

SINGLE INSTITUTION EXPERIENCE OF OVER 100 CASES OF AUGMENTATION ENTEROCYSTOPLASTY IN THE PATIENTS WITH END-STAGE BLADDER DISEASES

Hypothesis / aims of study

The patients with irreversible contracted bladder or lower compliance due to different disease might be clinically categorized to end stage bladder diseases (ESBD). Conventionally, augmentation enterocystoplasty (AE) is indicated in ESBD patients and could effectively improve clinical symptoms. However, the outcome and complication between different etiologies had not been reported and compared. We reported the long-term results of currently largest series of patients with ESBD and received AE.

Study design, materials and methods

The patients with irreversible ESBD and had received AE in Hualien Tzu Chi General hospital were retrospectively reviewed. Voiding urodynamic studies had been investigated in all patients before the AE and at the follow-up. The patients were classified according to the etiologies of ESBD including neurogenic voiding dysfunction (NVD, such as spinal cord injury (SCI) and meningomyelocele) and inflammatory bladder disease (IBD, such as interstitial cystitis, ketamine cystitis, tuberculosis cystitis and eosinophilic cystitis), post pelvic cancer surgery and the others etiologies. The complications of the operation, active lower urinary tract problems and patients self reported satisfaction grading with a 4 point scale (0: not satisfied, 1: mild satisfied, 2: moderate satisfied, 4: excellent satisfied) at follow-up were recorded. The episodes of urinary tract infection (UTI) were also recorded.

Results

A total 102 patients with mean age of 39.4±18.7 years old had been investigated at a mean 78 months follow-up. The cystometric bladder capacity (CBC), compliance, self-voided volume and post-void residual urine in overall patients had significantly increased from before operation to the follow-up (Table 1). At follow-up, fifty-six patients had spontaneous voiding without any urethral catheterization, forty-three patients had to perform clean intermittent catheterization (CIC), and 3 patients chose to keep an indwelling urethral catheter. Twenty-nine patients presented with vesicoureteral reflux at baseline, 23 patients had received ureter reimplantation, and only 2 patient still had VUR at follow-up. All the patients with NVD (n=45), IBD (n=35), post pelvic cancer surgery (n=15) and the others etiology (n=7) could significantly improve CBC and compliance at follow up (Table 1). CIC had to be performed in 33 (73.3%) patients with NVD, six patients (40%) with post pelvic cancer surgery, four (57.1%) patients with the others etiologies and only 2 patients (6%) with IBD ($p<0.001$). Fifty-four (52.7%) patients had moderate to excellent satisfaction, and the satisfaction rate between different groups did not have significant difference ($p=0.362$, Table 1). The most common reason of dissatisfaction was needing CIC (41.7%), following by urinary incontinence (25.0%) and recurrent UTI (16.7%). Most patients (65.6%) had UTI episodes frequency less than 1 times per year, 30% patients had 1 to 3 times UTI per year and 4.3 % patients had UTI more than 3 times per year. The UTI frequency between different etiologies is not significant (Table1), but the patients who had to CIC or indwelling urethral catheter had a higher rate or recurrent UTI. ($p=0.039$) Bladder stones were found in 5 patients and two patients with IBD developed entero-vesical anastomosis stricture at follow-up.

Interpretation of results

AE could significantly improve bladder capacity and compliance in the ESBD patients with different etiologies in a long-term follow-up. The satisfaction and complication rate also did not have difference between the patients with different etiologies. CIC had to be performed in most patients with NVD and this is the major reason of dissatisfaction. Recurrent UTI is a common complication and the patients had to perform CIC or indwelling urethral catheter should beware of recurrent UTI.

Concluding message

AE for the patients with ESBD is a safe and effective procedure to improve bladder capacity and compliance. The most common complication is UTI, and the patients should to receive long-term regular follow-up in urology clinic.

Table 1. Baseline and follow-up results in the ESD patients received AE

		Overall (N=102)	NVD (N=45)	IBD (N=35)	Post cancer (N=15)	pelvic surgery	Others (N=7)
CBC (mL)	baseline	107.4±78.5	117.3±57.6	54.5±33.7	173.4±124.8		190.4±66.6*
	follow-up	424.5±132.7*	499.4±91.2*	324.4±77.4*	384.9±148.5*		541.2±204.3
voided volume (mL)	baseline	55.8±61.8	44.8±35.0	44.5±32.8	114.9±129.1		66.4±47.4
	follow-up	170.3±497.9*	113.4±172.0*	225.6±137.2*	226.2±176.1		149.2±173.5
PVR (mL)	baseline	52.3±64.9	72.9±64.3	9.4±19.5	60.0±81.13		134.2±55.0
	follow-up	227.4±232.8*	431.2±194.6*	103.8±119.2*	145.4±142.5		442.3±307.0
Compliance mL/cmH ₂ O	baseline	9.6±39.0	7.2±4.9	13.7±22.1	7.4±6.9		10.2±4.8
	follow-up	56.3±61.8*	63.3±36.9*	53.6±43.9*	43.0±35.0*		50.0±32.1*
Need to CIC		44.1%	73.3%	6%	40%		57.1%
moderate to excellent satisfaction rate		52.7%	52.4%	60.6%	46.2%		28%
UTI > 1 time/year		34.4%	33.3%	36.4%	38.5%		28%%

* significantly difference at follow-up

Disclosures

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