#685: Sacral Neuromodulation Therapy for Refractory Overactive Bladder and Non-Obstructive Urinary Retention: Regional Outcome Analysis from United Arab Emirates

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Introduction

Sacral neuromodulation (SNM) is an established treatment for refractory overactive bladder (OAB) and non-obstructive urinary retention (NOUR) according to American Urologic Association Guidelines. It achieves long-term symptom relief in approximately 60–80% of patients and significantly improves quality of life [1, 2].

Objective: To evaluate a pragmatic approach to the management medically refractory overactive bladder patients. We also aimed to evaluate the efficacy and safety of SNM in our patient's population

Study Design, Methods and Materials

This single-centre retrospective cohort study included 21 patients who underwent SNM implantation between January 2019 and January 2025.

Inclusion criteria were adults (≥18 years) with OAB or non-obstructive urinary retention who had received SNM and had a minimum of six months of follow-up.

Patients with incomplete records or prior major bladder surgery were excluded. Patient demographics and clinical data, including preoperative bladder treatments such as Botox injections, were extracted from the Electronic medical report. Outcomes measured were symptom improvement (≥50% improvement), device longevity, re-interventions, complications, and changes in post-SNM medication use. Data were analysed using SPSS.

Results

A total of 21 patients underwent SNM therapy for refractory OAB, NOUR, and mixed symptoms. The cohort included 12 OAB patients, 6 with NOUR, and 3 with mixed features.

The overall mean follow-up duration was 23.3 ± 22.5 months, and the mean test phase duration was 11.3 ± 4.43 days.

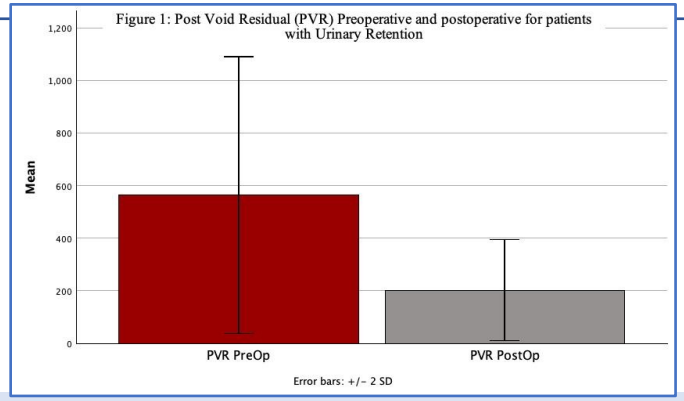
Prior to SNM, 33.3% (4/12) of OAB patients had undergone bladder Botox injections. Initial test stimulation was successful in 91.7% (11/12) OAB patients, 83.3% (5/6) NOUR patients, and 66.7% (2/3) mixed patients, leading to permanent implantation.

In the OAB subgroup, 1-month postoperative symptom improvement averaged 70.0% ± 10.0%, with 91.7% (11/12) achieving ≥50% symptom improvement at last follow-up. Medication use decreased significantly, with 72.7% (8/11) discontinuing anticholinergic/bladder medications postoperatively.

All retention patients experienced restoration of voiding function, with mean PVR volume decreasing from 579.3 ± 187.9 mL to 139.0 ± 128.6 mL. Complete bladder emptying success by 6 months was achieved in 66.7% (4/6). The mixed group saw 33.3% (1/3) achieving full bladder emptying without catheterization.

SNM device re-interventions were required in 27.7% (5/18), including three explantations (one patient had persistent pain and two patients had malfunction) and two revision/replacement. Mild postoperative pain was reported by 11.1% (2/18). No infections or lead migrations occurred.

Our cohort analysis were comparable to previously reported data including complications and re-intervention rates. More importantly, our data suggests that SNM offers similar efficacy and safety and durable therapy for refractory OAB and NOUR in our regional-specific population.



Demographic Feature	OAB (n=13)	Urinary Retention (n=5)	Mixed (n=3)
Age, years (Mean ± SD)	33 ± 2	31 ± 5	27 ± 3
Sex (Female), % (n)	61.5% (8/13)	60.0% (3/5)	100.0% (3/3)
BMI, Mean ± SD	25.5 ± 1.3	28.2 ± 1.8	26.9 ± 1.2
Ethnicity (Arab), % (n)	100% (13/13)	100% (5/5)	100% (3/3)
Smokers, % (n)	15.4% (2/13)	40.0% (2/5)	0.0% (0/3)
Diabetic, % (n)	7.7% (1/13)	20.0% (1/5)	0.0% (0/3)
Hypertension, % (n)	15.4% (2/13)	20.0% (1/5)	0.0% (0/3)
Dyslipidemia, % (n)	15.4% (2/13)	0.0% (0/5)	0.0% (0/3)
Heart Disease, % (n)	15.4% (2/13)	0.0% (0/5)	0.0% (0/3)
Neurological Disease, % (n)	30.8% (4/13)	80.0% (4/5)	66.8% (2/3)

Conclusions

SNM therapy was effective and safe in this cohort, yielding substantial symptom and quality-of-life improvements with acceptable adverse events. These findings support the use of SNM as a durable treatment option for refractory OAB and urinary retention.

References:
1. Chartier-Kastler E, Le Normand L, Ruffion A, et al. (2022). Sacral neuromodulation with the InterStim™ system for intractable lower urinary tract dysfunctions (SOUNDS): results of a French multicenter observational study. Eur Urol Focus, 8(5), 1399–1407.
2. Siegel S, Noblett K, Mangel J, et al. (2018). Five-year follow-up results of a prospective, multicenter study of overactive bladder patients treated with sacral neuromodulation. J Urol, 199(1), 229–236.