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Author(s): J. Vowles, A. Wagg, J.G. Malone-Lee

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Institution City Country: Royal Free and University College Medical School, London, UK

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Title (type in CAPITAL LETTERS): **INCREMENTAL BLADDER FILLING, WITH SEQUENTIAL STRESS TESTING, AS AN IMPROVEMENT ON STATIC URODYNAMICS IN THE DIAGNOSIS OF GENUINE STRESS INCONTINENCE**

AIMS OF STUDY In standard, static, urodynamic testing, direct visualisation of urine leakage during standing and cough stress test at maximum cystometric capacity is considered to be diagnostic for ICS defined genuine stress incontinence (1). Incontinence occurs because the bladder pressure rises above the limit of urethral competence (2). Urinary symptoms are often present in women with prolapse, stress incontinence being the most common complaint. With severe degrees of uterovaginal prolapse, continence may be maintained, despite an incompetent sphincter, because urethral kinking causes obstruction of the outflow tract (3). Thus surgical repair of prolapse can reveal an incompetent continence mechanism (4). It is known that some women who describe urinary stress incontinence do not demonstrate this during the course of standard urodynamic investigation. It may be that in some cases this reflects a false negative result caused by urethral kinking related to prolapse at higher bladder capacities. This study tested the hypothesis that if prolapse masked stress incontinence at full bladder capacity in some women, a number would prove positive at lower capacities when the prolapsing force should be less.

METHODS A new test was designed, termed an "Incremental filling stress test". The bladder was filled retrogradely using a standard filling catheter. After infusion of each increment of 100 ml the catheter was removed and a standing stress test was performed. The catheter was then replaced and a further 100 ml infused. This was repeated up to 500 ml capacity. During the course of the study 292 women who described stress incontinence underwent urodynamic studies. Their mean age was 52.5 years (sd = 13.5 range 21-87). 197 of these did not show genuine stress incontinence during a standard cystometrogram. 79 of these 197 did not demonstrate detrusor instability as an explanation for their symptoms. 71 of these women agreed to undergo the incremental filling stress test. At the time of this test a careful pelvic examination for prolapse was performed using the approved ICS method (5). Statistical tests were non-parametric, using contingency tables, and Fisher's test to exam the probability that the true proportion was zero. In all cases the power of the study exceeded 80%.

RESULTS 23 (32%; 95% C.I.= 17%-52%, $p<0.05$) of this sample proved negative to stress testing throughout the incremental protocol and confirmed the urodynamic test findings. 16 (22% 95% C.I. = 8%-46%, $p<0.05$) demonstrated stress incontinence varying with bladder capacity, and with incontinence at lower capacities even though the women proved continent on stress testing at volumes higher than these. These data supported the hypothesis. 32 women (45%; 95% C.I. 29%-62%, $p<0.05$) showed stress incontinence during the incremental stress test and at all subsequent volumes up to capacity (500 ml), thus contradicting the urodynamics test findings. The identification of prolapse on examination showed no relationship to the findings of continence or not.

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CONCLUSION These data lend support to the hypothesis that varying bladder capacity will influence the ability of women with sphincter incompetence to demonstrate genuine stress incontinence. The mechanisms can only be attributed by conjecture since the physical identification of prolapse proved an unhelpful predictor of outcome. This does not preclude urethral kinking as a mechanism since it is quite possible for this to be present without it being evident on examination. A secondary finding, although of considerable significance, is evidence of the insensitivity of the standard static urodynamic study in identifying stress incontinence. The incremental test appears to be more sensitive.

REFERENCES

(1) Methods in the diagnosis of genuine stress incontinence. Obstet. Gynecol 86: 85-91.
(2) The effect of vesical volume on valsalva leak-point pressures in women with genuine stress urinary incontinence Obstet. Gynaecol. 87: 711-4.
(3) The effect of uterovaginal prolapse on urethrovesical pressure dynamics Am. J. Obstet. Gynecol. 146: 901-5, 1983.
(4) Urodynamic characteristics of women with complete posthysterectomy vaginal vault prolapse Urol. 44(3): 336-42, 1994.
(5) Vaginal Prolapse - ICS Standardisation of Terminology of Female Pelvic Organ Prolapse and Pelvic Floor Dysfunction 1994.