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Raamya Motilal S[1], Agarwal M[1], Mavuduru R[1], Barapatre Y[1], Singh S[1], Mandal A[1]
1. *Postgraduate Institute of Medical Education and Research*

IS IT ESSENTIAL TO CUT-OFF CATHETERS FROM TRANSDUCERS WHILE ZEROING TO ATMOSPHERIC PRESSURE IN PREPARING FOR MULTICHANNEL URODYNAMIC STUDY

Hypothesis / aims of study

Zeroing of the transducers to atmospheric pressure (Patm) is an essential pre-requisite to multichannel urodynamic study (UDS). Conventionally, the catheter is kept cut-off from the transducer while zeroing to Patm[1]. Since, the pressure measured by the catheters after opening to the transducer represents that 'over and above' Patm, we hypothesized that it is more relevant to zero the internal pressures to the Patm. We compared two methods of the zeroing to Patm.

Study design, materials and methods

Ten consecutive patients irrespective of age, sex or indication of the UDS were enrolled. Written informed consent was taken from each participant before inclusion. The UDS was performed with Solar Silver®, MMS International, Enchede, the Netherlands. It comprised of a filling cystometry and pressure flow study using two channels; a dual lumen cystometry catheter (6Fr) for measurement of Pves and a single lumen rectal catheter (5Fr) for measurement of Pabd. After securing all connections and placing the transducers at the level of superior border of pubic symphysis. In every participant, zeroing of transducers to the Patm was performed using two methods each by separate investigator, mutually blinded. In first method (method 1), each of the transducer was cut-off from respective catheter and opened only to the atmosphere for zeroing, subsequently the knob turned off from atmosphere and open only to catheters. Any residual value of detrusor pressure (Pdet) was zeroed using "Pdet to Zero" tool and Pabd / Pves values recorded. In second method (method 2), the respective catheter was opened to atmosphere through the transducer. Rest of the procedure remained the same.

Since no study is available for reference for sample-size calculation, we undertook this study as pilot project and arbitrarily enrolled 10 patients. The difference in Pves and Pabd measured by the two methods was compared using independent sample t-test.

Results

There was no statistically significant difference in baseline Pabd and Pves attained after zeroing using either of the methods (table 1).

Table 1: comparison of means (± standard deviation) of the Pabd and Pves obtained by two methods of zeroing

	group	N	Mean	Std. Deviation	P value of difference
Pves	1.00	10	13.1	7.6	0.84
	2.00	10	12.3	8.2	
Pabd	1.00	10	13.1	7.6	0.84
	2.00	10	12.3	8.2	

Interpretation of results

The baseline Pabd and Pves values after zeroing were similar, in both circumstances whether the catheter channels were cut-off or remained connected to transducers while zeroing to atmospheric pressure.

Concluding message

It is not essential to cut-off the catheter from transducer while zeroing the transducer to the atmospheric pressure before urodynamic study.

References

1. Cystometry. In: Abrams P, Urodynamics, Springer-Verlag, London, 3rd ed, pp - 47.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**institute ethics committee, postgraduate institute of medical education and research**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**