



Fluoroscopy for Percutaneous Nerve Evaluation - A Single Center Account



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Introduction

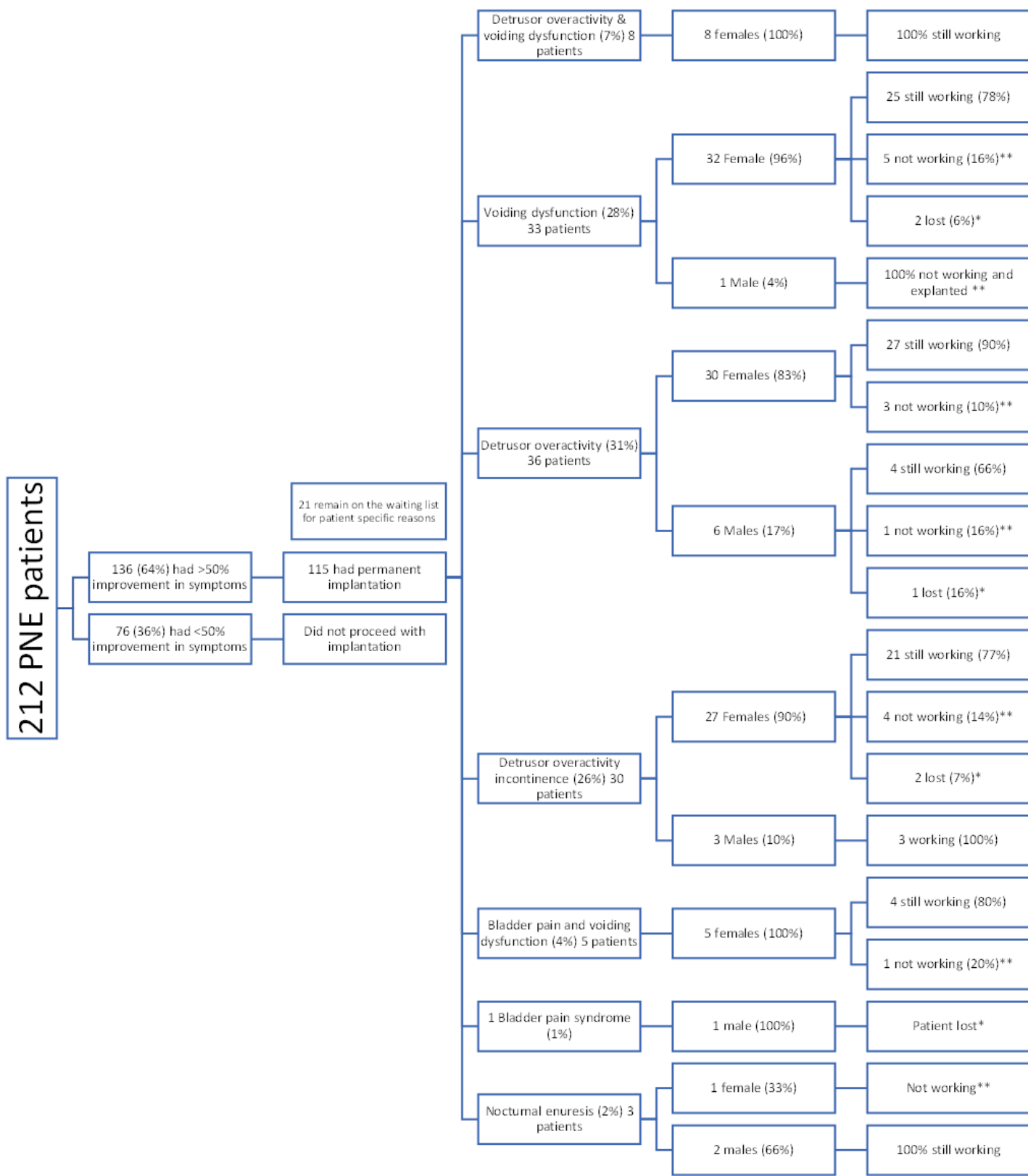
- Sacral Neuromodulation (SNM) treats refractory overactive bladder and voiding dysfunction.
 - It involves two stages: percutaneous nerve evaluation (PNE) or advanced tined lead evaluation (ATLE).
 - PNE traditionally uses surface landmarks, yielding a 44-52% conversion rate.
 - ATLE, with an 80% suggested conversion rate, is more effective.
- Limited research exists on fluoroscopy-assisted PNE success.
- This study examines a fluoroscopy-based center's data to determine PNE conversion rates.

Methods and Materials

A retrospective review of PNEs performed between September 2018 and September 2022

- 212 patients underwent PNE with fluoroscopy with the following indications:
 - Voiding dysfunction (VD)
 - Detrusor overactivity (DO)
 - Nocturnal enuresis
 - Bladder pain syndrome.

Figure 1. Total number of patients in study



* Patients were lost due to change of residency or failure to respond to appointment letters
** Not working refers to a <50% symptom improvement

Results

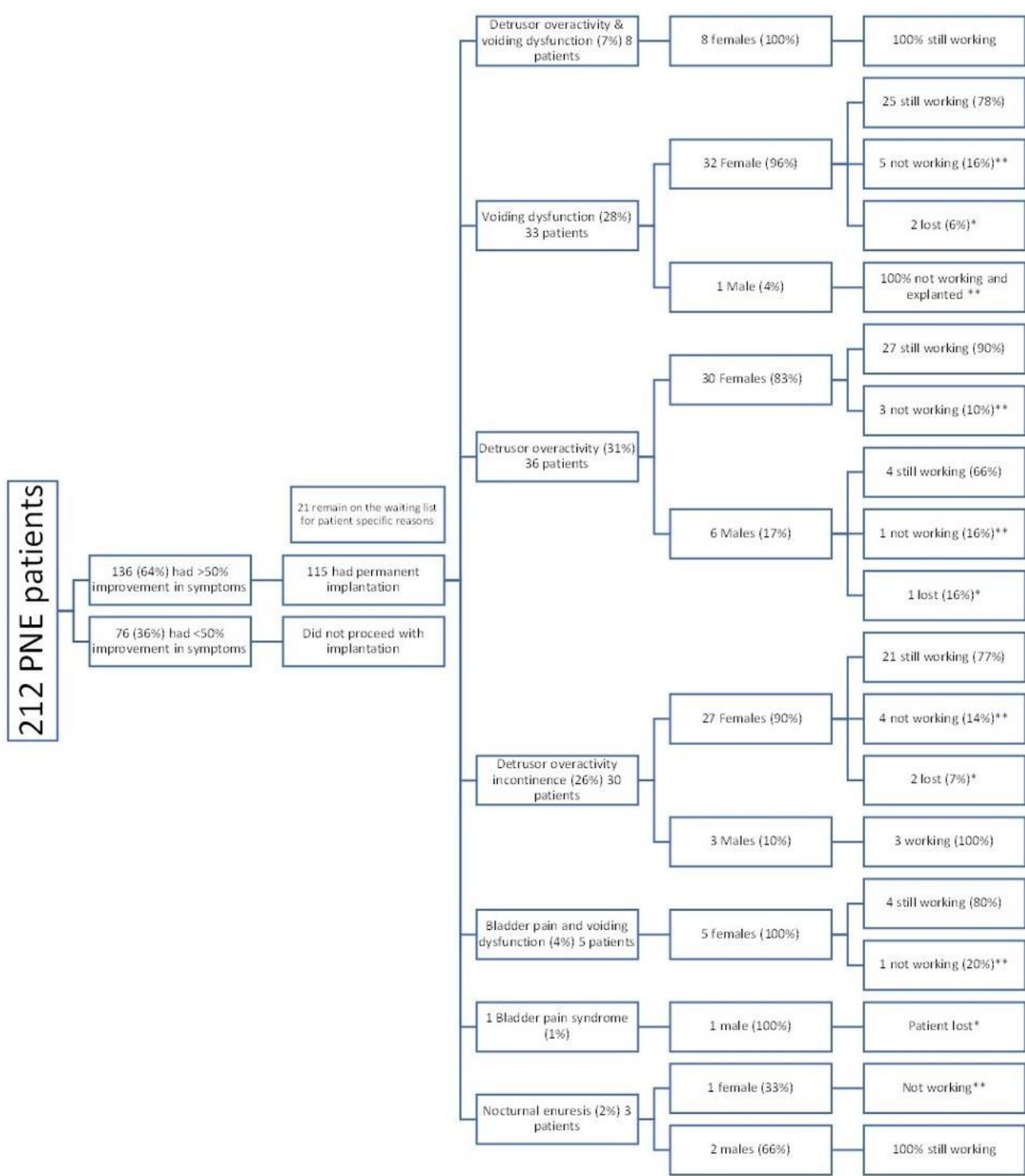
The rate of permanent implant after ≥50% improvement in symptoms assessed on a bladder diary was analysed along with continued symptom control at 2 – 42 months of follow-up

- 64% (n=136) of patients experienced a more than 50% improvement in symptoms which is **higher** than the previously reported success rate of 44-52% (figure 1), without the use of fluoroscopy.

Success rate was established through self-reported outcome measures (ICIQ-LUTS, ICIQ-QoL, ICIQ bladder diary).

- Successful Group Evaluation:
 - Success evaluated by patient diagnosis (Figure 2).
 - Highest sustained success in patients with mixed symptoms.
 - DO and VD patients had 100% ≥50% improvement post-implant (n=8).
- Unsuccessful PNE Patients:
 - 76 patients (36%) in unsuccessful group.
 - Common diagnoses: DOI (27%), VD (24%), DO (21%).
 - Suggests DO, DOI, and VD are frequent in unsuccessful PNE case

Figure 2. Successful patients and continued success rate



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Conclusions

- Our research emphasizes that fluoroscopy significantly improves the success of converting PNE to (SNM), aiding lead alignment and optimizing resource utilization.
 - PNE with fluoroscopy guidance is a viable test option for patients allowing an acceptable conversion rate without the need for an ATLE.
 - It can be performed in the outpatient setting under local anaesthetic only and therefore has the benefit of not requiring theatre space or being as vulnerable to surgical cancellations
- In contrast to Advanced Tined Lead Evaluation (ATLE) requiring urgent action in four weeks, PNE permits outpatient removal and scheduled subsequent implantation.
- **This study shows a higher than reported success rate with the addition of fluoroscopy, and this may have important financial, and patient centered implications including reducing waiting lists and pressures on operating lists.**

References

D’Ancona, Carlos, et al. “The International Continence Society (ICS) Report on the Terminology for Adult Male Lower Urinary Tract and Pelvic Floor Symptoms and Dysfunction.” Neurourology and Urodynamics, vol. 38, no. 2, 25 Jan. 2019, pp. 433–477, <https://doi.org/10.1002/nau.23897>.