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Title (type in CAPITAL LETTERS): Ambulatory urodynamics:the investigation of choice for voiding difficulties?

Aim of study: Voiding difficulty is diagnosed in approximately 2% of women investigated for urinary symptoms. Pressure/flow studies are essential for determining the cause of the voiding dysfunction, but may be difficult to obtain in the laboratory setting. This study attempts to determine whether ambulatory urodynamics has advantages over laboratory urodynamics in investigating these women.

Methods: Women were urodynamically diagnosed as having voiding difficulties if the peak flow rate was less than 15 ml/sec after voiding greater than 150 mls with or without a urinary residual. All women underwent videocystourethrography with fast fill cystometry. A detrusor pressure in excess of 60 cmH_2O with a flow rate less than 15 ml/sec was taken as being diagnostic for obstructed voiding. Urethral pressure profilometry was performed according to the technique of Hilton and Stanton(1). An abnormally elevated maximum urethral closure pressure (MUCP) was diagnosed if the pressure was greater than (11-age) multiplied by 110%(2). The women then underwent ambulatory urodynamics using a standard regimen, the ambulatory system had a plug-in flowmeter and leakage detector. The trace was interpreted with the woman present at the end of the test.

Results: Twenty-seven women mean age 53 years (sd 13) with voiding difficulties were recruited. Twenty five women had a post-micturition urinary residual on laboratory urodynamics (mean 224ml, sd 117). Twenty four women had a urethral pressure profile with a mean value of 62.5 cmH_2O (sd 29). Only eleven women (41%) managed to void during the laboratory urodynamic test to give pressure/flow information whereas 26 (96%) of the

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women voided during the ambulatory urodynamic test ($p<0.05$, Chi square test) to provide pressure/flow data. Only one woman did not produce good quality pressure/flow information as the rectal pressure catheter was repeatedly displaced during voiding. The laboratory urodynamic pressure/flow information diagnosed five women as being obstructed and one woman as having a hypotonic detrusor. Of these women only one woman had an abnormally elevated MUCP for her age. Ambulatory urodynamics revealed five completely different women as having consistently obstructed voids of whom four had abnormal MUCP measurements. Additionally four women were found to have hypotonic detrusor contractions during voiding in the ambulatory urodynamic test, none of these cases had an abnormally elevated MUCP. Seven women had an abnormally elevated MUCP.

Conclusion: Ambulatory urodynamics is a useful method of assessing voiding difficulties in women. This technique allows consistent measurement of a number of pressure / flow studies. The diagnosis of obstructed voidng during ambulatory urodynamics is more consistently found to correlate with abnormally elevated maximum urethral closure pressures than obstructed voidng diagnosed on laboratory urodynamics.

References:

1. Br J Obstet Gynaecol 1983;90:919-33.

2. Acta Obstet Gynecol Scand 1980;59:331-5.