



# # 171 Condom Catheter test revisited: A modified prototype for non-invasive measurement of isovolumetric bladder pressure.

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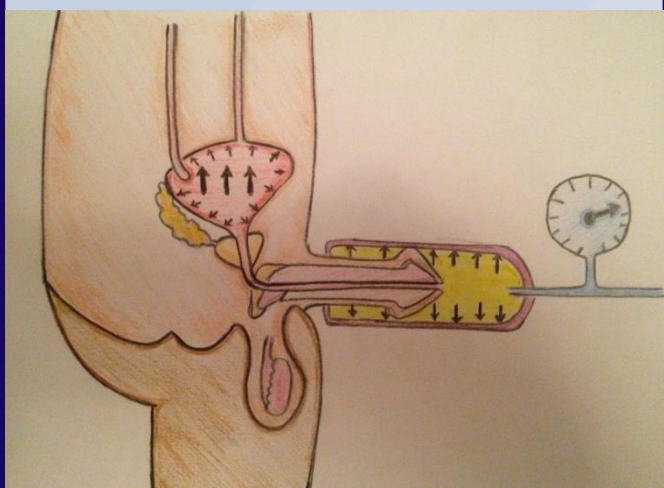
## ABSTRACT

To test a modified condom catheter test prototype for measurement of transmitted isovolumetric pressure and compare it with invasive isovolumetric pressure using the manual penile compression test (Pinch test).

A pilot study was performed in 20 adult male patients undergoing urodynamic study for nocturnal enuresis. The patients underwent stop-flow test and next day the modified condom catheter test. Only patients with no overactivity in pressure-flow study underwent the study.

## METHODS

We used a single outflow condom catheter attached to the penis with a y-shaped connector attached to it. One limb of the Y was attached to pressure transducer and the other limb was used to make the condom air free to avoid artifacts during pressure measurement then was blocked. The condom was stiffened with adhesive tape to lower its compliance and limit its distensibility to maximal capacity of 70-120 ml. The tape was extended to the penile skin to guard against leakage. The patients were instructed not to strain during voiding and we excluded results associated with any straining. Maximal recorded pressure was designated as Transmitted Isovolumetric pressure. Pressure-flow test was done in another day with interruption of flow during voiding using manual compression of the penis (Pinch test). Isovolumetric pressure was recorded and compared with transmitted isovolumetric pressure of modified condom test. Statistical analysis was done using student t test.



## RESULTS

All patients were able to undergo the study. No leakage or excessive distension of the condom occurred. Mean patient age was 21.2 $\pm$  5.1 years. Mean Transmitted isovolumetric pressure was 61.7 $\pm$  33 cm/H<sub>2</sub>O while mean invasive isovolumetric pressure was 70.1 $\pm$  45 cm/H<sub>2</sub>O. Voided volume ranged between 70 and 120 ml with a mean of 94.3 $\pm$  22.8 ml. No obvious morbidity was noticed during the condom test.

## CONCLUSIONS

Isovolumetric bladder pressure can be measured non-invasively using this modified condom catheter. The test shows good correlation with invasive test in young non-obstructed male patients with no appreciated side effects. The test is simpler and quicker. Feasibility of the test should be tested further in larger group of patients.