

#575 Urodynamics Voiding Position and Seating Characteristics: Potential for Misdiagnosis of Atonic Bladder



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BACKGROUND

- Underactive bladder (UAB) is a lower urinary tract (LUT) diagnosis that occurs in the setting of **urodynamic detrusor underactivity (DUA)**¹
- DUA is diagnosed with multichannel urodynamic studies (UDS)²⁻⁴
- Little is known about the effect of voiding position and DUA detection

OBJECTIVE

- To investigate whether moving individual who cannot mount a contraction from the UDS chair to their typical voiding **position and surface** consistently led to more accurate assessment of detrusor function.

HYPOTHESIS

- Patients unable to void while on a soft, high, unfamiliar UDS chair may be misdiagnosed with detrusor underactivity
- Changing position to a more natural position and surface may improve diagnostic accuracy, revealing intact detrusor function

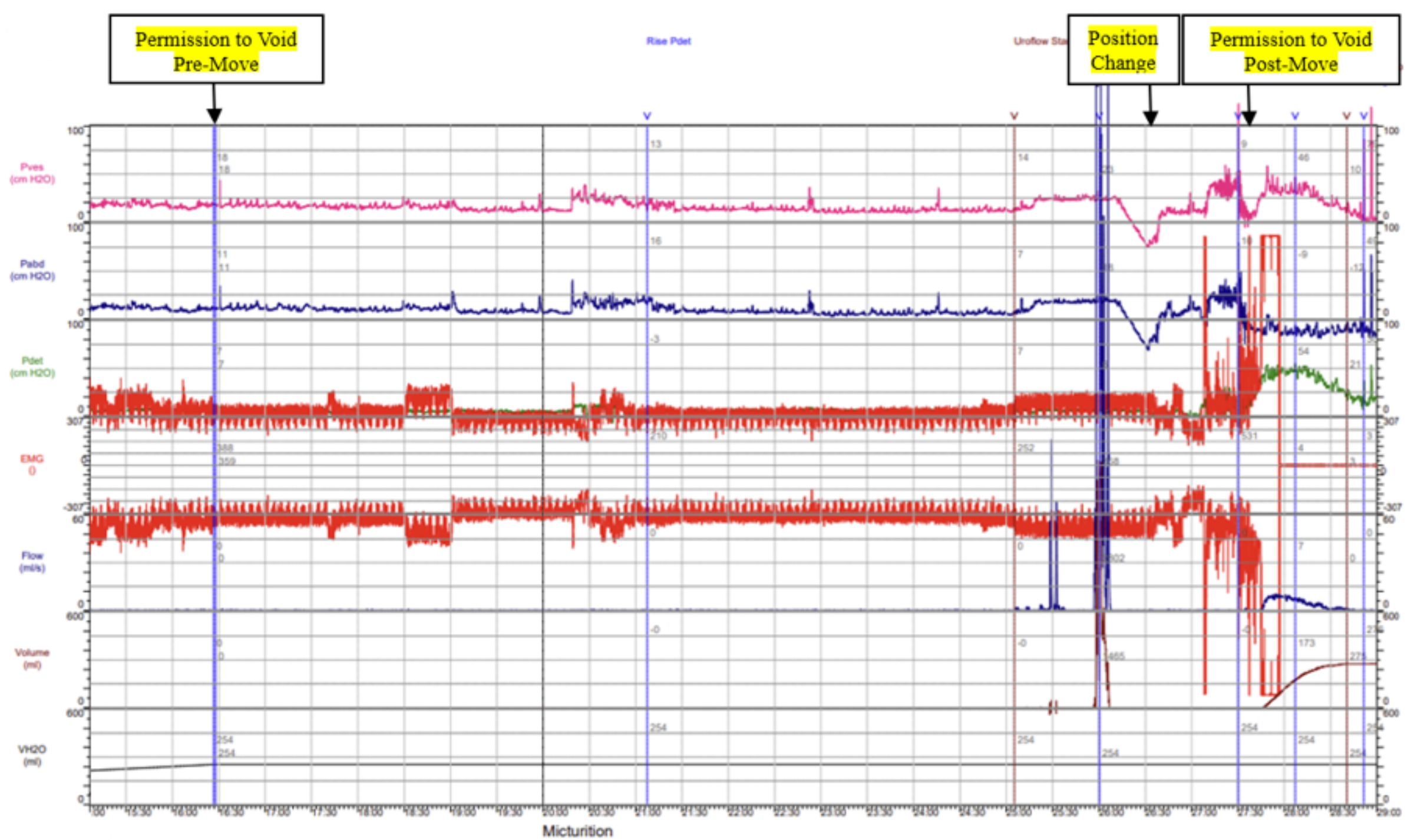
METHODS

- Retrospective cohort study of patients who underwent UDS with a single fellowship trained urodynamicist over a two-year time frame
- Studies were included if a patient was moved to a commode or to a standing position after unsuccessful void attempt on the UDS chair**
- Two urodynamicists reanalyzed the studies and recorded the following:
 - Time spent attempting to void in the UDS chair
 - Whether a bladder contraction was present in the UDS chair
 - pDet Q max and Q max when voiding occurred
 - Time spent attempting to void after moving to new position
 - Presence of bladder contraction in new position
 - pDet Q max and Q max in new position
- Analysis was performed of whether position change affected the presence of an observable bladder contraction on UDS

Figure 1: Sonesta Urology Exam Chair, Model 6210



Figure 2: UDS tracings of patients before and after position change



RESULTS

- 503 patients underwent UDS. 94 (18.7%) were moved to commode or standing position due to unsatisfactory or absent void on the UDS chair. 81/94 studies were interpretable.
- 90% (73/81) patients unable to void on UDS chair were able to void in new position**

Total Cohort, n =81	Standard Exam Chair mean +/- SD*	Chosen Position mean +/- SD*	p value
Time to void (min)	8.4 +/- 4.1	2.3 +/- 1.9	<0.001
Qmax (ml/s)	2.2 +/- 2.8	11.1 +/- 7.6	<0.001
pdet Qmax (cm H2O)	6.9 +/- 11.8	25.9 +/- 17.9	<0.001
BOOI [§]	13.3 +/- 14.4	38.3 +/- 28.6	0.002
BCI [#]	13.6 +/- 15.1	61.7 +/- 31.6	<0.001

SD: standard deviation; BOOI[§]: bladder outlet obstruction, BCI[#]: bladder contractility index
Footnote: BOOI[§] and BCI[#] pertain to men only

Table 1: Differences in voiding attempts on UDS chair versus new position

Total Cohort, n=81	Provider 1 n (%)	Provider 2 n (%)	Kappa
Absence of Bladder Contraction: Pre-Move	59 (73)	58 (72)	0.78
Presence of Bladder Contraction: Pre-Move	22 (27)	23 (28)	
Absence of Bladder Contraction: Post-Move	7 (9)	8 (10)	0.42
Presence of Bladder Contraction: Post-Move	74 (91)	73 (90)	

Table 2: Inter-urodynamicist agreement in evaluation of a bladder contraction on UDS chair versus new position

CONCLUSIONS

UDS voiding position and surface can impact whether patients produce a bladder contraction during urodynamic testing.

Atonic and hypotonic bladder can be misdiagnosed when patient voiding attempts are assessed on an inhibiting urodynamics chair.

Positional change to a more natural voiding position and surface improve capture of intact detrusor function in our cohort.

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