

THERAPEUTIC EFFICACY OF A NEW PROCEDURE COMBINED WITH SUBURETHRAL POLYPROPYLENE MESH AND CARDIOVASCULAR PATCH FOR MALE URINARY INCONTINENCE

Hypothesis / aims of study

Stress urinary incontinence (SUI) in men is a complication secondary prostatectomy or resulting from neurological lesions associated with spinal cord injury (SCI) or pelvic fracture. This study investigated our experiences in male suburethral sling in the past 10 year.

Study design, materials and methods

Patients who presented with stress urinary incontinence (SUI) and diagnosed as ISD due to post-prostatectomy (PPI) on not (non-PPI) who received suburethral sling procedure using polypropylene mesh and cardiovascular patch were retrospectively included. Urodynamic study was performed before and after operation. Global response assessment (GRA) and SUI grading were used for surgical outcome evaluation. The revision rate and infection rate were also evaluated.

Results

A total 31 patients were enrolled in this study with mean age 59.5±18.9 years (range 14-85) and the mean follow up periods 36.9 ± 29.4 months (range 2-131). Fourteen patients were non-PPI group (age 43.0±14.5 years) and 17 were PPI group (age 73.1±8.42 years). Of the 31 patients, 8 (25.8%) had detrusor overactivity, 10 (32.3%) had detrusor underactivity, 10 (32.3%) had hypersensitive bladder, and 3 (9.7%) had normal detrusor function. Preoperatively, all patients rated SUI as a "moderate to severe problem" according to the SUI-grade with mean point of 2.32±0.48 before operation and 0.48±0.57 after operation. GRA showed well satisfaction with a mean point of 2.35±0.71. After sling procedure 4 patients (13%) reported mild improvement, 12 (38.7%) a moderate improvement, while 15 (48.4%) an excellent improvement. Six (19.4%) patients received sling removal due to infection, including 5 in non-PPI group (35.7%) and 1 (5.9%) in PPI group.

Table 1. Patient demographics and treatment outcome

	PPI (N=17)	Non-PPI (N=14)	P value
Causes of SUI	Transurethral resection of prostate (n= 5) Radical prostatectomy (n=12)	Pelvic fracture (n=3) Myelomeningocele (n=4) Spinal cord injury (n=3) Rectal cancer (n=4)	
Treatment outcome			
Moderate/excellent satisfaction	17 (100%)	10 (71.4%)	<0.05
Simple revision	7 (41.2%)	2 (14.3%)	<0.05
Repeat procedure	2 (11.8%)	2 (14.3%)	
Mesh infection	1 (5.9%)	5 (35.7%)	<0.05

Table 2. Measured parameters between patients with postprostatectomy incontinence and non- postprostatectomy incontinence

	Non-PPI (n= 14)	PPI (n=17)	P value
Age	43.1±14.5	73.1±8.42	0.000
BMI	24.4±5.61	25.8±2.38	0.364
Operation time (min)	45.4±36.8	30.0±20.1	0.151
Preop.LPP (cmH ₂ O)	56.9±39.6	60.6±28.1	0.818
RLPP (cmH ₂ O)	60.6±10.1	43.6±16.4	0.013
Preop. CBC (mL)	310±169	248±98.5	0.220
Preop. Pdet.Qmax (cmH ₂ O)	20.2±15.8	11.1±9.18	0.059
Qmax	15.8±6.01	14.2±5.46	0.537
Postop	10.6±5.53	10.5±5.91	0.963
SUI grade			
Preop	2.29±0.47	2.35±0.49	0.702
Postop	0.50±0.65	0.47±0.51	0.889
GRA	2.00±0.78	2.65±0.49	0.009

Interpretation of results

In this study, the technique of bone-anchored sling was used. In addition to the polypropylene mesh, we used suburethral pads by a cardiovascular patch to increase urethral resistance and also for adjustment the retrograde LPP. The success rate of 77.4% was satisfactory although 7 of 31 patients received repeat procedure. The success rate was similar with previous studies but the higher infection rate (19.4%) in our study was noted, especially in patients with non-PPI. This study reveals that, for male high

grade SUI, a suburethral mesh combined with cardiovascular patch can increase urethral resistance and effectively improve SUI without compromising voiding efficiency.

Concluding message

Male suburethral sling procedure using polypropylene mesh and cardiovascular patch is an efficacious, safe and inexpensive surgical procedure for PPI. In neurological incontinence, however, higher infection rate in non-PPI patients should be carefully managed.

Disclosures

Funding: none **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Research Ethics Committee, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation **Helsinki:** Yes **Informed Consent:** Yes