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IS THE TRANSOBTURATOR SUBURETHRAL SLING AN EFFECTIVE TREATMENT FOR INTRINSIC SPHINCTER DEFICIENCY?

Hypothesis / aims of study

To compare outcomes of transobturator suburethral slings for the treatment of intrinsic sphincter deficiency with urethral hypermobility (ISD) compared to stress urinary incontinence with urethral hypermobility (SUI).

Study design, materials and methods

This is a retrospective case comparison of 70 women, 31 who underwent treatment for ISD and 39 for SUI from March of 2003 to February of 2004 with the Monarc™ transobturator sling (American Medical Systems, Minnetonka, MN, USA). Both ISD and SUI were diagnosed with multi-channel urodynamics (UDS). ISD was defined as a maximum urethral closure pressure (MUCP) of $\leq$ 20 cm/H_20 or a valsalva leak point pressure at bladder capacity (VLPP) $\leq$ 60 cm/H_20. Urethral hypermobility was defined as a Q-tip angle > 30 degrees. Concomitant procedures were performed as indicated.

Outcome measures included patients subjective reports of symptoms of stress incontinence and overactive bladder (OAB) following the procedure, as well as results of an empty supine stress test (ESST) following the procedure, and whether bulking materials were required in the post-operative period. Outcome measures were recorded at 6 weeks post-operation and at the last visit.

Results

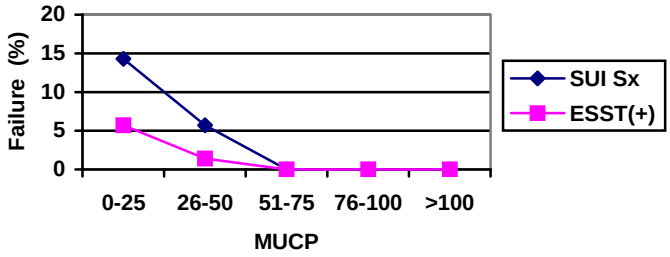
The SUI patients had an average age of 55.7 and a mean parity of 2.6. The ISD patients had an average age of 67.6 and a mean parity of 2.8. Concomitant procedures included vault suspension (33), cystocele repair (29), enterocele repair (32), rectocele repair (45), Kelly plication (10), hysterectomy (18), Lefort colpocleisis (8). Average follow-up was 3.6 months for the SUI patients and 4.7 months for the ISD patients. There were no operative complications or post-operative mesh erosions or infections. Outcome measures are as follows:

Pre-op Dx	UDS (avg.)		Post-op (6wks)			Post-op (Last)			Post-op Bulking
	MUCP	VLPP	SUI Sx	OAB Sx	ESST(+)	SUI Sx	OAB Sx	ESST(+)	
ISD (n=31)	34.6	32.0	11 (35.5%)	7 (22.6%)	5 (16.1%)	12 (38.7%)	5 (16.1%)	5 (16.1%)	8 (25.8%)
SUI (n=39)	53.8	82.7	2 (5.0%)	5 (12.8%)	0	2 (5.0%)	4 (10.3%)	0	0
p-Value			0.0017	0.2819	0.0327	0.0005	0.7113	0.0327	0.0028

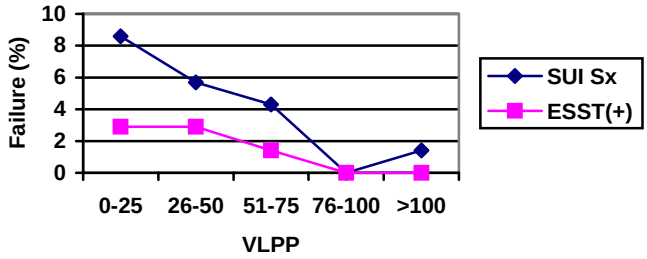
SUI Sx = Subjective complaint of SUI post-op
OAB Sx= Subjective complaint of OAB post-op
ESST = Positive empty supine stress test post-op
Post-op Bulking = Need for bulking agent post-op

MUCP and VLPP values were then divided into 5 groups (lowest to highest pressures) and the failure rate, as measured by persistent post-op SUI symptoms or a positive ESST, in each group was calculated. Lower MUCP values had significantly higher failure rates for both persistent SUI symptoms ($p<0.0001$) and a positive ESST ($p=0.0115$). Lower VLPP values also had significantly higher failure rates for both persistent SUI symptoms ($p<0.0001$) and a positive ESST ($p=0.0295$). The data is displayed graphically below:

MUCP vs. Failure Rate



VLPP vs. Failure Rate



Interpretation of results

The transobturator sling is extremely safe, with no operative complications in this series of 70 patients. It was also remarkably successful for the treatment of SUI (95% success rate). However, the success rate for ISD treatment was lower as judged by persistent post-op SUI symptoms (38.7%, p=0.0005) and positive ESST post-op (16.1%, p=0.0327). Eight (25.8%) ISD patients also required post-op bulking agents, where as no SUI patients required bulking (p=0.0028). Low leak point pressures and low urethral closure pressures are predictive of poor outcomes.

Concluding message

The transobturator suburethral sling is an extremely safe and effective procedure for the treatment of stress incontinence. However, possibly due to the less occlusive angle of the sling, it does not appear to be as successful for the treatment of intrinsic sphincter deficiency with urethral hypermobility.