DOES URETHRAL FUNCTION AFFECT URODYNAMIC VOIDING PARAMETERS IN WOMEN WITH PROLAPSE?

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Introduction and Objective: We hypothesized that women with pelvic organ prolapse (POP) and overt stress urinary incontinence (SUI) would demonstrate less obstruction and retention because of the "release valve" effect of a less competent urethra. To evaluate this, we conducted a prospective supplementary study to the **C**olpopexy **A**nd Urinary **R**eduction **E**fforts **(CARE)** study. We compared voiding parameters and symptoms in 3 groups of women with POP: 1) women with no symptoms of SUI and no urodynamic stress incontinence (USI) during prolapse reduction , 2) women with no SUI symptoms but evidence of USI on reduction testing (occult USI) and 3) women with SUI symptoms (overt SUI).

Methods: We enrolled 225 women with stage II-IV POP. The two groups randomly selected from the CARE population differed only in the absence (N=67) or presence (N=84) of USI during prolapse reduction. Group 3 consisted of 74 women, recruited for this supplementary study, who were similar to CARE subjects except for reporting subjective SUI. Subjects completed the Pelvic Floor Distress Inventory, underwent a standardized Pelvic Organ Prolapse Quantification (POP-Q) examination, and a standardized non-instrumented uroflow (NIF), filling cystometry and pressure-flow studies using the standardized CARE urodynamics (UDS) protocol. We defined obstruction using the Blaivis-Groutz nomogram for women and urinary retention as a post-void residual (PVR) of ≥ 25% of total bladder volume.

Results: The subjects' median age was 61 years with a median parity of 3. Eighty-seven percent of women had stage III or IV POP. Approximately one-third (38%) of the women had prior surgery for POP or urinary incontinence. Demographic variables were similar amongst the three groups except Group 2 (occult SUI) was older than Group 1 (p=0.02). Only 14% of women with pre-operative overt SUI (Group 3) demonstrated USI during UDS without prolapse reduction, increasing to 70% with reduction. Sixteen percent and 8% of 223 women demonstrated detrusor overactivity (DO) and detrusor overactivity incontinence (DOI), respectively. DO was more common in women with overt or occult SUI than women with no USI (24% and 17% vs. 6%, p=0.02) and DOI (15% and 8 % vs. 0%, p=0.004). The PVR, median peak flow rate, and median detrusor pressure at peak flow across the three groups were similar. Of the 186 women for whom a voiding mechanism could be determined, 63% voided by detrusor contraction alone and 27% voided with detrusor contraction and strain. Voiding mechanism and voiding pattern did not differ by group. 59 percent of women were found to be "obstructed" based on the nomogram and 39% were in "urinary retention" based on the NIF. Rates of obstruction and urinary retention were similar between the 3 groups. While women with overt SUI were more likely to have higher irritative and obstructive symptom subscale scores, neither score differed according to whether urodynamics revealed DO or obstruction, respectively.

Conclusion: Women with POP have significant rates of urodynamic obstruction and retention, independent of their continence status. Further, symptoms of obstruction and retention correlate poorly with urodynamic findings in women with POP.

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