

# Bladder Neck BoNT-A Injection Yields Limited Satisfaction, With Best Results in Pure Non-neurogenic BND; Surgery Remains Definitive for Refractory Cases

## Background

- Bladder neck dysfunction (BND) impairs bladder emptying, and BoNT-A injection remains a minimally invasive option with limited evidence in BND.

## Methods:

- Retrospective case series (2005–2023)
- 41 patients with videourodynamic study (VUDS)–confirmed BND or neurogenic BND (NBND)
- 100 U BoNT-A injected at 5 bladder neck sites; some also received urethral sphincter injection
- Primary outcome: Global Response Assessment (GRA) at 6 months

## Results

Parameters	Satisfactory (n = 27)	Failed (n = 14)	p-Value
Age (years)	40.1 ± 18.1	50.4 ± 12.7	0.065
VUDS parameters			
BND	9 (33.3%)	2 (14.3%)	0.637
BND + DV	8 (29.6%)	5 (35.7%)	
NBND	2 (7.4%)	1 (7.1%)	
NBND + DSD	8 (29.6%)	6 (42.9%)	
FSF (mL)	144.5 ± 72.9	143.6 ± 56.1	0.970
FS (mL)	233.0 ± 103.9	217.3 ± 88.4	0.633
US (mL)	287.2 ± 123.7	268.5 ± 120.0	0.646
Compliance	70.7 ± 59.7	81.7 ± 96.7	0.655
Pdet (cmH <sub>2</sub> O)	33.3 ± 23.8	36.1 ± 30.4	0.746
Qmax (mL/s)	6.6 ± 5.2	8.0 ± 6.5	0.443
Volume (mL)	178.0 ± 175.0	170.6 ± 162.8	0.895
PVR (mL)	153.3 ± 156.2	171.4 ± 225.9	0.765
CBC (mL)	331.4 ± 142.1	342.0 ± 185.4	0.839
VE	0.52 ± 0.41	0.56 ± 0.41	0.807
BOOI	25.9 ± 22.8	41.4 ± 33.5	0.154
BCI	66.0 ± 36.2	76.1 ± 39.8	0.421

## Overall Outcomes at 6 months

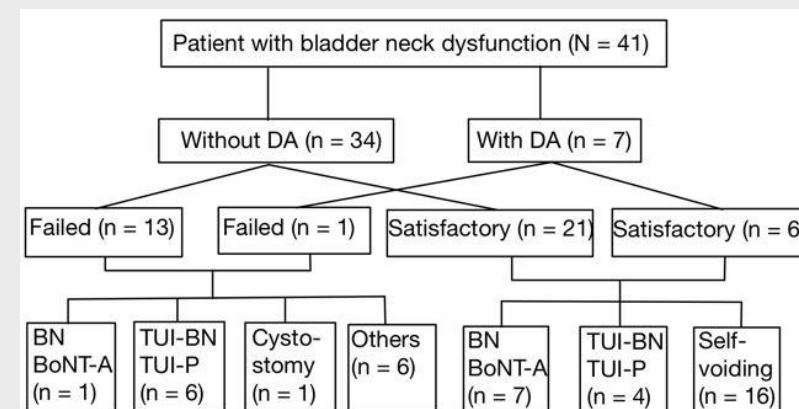
- Successful: 26.8%
- Improved: 39.0%
- Failed: 34.1%
- Overall satisfaction: 65.9%

## By etiology

- BND: 81.8% satisfied
- NBND + detrusor sphincter dyssynergia (DSD): 57.1% satisfied

Parameters	Satisfactory (n = 21)	Failed (n = 13)	p-Value
Age	39.1 ± 18.8	51.8 ± 14.1	0.056
VUDS parameters			
BND (n = 11)	9 (42.8%)	2 (15.3%)	0.565
BND + DV (n = 12)	7 (33.3%)	5 (38.5%)	
NBND (n = 2)	1 (4.7%)	1 (7.7%)	
NBND + DSD (n = 9)	4 (19.0%)	5 (38.5%)	
FSF (mL)	125.9 ± 53.4	132.7 ± 57.9	0.737
FS (mL)	212.2 ± 92.0	200.9 ± 79.7	0.729
US (mL)	266.4 ± 116.0	249.0 ± 103.2	0.674
Compliance	74.0 ± 63.0	94.1 ± 104.7	0.490
Pdet (cmH <sub>2</sub> O)	36.2 ± 23.4	42.5 ± 30.9	0.514
Qmax (mL/s)	6.8 ± 5.1	8.8 ± 6.9	0.351
VoL (mL)	188.3 ± 181.0	192.6 ± 166.5	0.947
PVR (mL)	122.2 ± 124.2	118.2 ± 152.1	0.935
CBC (mL)	310.5 ± 140.9	310.8 ± 144.7	0.995
VE	0.56 ± 0.40	0.64 ± 0.40	0.602
BOOI	27.7 ± 23.8	52.5 ± 30.8	0.047
BCI	70.3 ± 33.5	86.6 ± 35.9	0.205

- In patients **without detrusor acontractility (DA)**, higher baseline bladder outlet obstruction index (BOOI) → higher failure risk



## Subsequent management

- Repeat BoNT-A in 25.9% of responders
- TUI-BN/TUI-P in 14.8% of responders & 42.9% of failures → all achieved long-term success

Yu-Shuang Lee, Tsu-Hsiu Huang, Hann-Chorng Kuo

Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Hualien, Taiwan