



Functional outcomes of ileal orthotopic neobladder : evaluated by bladder diary

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Purpose

- ✓ The aim of this study was to evaluate changes of bladder capacity and urinary functional outcomes of patients undergoing ileal orthotopic neobladder(NB) reconstruction on the time using a bladder diary which is simple but very useful tool.

Materials and Methods

- ✓ Retrospectively reviewed medical records of 136 patients who underwent ileal orthotopic NB from January 2016 to December 2017 in our hospital.
- ✓ Excluded records of patients whose
 - increased residual urine volume(>50ml)
 - suffered from continuous incontinence caused by vaginal- neobladder fistula
- ✓ Therefore, we included uroflowmetries and a total of 254 bladder diaries of 110 patients in analysis.
- ✓ The time elapsed of the postoperative period was grouped at 3-month intervals to obtain the mean or percentage of the given variables.
- ✓ Results were analyzed with IBM SPSS 22.0

Results

- ✓ 24 hr and nocturnal urine volume and maximal flow rate didn't change with time elapsed of postoperative period statistically.
- ✓ 24 hr frequency (F=4.053, p=.001) including daytime frequency (F=3.409, p=.005) and nocturia (F=2.374, p=.04) showed a statistical difference and decreased with time after surgery.
- ✓ Maximum voided volume
 - reached about 350ml similar to the normal bladder volume within 3months from approximately 200ml at the initial stage
 - showed a significant negative correlation with 24 hr frequency (r=-.419, p<.01) including daytime frequency (r=-.373, p<.01) and nocturia (r=-.261, p<.01)
- ✓ Both daytime and nocturnal incontinence significantly decreased with time. The incidence of daytime incontinence was 30.8% and the incidence of nocturnal incontinence was 69.2% between 10 and 12 months after surgery. This showed that nocturnal incontinence still had high incidence until that time.

Table1. Changes in functional outcomes evaluated by bladder diary & uroflowmetry (n=254)

	1~3mth (n=53)	4~6mth (n=58)	7~9mth (n=56)	10~12mth (n=52)	13~15mth (n=22)	16~18mth (n=13)	F	P-value
	M±SD or n (%)							
Age	62.98±10.91	64.17±10.17	64.0±8.90	63.81±9.44	63.05±7.93	66.15±6.78	.283	NS
24hr urine volume (ml)	2181.75±493.38	2017.09±663.86	2107.32±509.75	2113.62±496.86	1969.45±404.22	2078.85±632.65	.763	NS
Nocturnal urine volume (ml)	703.43±242.36	648.36±240.73	702.98±250.78	723.83±262.83	650.45±232.80	611.77±219.39	.949	NS
NPI(%)	32.22±9.37	32.56±10.14	33.81±9.41	33.79±9.70	32.32±9.19	29.67±8.50	.570	NS
Maximum voided volume (ml)	344.34±97.77	388.28±110.36	409.29±111.43	382.12±99.53	407.27±117.76	389.23±78.47	2.398	0.038
24hr frequency	9.92±2.50	8.21±2.43	8.36±2.93	8.33±2.93	7.55±2.02	7.85±2.27	4.053	0.001
Daytime frequency	7.96±2.27	6.69±1.91	6.66±2.39	6.60±2.30	6.27±1.64	6.62±2.14	3.409	0.005
Nocturia	1.96±0.92	1.52±0.90	1.70±1.17	1.85±1.33	1.27±0.94	1.23±0.73	2.374	0.04
Maximal flow rate (ml/s)	17.86±10.10	16.24±8.99	15.96±7.72	16.52±11.50	17.14±14.36	20.33±13.75	.474	NS

NS: not significant NPI : nocturnal polyuria index

Table2. Correlations between postoperative periods and urinary functional variables (n=254)

	1	2	3	4	5	6	7	8
1 24hr urine volume	1							
2 Nocturnal urine volume	.601**	1						
3 24hr frequency	.317**	.137*	1					
4 Daytime frequency	.283**	-.068	.936**	1				
5 Nocturia	.233**	.506**	.597**	.305**	1			
6 Maximum voided volume	-.394**	.241**	-.419**	-.373**	-.261**	1		
7 Maximal flow rate	.228**	.149*	-.047	-.052	-.024	.211**	1	
8 post OP months	-.059	-.019	-.212**	-.190**	-.125*	.116	.031	1

*p<.05 **p<.01

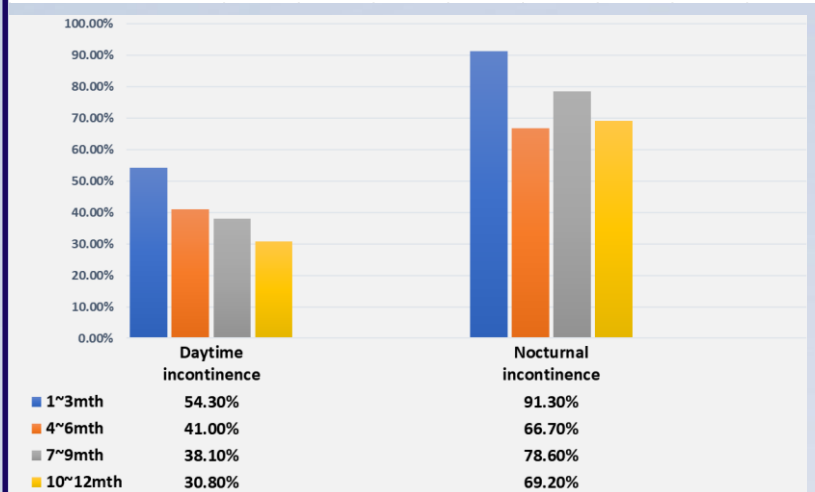


Figure 1. Incidence rate of daytime and nocturnal incontinence

Concluding Massage

- ✓ We found that the maximum voided volume was reached nearly normal bladder volume within 3 months after surgery. Therefore, healthcare providers should help patients with NB correctly acquire new voiding patterns and identify problems early through bladder diary at the earliest.
- ✓ Bladder diary is a very useful tool to evaluate functional outcomes after NB reconstruction without invasion or complexity.

Reference

1) Ong K et al. Orthotopic Bladder Substitution (Neobladder) Part I: Indications, Patient Selection, Preoperative Education and Counseling. J Wound Ostomy Continence Nurs. 2013;40(1):73-82.

Disclosure

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