

TURP/KTPLAP IS AN EFFECTIVE TREATMENT FOR MEN WITH DETRUSOR UNDERACTIVITY

Hypothesis / aims of study

The goal of bladder outlet reduction surgery is to improve lower urinary tract symptoms (LUTS) in men with prostatic obstruction (PO). Decreased bladder function in the form of detrusor underactivity (DU) can contribute to impaired bladder emptying and is diagnosed through pressure-flow studies. In many cases DU is co-existent with PO. Men with DU represent an underreported segment of a population who undergo bladder outlet reduction surgery. In this study, we report outcomes of men with DU treated with KTP laser ablation (KTPLAP) or transurethral resection of the prostate (TURP).

Study design, materials and methods

This was a retrospective study of consecutive patients with urodynamic finding of DU who underwent KTPLAP or TURP. DU is defined as defined as detrusor acontractility, detrusor areflexia, a detrusor contraction of insufficient duration to empty the bladder, or bladder contractility index (BCI of <100). Bladder outlet obstruction (BOO) is defined by a BOOi > 40. Men with DU (n=87) were compared with a matched cohort having undergone bladder outlet reduction surgery due to urodynamically confirmed PO without DU (control, n= 37). A subset analysis was then performed of patients with DU comparing those with (n=31) and without (n=56) concomitant BOO. Patients were placed in the DU only group if there was: 1) no objective evidence of BOO on UDS, 2) very low bladder compliance in patients that we could not document BOO on UDS, or 3) presence of some spontaneous voiding during CIC regimen. Those with a clinical suspicion of future improvement after TURP/KTPLAP were offered the procedure while those who did not fit any of these criteria were excluded. All subjects had pre-operative uroflow (Qmax), post-void residual volume (PVR) measurements, videourodynamics, and cystoscopy. Post-operative Qmax, PVR, need for clean intermittent catheterization (CIC), and Patient Global Impression of Improvement (PGII) score were obtained. Success was defined by a PGII score of 1-3 whereas failure (no change or worsening of symptoms) was scored 4-7. All available data parameters were compared using a two-sided t-test.

Results

124 men age 29-88 (mean = 69.5) were included in this study. There was no statistical difference in age (p=0.42) or pre-op PVR (p=0.54) but there was a significantly higher pre-op Qmax in the control group (p=0.001). Both BCI and BOOi varied significantly and inversely between the two groups (both p<0.001). Postoperatively, there was no significant change in Qmax or PVR in patients with or without DU undergoing bladder outlet reduction surgery (p=0.987 and p=0.385, respectively) (Table 1). Pre-op mean Qmax and PVR for DU patients were 4.1ml/s and 455ml, but improved to 14.8ml/s and 108ml post operatively. In controls, the pre-op Qmax and PVR were 8.2ml/s and 507ml improving to 19.4ml/s and 74ml. On subset analysis of the cohort of patients with DU, there was no significant difference in the changes in Qmax or PVR between those with DU alone vs. DU+BOO (p=0.83 and p=0.58, respectively). Subjective improvement was equally achieved by those with DU (67/86 pts, 78%) and without DU (26/34 pts, 76%), although patients with DU+BOO appeared to gain the most improvement of all patient cohorts (26/30 pts, 87%) (Table 2). Out of 87 total pts, and 42 with DU patients who performed CIC, only 17 required CIC after surgery (60% relative reduction). Only 1/14 pts with BOO only required CIC after surgery (93% relative reduction). Among patients with DU, there was no difference in need for CIC if they had concomitant BOO.

Table 1:

Pre vs. Post-op change	All Patients [n=124]			Patients with Detrusor Underactivity [n=87]			
	All with DU Mean [n=87]	DU (STD)	BOO w/o DU Mean (STD) [n=37]	p-value	Only DU Mean (STD) [n=56]	DU+BOO mean (STD) [n=31]	p-value
QMax (ml/s)	+11 (11)		+11 (9)	0.99	+11 (10)	+11 (7)	0.83
PVR (ml)	-336 (412)		-411 (446)	0.39	-354 (375)	-304 (383)	0.58

Table 2:

Post-op improvement	All Patients [n=120]		Patients with Detrusor Underactivity [n=86]	
	All with DU [n=86]	BOO w/o DU [n=34]	DU alone [n=56]	DU+BOO [n=30]
PGII Success (%)	67/86 (78%)	26/34 (76%)	41/56 (73%)	26/30 (87%)
Relative Need for CIC (%)	-60%	-93%	-60%	-58%

Interpretation of results

The data presented above fail to reject the null hypothesis that outcomes do not differ between patients with and without DU undergoing bladder outlet reduction surgery. Pre-operatively, patients had significantly disparate BOOi and BCI values qualifying their placement into their respective groups, but post operatively, clinically relevant parameters were not significantly different. This finding spans both objective and subjective, validated instruments.

Concluding message

TURP or KTPLAP is a viable treatment option for men with detrusor underactivity regardless of whether bladder outlet obstruction is confirmed by standard urodynamic techniques, provided that there is evidence of sustained detrusor contraction.

Disclosures

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