensory responses during needle placement. There was no significant difference in outcome in patients with only sensory responses compared to patients with sensory and motor responses ( $p=0.89$ ). There was no significant difference in outcome based on needle placement in either third or fourth sacral foramen ( $p=0.81$ ). There was no significant difference in permanent stimulation outcome between only sensory responses and sensory and motor responses ( $p=0.53$ ).

### Interpretation of results

The working mechanism of SNM is not only based on contraction of anal sphincters. Sensory pathways are thought to play an important role as well. Typical S3 motor responses are helpful to determine correct needle placement during PNE. However, no motor response does not predict failure of test stimulation. In this study there were 21/29 patients with successful test stimulation outcome despite of absence of motor responses during PNE. These patients may have had a failed initial lead placement if we found motor responses to be imperative.

### Concluding message

Needle placement during PNE can be based solely on sensory responses.

<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>Retrospective chart research does not require ethics committee approval.</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>