742

Zimmern P[1], Defreitas G[2], Lemack G[2], Shariat S[2]
1. The University of Texas Southwestern Medical Center, 2. The University of Texas Medical Center

THE CLINICAL UTILITY OF A TWO FILL AND VOID URODYNAMIC STUDY IN WOMEN WITH BLADDER OUTLET OBSTRUCTION (BOO)

Hypothesis / aims of study

There is a lack of information as to whether or not a "two fill and void" urodynamic study (UDS), as suggested by the International Continence Society for UDS in men (1), would provide a PFS more representative of the patient's actual voiding function. Thus, to determine whether a second run should be performed routinely in women with obstructed voiding, we assessed whether the first or second PFS of a "two fill and void" UDS test performed in a group of women with BOO was employed in clinical decision-making.

Study design, materials and methods

Institutional review board approval and informed patient consent were obtained prior to undertaking this study. Sixty-two consecutive women with BOO underwent multichannel UDS between 3/2000 and 2/ 2003. All had BOO based on the presence of obstructive and/or irritative LUTS, a history of urethral or bladder neck surgery, a pelvic examination revealing urethral hyper-elevation, and/or a standing voiding cystourethrogram showing kinking or narrowing of the urethra on lateral voiding views. All underwent UDS testing according to a "two fill and void" protocol using the Laborie Aquarius XLT (Laborie Medical Technologies, Toronto, Canada). A 6F double-lumen catheter was used for filling and bladder pressure measurement and a 9F rectal catheter for abdominal pressure. EMG was performed using perianal patch electrodes. Transducers were zeroed to atmosphere at the level of the symphysis pubis. Filling was done in standing position using sterile room temperature water at 10-50 ml/min until maximal bladder capacity. After transducer adjustment in sitting position, patients were asked to void. Maximum flow rate (Qmax) and detrusor pressure at maximum flow rate (PdetQmax) were determined manually from the UDS tracing rather than relying on computer readings. We excluded women with a neurologic condition, a bladder capacity of < 100 ml, women voiding with abdominal straining > 10 cm water or failing to relax the pelvic floor during voiding, and women unable to void. We also excluded 20 BOO women with stage $\geq$ 3 cystocele because they underwent reduction of their prolapse during the first UDS run. The flow curve, Qmax and PdetQmax of both PFS runs for each patient were compared.

Results

Of the 62 clinically obstructed women, 23 had previous anti-incontinence surgery (S) and 39 had distal urethral obstruction (DUO). Eleven women did not have a complete set of 2 "fill and void" studies due catheter slipping out during the first or second void. Of the 51 women who had 2 UDS runs during the same study, 25 (49%) had a higher Qmax and/or lower PdetQmax during the second PFS which, as the better of the 2 studies, was used in clinical decision-making. The proportion of second runs used was not significantly different for the S group compared to the DUO group (39% vs. 55% respectively, $p = 0.382$).

Interpretation of results

In those clinically obstructed patients who had a "two fill and void" UDS study, a better PFS was obtained on the second run approximately 50% of the time. This finding supports the routine performance of a second run during the UDS assessment of women with obstructed voiding, since it suggests that clinical decision making may rely on the findings of the second UDS run a substantial proportion of the time.

Concluding message

Since a better PFS for clinical decision making was obtained on the second trial for half of patients, the routine performance of a "two fill and void" UDS study recommended in men with BOO can also be applied when evaluating women with clinical BOO.

Reference

(1) The standardization of terminology of lower urinary tract function: report from the standardization sub-committee of the International Continence Society. Neurourol Urodyn **21**: 167-178, 2002.