

The Role of Pre-Operative Urodynamic Testing in Stress Continent Women Undergoing Sacrocolpopexy: The Colpopexy and Urinary Reduction Efforts (CARE) Randomized Surgical Trial

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Our objective was to determine, in stress continent women undergoing sacrocolpopexy, whether urodynamics with prolapse reduction predicts postoperative stress incontinence.

322 stress-continent women with Stage II-IV prolapse underwent standardized urodynamics with water-based transducers. Five prolapse reduction methods were tested, two at each site and both performed for each subject. At sacrocolpopexy (ASC), participants were randomized to Burch colposuspension or no Burch (control). Clinicians were masked to urodynamic results. P-values were computed by two-tailed Fisher's exact test.

Preoperatively, 12 of 313 (4%) subjects demonstrated urodynamic stress incontinence (USI) *without* prolapse reduction. The order of prolapse reduction methods did not affect detection of USI with reduction, 16% with 1st method versus 22% with 2nd. Preoperative detection of USI *with* prolapse reduction at 300 ml was, in ascending order: pessary, 6% (5 of 88); hand, 16% (19 of 122); swab, 19% (32 of 168); ring forceps, 21% (21 of 98); and speculum, 30% (35 of 118).

As seen in the table below, the Benefit column estimates the decrease in postoperative stress incontinence when the prolapse reduction method is used preoperatively. In evaluating test characteristics of the prolapse reduction methods, the highest benefit was seen with the swab technique, with high positive predictive value (PPV) in controls, followed by low PPV in the Burch group. In addition, incontinence was always lower after negative urodynamic testing.

Prolapse Reduction Method	Stress Leakage at UDS	Control, N (%) Incontinent after ASC Only	Burch, N (%) Incontinent after ASC and Burch	Benefit
Pessary	(-)	19 of 46 (41%)	8 of 37 (22%)	19%
	(+)	1 of 2 (50%)	1 of 3 (33%)	17%
Hand	(-)	18 of 53 (34%)	13 of 50 (26%)	8%
	(+)	4 of 8 (50%)	5 of 11 (45%)	5%
Swab	(-)	22 of 63 (35%)	12 of 63 (19%)	16%
	(+)	11 of 14 (79%)	5 of 18 (28%)	50%
Forceps	(-)	20 of 41 (49%)	5 of 36 (14%)	35%
	(+)	4 of 8 (50%)	3 of 13 (23%)	27%
Speculum	(-)	17 of 42 (40%)	7 of 41 (17%)	23%
	(+)	11 of 20 (55%)	8 of 15 (53%)	2%

In the control group, the swab technique of prolapse reduction had the highest positive predictive value for postoperative SUI, and the highest benefit between Burch and control groups.

In stress continent women with prolapse undergoing sacrocolpopexy, the addition of Burch colposuspension reduced postoperative stress incontinence symptoms whether or not preoperative urodynamic stress incontinence was diagnosed with reduction testing. However, preoperative USI with prolapse reduction (regardless of method) was associated with a higher likelihood of postoperative stress incontinence, compared to subjects who did not leak with prolapse reduction during urodynamics.