

## MODIFIED TRANSURETHRAL INCISION FOR WOMEN WITH PRIMARY BLADDER OUTLET OBSTRUCTION

### Hypothesis / aims of study

The aim of this study is to evaluate the clinical outcomes of modified transurethral bladder neck incision (MTBNI) for women with primary bladder outlet obstruction (PBOO).

### Study design, materials and methods

53 women with lower urinary tract symptoms or urinary retention were diagnosed as PBOO by urodynamics and recruited in our study. The diagnostic criteria included a maximum flow rate  $\leq 12$  ml/s, maximum detrusor pressure  $\geq 20$  cm H<sub>2</sub>O and silent sphincter on electromyography [1]. MTBNI was performed for all patients with a Wolf 24F resectoscope. After measure the length of urethra, marked the distal position of incision which was 2.5 cm apart from external urethral orifice. Incisions were made at the 5-, and 7-o'clock position of bladder neck extending proximally to the ureteral orifice and distally to the marked position. Thereafter, the bladder neck tissue was excised between 5- and 7- o'clock to make proximal urethra was even with vesical triangle. A 20F Foley catheter was inserted after the operation for 72 hours. The uroflowmetry, post-void residual urine volume, International Prostate Symptom Score, and quality of life scores were assessed before and 3,12,36 and 60 months after the operation. The values were presented as the mean  $\pm$  standard deviation. Differences between baseline and post-operation was compared by Wilcoxon signed rank test. All reported *P*-values were two-sided, and *P*<0.05 was considered statistically significant.

### Results

The mean age of the 53 women was  $52 \pm 14$  years (range 35 - 72) and the duration of symptom presentation before the operation was  $23 \pm 18$  (range 7–84) months. Of them, 17 (32%) presented urinary retention. Follow-up data were available for 53 (100 %), 53 (100 %), 46 (86.8 %) and 31 (58.5 %) of the 53 patients at 3, 12, 36 and 60 months after the operation respectively. During the 5-year follow-up period, the International Prostate Symptom Scores decreased from  $21.9 \pm 5$  to  $7.1 \pm 4.5$ , so did the quality of life scores. The maximal flow rate was increased whereas the post-void residual urine volume was decreased significantly (Table 1). Additionally, two patients underwent additional operation at 1 year and 2 years after original operation respectively and only 4 patients presented mild stress urinary incontinence which was cured by pelvic floor muscle training.

### Interpretation of results

The reported prevalence of PBOO is about 39% in women [2]. Although  $\alpha$ -blocker is the first-line treatment for PBOO, the response rate in women is only 50% [3]. Transurethral incision of bladder neck is a treatment option for those women refractory to  $\alpha$ -blocker. Unfortunately, inadequate incision and the complication of incontinence bother both surgeons and patients. The classic incisions at 5-, and 7-o'clock position are made from just inside the vesical neck to the proximal one third of the urethra. However, we found that the length of urethra varied from 3 to 5.5 cm in women after measuring female urethra. The classic incisions are not suitable for all the patients. To meet the clinical need, we modified the incisions. Based on our experience, it can avoid postoperative urinary incontinence to reserve 2.5 cm distal urethra. Moreover, it can improve the lower urinary tract symptoms more effectively to extend incisions proximally to the ureteral orifice. The important limitation of our study is lack of control, which will be solved in our future study.

### Concluding message

MTBNI is an safe and effective therapy for female patients with PBOO.

**Table 1. IPSS, QOL score, maximal flow rate and PVR urine volume at baseline and post-operation**

Variable	Baseline	Post-operation			
		3 months	12 months	36 months	60 months
Patients(n)	53	53	53	46	31
IPSS	$21.9 \pm 5$	$6.7 \pm 3.8^*$	$6.1 \pm 3.1^*$	$7.3 \pm 4.2^*$	$7.1 \pm 4.5^*$
QOL	$4.4 \pm 1.1$	$1.8 \pm 0.9^*$	$1.7 \pm 0.8^*$	$2 \pm 1.2^*$	$2.2 \pm 1.4^*$
Maximal flow rate (mL/s)	$6.8 \pm 3.3$	$23.1 \pm 4.7^*$	$22.4 \pm 4.8^*$	$19.4 \pm 5.5^*$	$17.9 \pm 5.3^*$
PVR urine volume (mL)	$167 \pm 85$	$32 \pm 11^*$	$31 \pm 14^*$	$34 \pm 17^*$	$35 \pm 15^*$

Values are given as mean  $\pm$  SD. Difference was analyzed by Wilcoxon signed-rank test. \* *P*<0.01 vs. baseline.

IPSS: International prostate symptom score; QOL: Quality of life; PVR: post-void residual.

### References

- Cormier L, Ferchaud J, Galas JM, et al. Diagnosis of female bladder outlet obstruction and relevance of the parameter area under the curve of detrusor pressure during voiding: preliminary results. *J Urol.* 2002;167(5):2083-2087.
- Haylen BT, Krishnan S, Schulz S, et al. Has the true prevalence of voiding difficulty in urogynecology patients been underestimated? *Int Urogynecol J Pelvic Floor Dysfunct.* 2007;18(1):53–56.
- Kumar A, Mandhani A, Gogoi S, Srivastava A: Management of functional bladder neck obstruction in women: use of alpha-blockers and pediatric resectoscope for bladder neck incision. *J Urol.* 1999;162(6):2061–2065.

Disclosures

**Funding:** Grant from the national key vocational organization about clinical speciality **Clinical Trial:** No **Subjects:** HUMAN  
**Ethics Committee:** Institutional review board in Guang An Men Hospital, China Academy of Chinese Medical Sciences **Helsinki:**  
Yes **Informed Consent:** Yes