

Predictive value of voiding efficiency after active void trial in men undergoing BPH surgery

Corinne Del Rosario, Thomas W. Gaither, Parth Patel, Z. Chad Baxter, Stephanie Pannell, Matthew Dunn

Background

- The timing of Foley catheter removal after transurethral resection of prostate (TURP) or Holmium enucleation of prostate (HoLEP) has been debated.
- Early Foley catheter removal reduces patient discomfort and catheter-associated infections.
- However, this management strategy may place patients at risk for urinary retention, which has been reported to occur in 10-15% of patients after BPH surgery.
- Foley catheterization (>48 hrs) may decrease risk of future urinary retention but can increase length of stay in the hospitals.
- Further risk stratification to identify patients who may develop post-operative urinary retention is necessary.

Goals

- Assess the reliability of voiding efficiency of the first void after active filling compared to subsequent voids.
- Assess the independent association between voiding efficiency and urinary retention after discharge.
- Determine if any other perioperative clinical factors are associated with urinary retention after discharge.

Methods

- Prospective cohort study, observation of clinical practice from December 2019 to August 2021.
- All men underwent TURP and HoLEP.
- All patients in the study underwent a trial of void on POD 1.
- Patients whose foley catheters were reinserted prior to discharge where excluded.
- The patients were categorized into three groups: <50%, 50-75% and >75% emptying.

Results

- Proportion of patients presenting for urinary retention after discharge stratified by voiding efficiency and prostate size

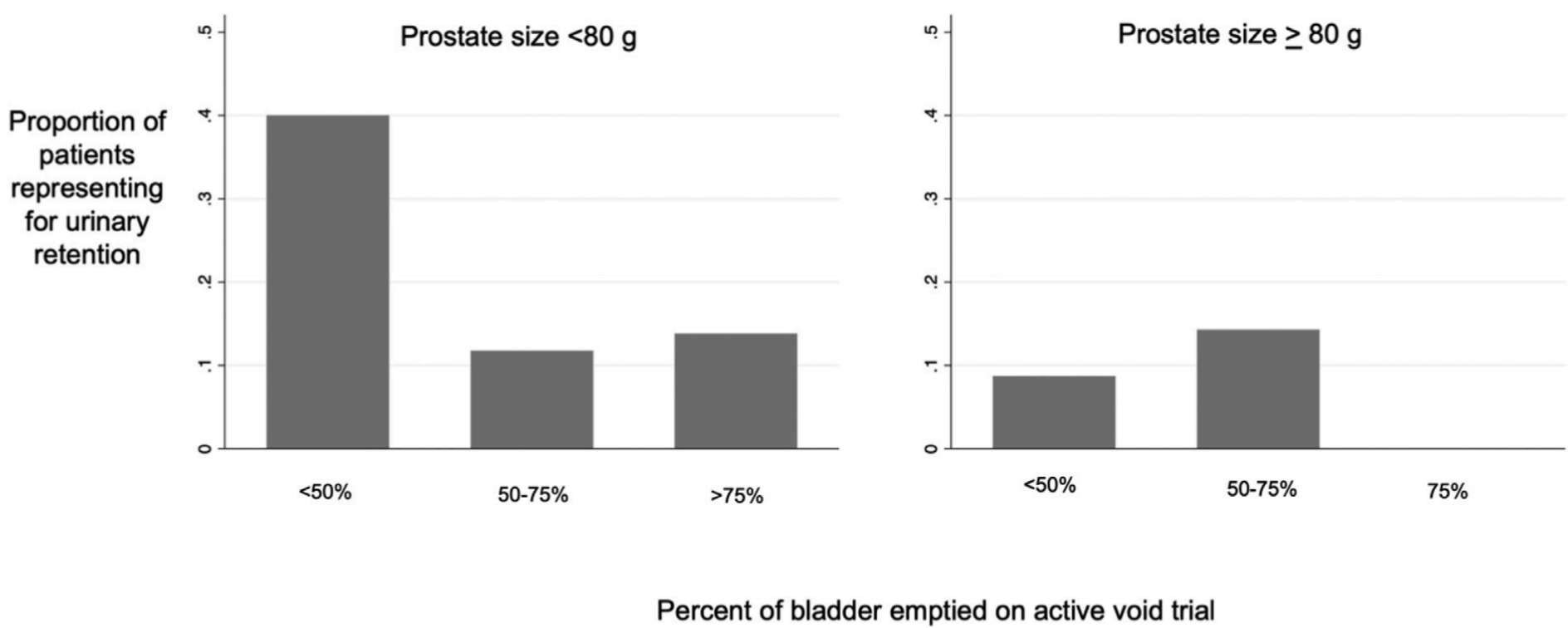


Figure 1. Proportion of patients presenting for urinary retention after discharge stratified by voiding efficiency and prostate size.

- Voiding characteristics post-operative day 1 after BPH surgery

	N	Instillation amount (cc)	Void volume (cc)	PVR (cc)	Voiding efficiency*	Correlation with first void r^2
First void, median (IQR)	188	300 (240-350)	250 (195-300)	92 (21-179)	75 (55-94)	—
Second void, median (IQR)	147	n/a	200 (125-300)	98 (35-192)	69 (48-90)	0.40
Third void, median (IQR)	81	n/a	220 (150-300)	133 (48-200)	63 (53-82)	0.36
Fourth void, median (IQR)	36	n/a	220 (175-340)	145 (55-200)	65 (51-81)	0.40

* Percent of bladder emptied.

Data

- Table 1. Demographic and medical characteristics of patients undergoing BPH surgery

Table 1. Demographic and medical characteristics of patients undergoing BPH surgery (n = 188)	
Age, median (IQR)	70 (65-75)
Prostate size (cc), median (IQR)	100 (61-138)
Surgery type, n (%)	
TURP	78 (41)
HoLEP	110 (59)
Previous BPH surgery, n(%)	
Yes	13 (7)
History of diabetes, n(%)	
Yes	27 (14)
Current BPH medications, n(%)	
Alfa blocker	130 (69)
5-alfa reductase inhibitor	48 (26)
Pre-op voiding status, n(%)	
Voiding	149 (79)
CIC	14 (7)
Foley dependent	25 (13)
Pre-operative culture, n(%)	
Positive	31 (16)
Surgery length (min), median (IQR)	116 (77-178)
Weight of prostate chips (g), median (IQR)	36 (14-64)
Degree of hematuria before void trial, n(%)	
Yellow	23 (12)
Light pink	133 (71)
Fruit punch	32 (17)
Foley insertion/CIC after hospitalization, n(%)	
Yes	19 (10)

Conclusion

- The initial void does not strongly correlate with the ability to empty one's bladder on subsequent voids.
- Patients who empty less than 50% of their bladder on POD 1 and have a smaller pre-operative prostate sizes (<80g) are high-risk for urinary retention.
- Clinicians should consider replacing the foley catheter in these group to avoid urinary retention after discharge.