

## "CONVENTIONAL" PERIPHERAL NERVE EVALUATION TEST VS. "TWO-STAGE-IMPLANTATION" - COMPARISON OF RESPONSE RATES IN SACRAL NERVE STIMULATION

### Hypothesis / aims of study

Prior to implantation of a chronical sacral neurostimulator, it is important to establish which patients might profit from this kind of therapy in order to ensure, by means of a PNE (peripheral nerve evaluation) test, that the implantation of a permanent stimulating device is

effective. In a retrospective/prospective study we compared the two different techniques used in our department (implantation of the permanent neurostimulation electrodes so-called "two-stage-implantation" vs. "conventional" PNE).

### Study design, materials and methods

We performed a sacral nerve stimulation in 93 patients (mean age: 51.3 yrs (14-78 yrs); 41 with neurogenic or ideopathic urinary retention, 38 with a hyperactive detrusor and 14 with sensory urge or pelvic pain) over a minimum of 5 days. In 53 patients we performed a conventional PNE, 40 patients received "two-stage-implantation" with implantation of the permanent electrodes.

### Results

92 of 93 patients received bilateral test stimulation (14% at S2, 86% at S3). One patient underwent unilateral PNE (S3) because of anatomical deformity of the os sacrum. In 27 cases the conventional PNE-test (cPNE) was successful according to standard criteria (50.9% of all cPNE), with highest response rates in the groups of neurogenic and overactive bladder dysfunction. The response rate of "two-stage-implantation" with implantation of the permanent electrodes was 85% (34 of 40 patients), with the highest response rate in the group of overactive bladder dysfunction.

### Interpretation of results

Different success rates in different subgroups of patients undergoing sacral nerve stimulation remain unclear up to date. In our study the success rate of implantation of permanent neurostimulation electrodes in selecting patients for the permanent implant is significantly higher than the conventional PNE. In this study group, patients with neurogenic and overactive bladder dysfunctions showed the highest response rates to sacral nerve stimulation and are the most likely to benefit from sacral neuromodulation.

### Concluding message

The success rate of implantation of permanent neurostimulation electrodes in selecting patients for permanent sacral nerve stimulation is significantly higher than the conventional PNE test.

### Disclosures

**Funding:** none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** partly retrospective / prospective study **Helsinki:** Yes **Informed Consent:** Yes