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Title (type in CAPITAL LETTERS): THE EFFECT OF THE URETHRAL PRESSURE CATHETER ON THE RELABILITY OF PRESSURE FLOW STUDIES.

Aim of the work: Pressure Flow study is the mainstay for diagnosis of infravesical obstruction in the modern urodynamic studies. Since the development of this test, there has been a continuing debate regarding the effect of the urethral catheter on the results of the test. Recently, it has been shown that urethral pressure catheters of size 8 fr and less don't obstruct the outflow. In the present study we are testing this hypothesis. The effect of a 6 fr urethral pressure catheter is studied from different aspects.

Methods: Sixty four patients presented to our urodynamic clinic for assessment of various voiding and storage problems were included in our study. Only 40 were eligible for this study. The rest were excluded due to either significant artifacts in the study, small voided volumes, inability to void, or inability to store a sufficient amount of the infused volume. Pressure flow study was done with a 6 fr urethral pressure catheter. The pressure flow data were compared to the free uroflowmetry data. The magnitude of the difference in the peak flow rate, between the two studies, were correlated with age, sex, peak flow rate of both the uroflowmetry and pressure flow study, the voided volume in both studies, opening pressure, detrusor pressure at maximum flow, AG number, group specific urethral resistance factor (URA), detrusor contraction strength (WF max), cystometric capacity and finally the presence or absence of uninhibited contractions.

Results: There was a statistically significant difference between the peak flow rates of the uroflowmetry (18.96±1.5 ml/s) as compared to the pressure flow study (15.55±1.36 ml/s). The difference between the values of the average flow rate and voided volume in both studies didn't reach statistical significance. All patients except 8 showed drop in the peak flow rate. Female patients showed on the average an increase in the flow rate by 3.67% while male patient showed a drop by 19.53% when the pressure flow study peak flow rate was compared to that of the free uroflowmetry. Non of the factors mentioned in the methodology correlated with the magnitude of the change in the peak flow rate. Nevertheless, there was some correlation between the uroflowmetry peak flow rate and the URA value (R^2=0.33). Non of the patients with peak flow rate of 15 cmH_2O or more has been categorized as obstructed using the pressure flow study.

Conclusion: The presence of urethral pressure catheter during the pressure flow study affected the peak flow rate in males. This effect was not apparent in females. Non of the parameters indicating infravesical obstruction or that expressing detrusor strength correlated with the magnitude of that difference. However, this negative effect of the pressure catheter does not seem to affect the final diagnosis of the patient.