

**STRESS INCONTINENCE SURGERY: DOES URODYNAMICS PREDICT SURGICAL OUTCOME OR POST-OPERATIVE VOIDING DIFFICULTIES?**Hypothesis / aims of study

According to the current UK practice, urodynamics studies are routinely performed before stress urinary incontinence (SUI) surgery, for a variety of reasons including confirming diagnosis, detecting detrusor overactivity, assessment of urethral competence during filling, determination of detrusor & outlet function during voiding, measurement of residual urine, and predicting outcome. The usefulness of this investigation in routine uncomplicated patients is doubtful. We performed this study to see if Urodynamics can predict surgical outcome or post-operative voiding difficulties, and also if the required information could be obtained by non-invasive means of assessment.

Study design, materials and methods

This is a retrospective study of all the patients who underwent stress incontinence surgery at our institute between Feb 02 and Jun 05 (a 41-month period), selected from theatre database. Preoperative evaluation included presenting symptoms, physical examination, frequency volume chart, stress test, uroflowmetry with post void residual volume scan, and urodynamics. Seventy three case notes were retrieved and analysed.

Results

Mean age of patients was 56 years (range 35-82). Out of 73 patients presenting with SUI, 50 patients also had symptoms of Overactive bladder (OAB) syndrome as defined by Standardisation Sub-committee of the International Continence Society. Fifty six patients had Tension free vaginal tape (TVT) insertion, 14 rectus fascia sling, and 3 fascia lata sling insertion. There were no immediate postoperative complications, but 1 patient had delayed pelvic haematoma, which required drainage. On a mean follow up of 11 weeks, 90% (43/48) of the patients, who underwent TVT insertion, and all the patients with fascia lata or rectus fascia sling were symptom-free. Post-operative complications – 5 patients had persisting SUI, and 13 patients had voiding problems, 4 of them requiring additional surgery in the form of urethral dilatation.

Interpretation of results

## A) Evaluation of OAB syndrome

Pre-operatively, Urodynamics demonstrated the presence of Detrusor overactivity (DO) in 7 out of 73 patients, 5 of these patients had symptoms of OAB syndrome (5 of 50).

Post-operatively, out of 5 patients with both OAB symptoms and DO, 4 continued to have OAB symptoms with resolution of SUI. In the group of two patients with DO but no OAB symptoms, 1 patient remained asymptomatic, while 1 developed de-novo OAB symptoms.

Therefore out of 73 patients who underwent urodynamics, one patient who developed de-novo OAB symptoms after TVT insertion, was the only one, who benefited in the sense that preoperative counselling for the possibility of development of OAB symptoms was predictable in the light of DO on urodynamics.

## B) Prediction of voiding difficulties

Post-operatively, 13 patients had high (>150 ml) post void residual urine. On co-relating this with pre-operative findings; only 4 of 13 patients demonstrated a Detrusor under-activity with abdominal straining on voiding cystometry, while 9 of 13 who voided with a normal Detrusor function, developed voiding problems.

In 60 patients, who had no post-operative voiding problems; 46 patients had a normal Detrusor function, while 14 patients demonstrated a Detrusor under-activity with abdominal straining on urodynamics.

Only 4 of 18 (22%) patients who had Detrusor under-activity on pre-operative urodynamics developed voiding problems post-operatively. Nine of 55 (16%) patients with normal preoperative detrusor function developed voiding problems.

So post-operative voiding problems could not be predicted by pre-operative urodynamics.

## C) Patient assessment

<b>Assessment</b>		<b>Outpatient clinic</b>	<b>Urodynamics</b>
Stress incontinence	Stress test	✓	✓

Bladder capacity	F/V chart	✓	✓
	Uroflowmetry	✓	✓
OAB syndrome	History / Urodynamics	OAB	DO
Voiding study	Uroflowmetry	✓	✓
	Post void residual vol.	✓	✓
	Voiding pDet	x	✓

Frequency volume chart, stress test & uroflowmetry with post void residual volume scan provided comparable information in most patients about bladder capacity, presence of SI and voiding pattern.

Concluding message

Invasive urodynamic studies do not appear to influence the choice or predict the outcome of surgery in most patients and should be restricted to the complicated patients. Most patients can be assessed by non-invasive modified urodynamic assessment by frequency volume chart, stress test, & uroflowmetry with post void residual volume scan in the continence clinic.

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**HUMAN SUBJECTS:** This study did not need ethical approval because it is a retrospective audit and did not follow the Declaration of Helsinki - with approval by the ethics committee - in the sense that not applicable  
**Informed consent was not obtained from the patients.**