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INTRODUCTION

There was little report on the recovery of voiding efficiency (VE) after bladder outlet surgery in patients with detrusor acontractile (DA). Therefore, we aim to identify the predictive factors of recovery after prostate surgery in male patients with DA.

Table 1. The changes of measured parameters at baseline and at follow-up in the two groups

Recovery group (N=29)	Baseline	Follow-up	P-value
Qmax(ml/s)	2.52±3.31	11.2±4.89	<0.001*
Volume(ml)	57.9±78.7	260±169	<0.001*
PVR(ml)	409±262	39.7±52.0	<0.001*
VE(%)	18.5±28.0	85.6±16.7	<0.001*
Non-recovery group (N=19)	Baseline	Follow-up	P-value
Qmax(ml/s)	0.71±1.21	1.65±2.45	0.177
Volume (ml)	18.7±30.6	24.4±36.3	0.619
PVR(ml)	366±170	259±154	0.046*
VE(%)	7.66±12.8	14.2±24.9	0.027*

Table 2. Baseline demographics and urodynamic parameters in patients with detrusor underactivity

	Recovery (N=29)	Non-recovery (N=19)	p-value	p-value Univariate	p-value Multivariate
Age (years)	72.5±10.3	77.±8.92	0.11		
TPV (ml)	28.8±10.2	24.0±6.56	0.18		
FSF (ml)	185±87.7	232±162	0.256		
FS (ml)	291±100	301±178	0.819		
US (ml)	349±127	328±186	0.666		
Compliance	67.1±83.8	58.0±68.8	0.698		
Compliance	66.7±95.6	55.0±82.3	0.665		
Pdet (cmH ₂ O)	10.2±9.86	3.58±6.29	0.007*	0.029*	0.064
Qmax (ml/s)	2.52±3.31	0.63±1.17	0.008*	0.034*	0.113
Volume (ml)	57.9±78.7	16.7±29.4	0.014*	0.057	0.904
PVR (ml)	409±262	375±170	0.618		
Capacity (ml)	467±259	391±153	0.251		
VE(%)	18.5±27.9	6.85±12.3	0.058	0.117	0.110
DM	14	8	0.675		
Hypertension	24	11	0.058		
AUR	16	7	0.214		
Chronic inflammation	11	8	0.772		
Parkinson disease	1	1	1.000		
Dementia	6	2	0.451		
CKD	8	6	0.766		
CVA	7	5	1.000		
CAD	9	4	0.447		
COPD	1	5	0.03*		

METHODS

We retrospectively reviewed the male patients diagnosed as DA and received transurethral prostate surgery in Hualien Tzu Chi hospital over the past two decades. Urodynamic studies were performed before and after the operation. We defined bladder function recovery as having a VE > 50% after the bladder outlet surgery. Univariate and multivariate logistic regression analyses were performed to determine the predictors of patients with satisfactory therapeutic outcomes.

RESULTS

At the most recent follow up, 29 (60.4%) patients match the criteria of VE recovery, whereas the other 19 (39.6%) did not reach a successful outcome. Among these patients, 21 (72.4%) of them were recovered within one month; only one of them was recovered after more than 6 months. After surgery, the patients' Qmax, voided volume, PVR and VE all showed improvement in each group (Table 1). Especially in the recovery group, all the postoperative parameters showed significantly improved compared to the baseline (p=0.000). In the non-recovery group, only the PVR and VE had significant improvement. In comparison with the baseline urodynamic parameters between the two groups, we found that patients with a baseline higher detrusor pressure (Pdet), greater voided volume and higher Qmax recovered better (Table 2). In logistic regression analysis, only Pdet and Qmax seem to be a predictor of successful outcome.

CONCLUSIONS

60% of male patients with urodynamic DA and urinary retention can have voiding function recovery after transurethral surgery. Prostate surgery reduces the bladder outlet resistance and provides an easier voiding by the aid of increased abdominal pressure. A higher baseline Pdet, voided volume and Qmax are predictive of successful treatment outcome after transurethral prostate surgery. The detrusor function might not be completely lost and has a better chance to regain efficient detrusor contractility after relief of BOO.