

SACRAL NEUROMODULATION THERAPY IN PATIENTS WITH NON OBSTRUCTIVE URINARY RETENTION AND HISTORY OF BLADDER OVERDISTENSION EXCEEDING 1500 CC.

Hypothesis / aims of study

Sacral neuromodulation (SNM) is an FDA-approved treatment for non obstructive urinary retention. Although several prognostic factors for treatment success have been proposed, the test stimulation is the only reliable factor in prediction of the success. No study has evaluated the degree of bladder distension at the time of clinical presentation of urinary retention with the outcome of SNM test stimulation.

This pilot study evaluates the outcome of SNM test stimulation in patients with non-obstructive urinary retention that had a history of ≥ 1500 cc bladder distension at the time urinary retention was identified.

Study design, materials and methods

This retrospective study included all patients referred with non obstructive urinary retention with a history of bladder overdistension of ≥ 1500 cc, that occurred at least 6 months earlier. Conventional and ambulatory urodynamics were used to exclude obstruction as cause of the urinary retention. They all performed intermittent catheterisation and underwent a SNM test stimulation. Efficacy of the test stimulation was evaluated by comparing the data of voiding diary filled out during the test stimulation to the data before the test stimulation (baseline). The goal was improvement in voluntary voiding, and succes of test stimulation was defined as $>50\%$ increase in voided volume per 24 hours (and a $>50\%$ decrease of catheterised volume). In the case of a successful test stimulation, it was subsequently followed by a definitive implant.

Results

Table 1: overview of patients

Patient ID	Sex	Age (years)	Distension volume (cc)	Retention at clinical presentation	Cause retention at clinical presentation
1	male	65	6000	acute	history of obstruction, surgical removal
2	male	56	3000	acute on chronic	history of obstruction, surgical removal
3	male	53	2000	acute	history of lumbal hernia, surgical repair
4	female	62	1500	chronic	history of lumbal hernia, surgical repair
5	male	55	1800	acute	per operative overdistention
6	female	46	2000	acute	post operative overdistention
7	male	60	2100	acute on chronic	idiopathic, no clear cause
8	male	64	4500	acute on chronic	idiopathic, no clear cause
9	male	64	4000	acute on chronic	idiopathic, no clear cause
10	male	73	3000	acute on chronic	idiopathic, no clear cause
11	male	54	3500	acute on chronic	idiopathic, no clear cause
12	male	59	1600	acute on chronic	idiopathic, no clear cause
13	female	43	3500	chronic	idiopathic, no clear cause
14	female	60	1500	acute on chronic	idiopathic, no clear cause

Legend: acute: a painful, palpable or percussable bladder, when the patient is unable to pass any urine
acute on chronic: inability to void, no abdominal pain, history of frequency and voiding of small volumes
chronic: a non-painful bladder, which remains palpable or percussable after the patient has passed urine.

Fourteen patients presented at our department with non obstructive urinary retention. Their characteristics are shown in table 1. The volume of overdistention varied from 1500 to 6000cc, with a mean of 2860 cc. Two patients initially had outflow obstruction which was surgically removed; two initially had a hernia nucleosis pulposi, surgically repaired; one had postoperative bladder overdistention after hysterectomy, one had peroperative bladder distention because of a blocked dwelling catheter. In the other eight patients no clear cause for the urinary retention could be identified. None of the patients regained voiding during the SNM test stimulation.

Interpretation of results

The overall success rate of the SNM test stimulation in patients with non-obstructive urinary retention is reported around 70% [1]. However little information can be found in the published studies on the degree of bladder overdistension at the time of clinical diagnosis of urinary retention, or on the type of urinary retention (acute, acute on chronic or chronic). The success of SNM test stimulation in our group of patients with non obstructive urinary retention and a history of bladder overdistension of at least 1500 cc is very poor, as no patient regained voiding, irrespective of the cause of urinary retention or bladder overdistension.

Concluding message

Patients with non obstructive urinary retention that have a history of bladder overdistension ao more than 1500 cc are very poor candidates for sacral neuromodulation. The degree of bladder distention can be regarded as a prognostic factor for success in

SNM test stimulation. Although the number of patients included in this study is very small, the poor outcome may question a larger study from an ethical and economical point of view.

References

1. Datta, S.N. et al. Sacral neurostimulation for urinary retention: 10-year experience from one UK centre. *BJU Int.* 2008;101(2):192-96.

Disclosures

Funding: WAMU (Maastricht Urology Scientific Activities) **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** retrospective study evaluating FDA approved treatment **Helsinki:** Yes **Informed Consent:** Yes