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PREDICTORS FOR SUCCESSFUL MID-URETHRAL SLING SURGERY IN WOMEN WITH STRESS URINARY INCONTINENCE

Hypothesis / aims of study

Mid-urethral slings (MUS) have become the gold standard for the treatment of stress urinary incontinence (SUI). To identify the potential risk factors affecting the outcomes among patients who underwent MUS surgery for SUI

Study design, materials and methods

We reviewed a prospectively maintained, Institutional Review Board-approved database of the 276 patients treated with MUS surgery for SUI from 2010 to 2014. All patients had physical examination and urodynamic study findings. Cure of SUI was defined as a negative result on the stress test and no subjective complaint of urine leakage. Treatment failure of SUI was defined as any urine leakage on both objective and subjective parameters. The preoperative parameters were analyzed and compared between the cure group and fail group.

Results

The overall success rate of SUI after MUS surgery was 84.8%. 42 patients with persistent SUI were grouped as the fail group although they had improvement of SUI symptoms post-operatively. There were no significant differences in age, BMI, neurogenic etiology, urinary incontinence type, urodynamic findings, Qtip, concomitant prolapse repair except for maximal detrusor pressure (Pdetmax) score and rate of intrinsic sphincter dysfunction (ISD). The fail group showed a low Pdetmax score (28.9 vs. 35.3; $p = 0.012$) and high rate of ISD than cure group (47.6% vs. 16.2%; $p < 0.001$). In multivariate analysis, Pdetmax, Valsalva leak point pressure (VLPP) and ISD proved to be a potential risk factor.

Interpretation of results

Comparative analysis revealed that urinary incontinence type, concomitant prolapse repair were not related to the postoperative outcomes. However, VLPP and ISD had a statistically influence on the success rate of SUI.

Concluding message

MUS is an effective treatment for stress urinary incontinence. Nonetheless, preoperative ISD should be considered as a predictor for successful MUS surgery

Table 1. Patient characteristics

Parameter	ALL (n=276)	Cured patients (n=234)	Failed patients (n=42)	P-value
Number of patients (%)	276	234 (84.8%)	42 (15.2%)	
Age (year), mean ± SD	58.5 ± 10.4	58.2 ± 10.3	60.5 ± 10.9	0.192 ^a
Body mass index, mean ± SD	25.1 ± 3.7	25.2 ± 3.7	24.5 ± 3.7	0.305 ^a
Neurogenic etiology	36 (13%)	29 (12.8%)	7 (16.7%)	0.457 ^b
UI type				0.594 ^b
Stress UI	92 (33.3%)	80 (34.2%)	12 (28.6%)	
Mixed UI	184 (66.7%)	154 (65.8)	30 (71.4%)	
Detrusor overactivity	57 (20.7%)	49 (20.9%)	8 (19%)	0.840 ^b
Pdetmax	34.3 ± 22.5	35.3 ± 23.8	28.9 ± 12.9	0.012 ^a
VLPP	72.7 ± 26.5	73.5 ± 25.5	68.1 ± 31.4	0.220 ^a
MUCP	57.8 ± 29.8	58.4 ± 31.3	54.3 ± 18.8	0.416 ^a
ISD	58 (21%)	38 (16.2%)	20 (47.6%)	<0.000 ^b
Operation				0.411 ^b
MUS only	218 (79%)	187 (79.9%)	31 (73.8%)	
MUS with POP repair	58 (21%)	47 (20.1%)	11 (26.2%)	

POP: pelvic organ prolapse, ISD: Intrinsic sphincter dysfunction ; VLPP <60 or MUCP < 20 ^aIndependent T-test ^b Chi-square test ^cFisher test

Table 2. Univariable and multivariable logistic regression analysis of risk factor

Predictor	Univariable		Multivariable	
	P value	OR (95% CI)	P value	OR (95% CI)
Age (year)	0.192	1.021 (0.989 - 1.054)	0.490	1.015 (0.973 - 1.059)
Body mass index	0.299	0.946 (0.853 - 1.050)	0.142	0.921 (0.826 - 1.028)
UI type	0.478	1.299 (0.631 - 2.673)	0.695	1.176 (0.523 - 2.646)
Detrusor overactivity	0.780	0.888 (0.387 - 2.041)	0.727	0.846 (0.332 - 2.156)
Pdetmax	0.087	0.982 (0.961 - 1.003)	0.038	0.967 (0.938 - 0.998)
VLPP	0.220	0.992 (0.979 - 1.005)	0.002	1.029 (1.011 - 1.048)
MUCP	0.410	0.994 (0.981 - 1.008)	0.875	1.001 (0.987 - 1.015)
ISD	<0.000	4.689 (2.333 - 9.425)	<0.000	19.042 (5.770 - 62.820)

OR = odd ratio; CI = confidence interval

Disclosures

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