Abstract number : 520

Surgical outcomes of transurethral enucleation with bipolar for benign prostatic hyperplasia: Single surgeon's initial experience

Kim H.[1], Jung G.[2], Noh J.[2], Jeong S.J.[2]

[1] Hallym University Sacred Heart Hospital, Urology, Anyang, South Korea

[2] Seoul National University Bundang Hospital, Urology, Seongnam, South Korea

INTRODUCTION

• Transurethral enucleation with bipolar (TUEB) is one of endoscopic enucleation methods for the surgical treatment of benign prostatic hyperplasia (BPH).

• TUEB has more advantages in intraoperative hemostasis and specimen removal after enucleation.

HYPOTHESIS / AIMS OF STUDY

• We investigated the outcomes of the TUEB using a specialized loop performed by a single surgeon.

MATERIALS AND METHODS

• Single-surgeon series

• 387 consecutive patients from 14/04/2016 to 30/06/2021

• TUEB was performed using the TURis system (Olympus) with TUEB spatula loop, which is characterized by a spatula attached to the standard tungsten wire loop. A 26-Fr continuous-flow resectoscope was used and one-lobe enucleation technique was implemented in most patients.

• 193 patients (Early period group) vs 194 patients (Late period group)

• Evaluation at postop 1mo → 3mo → 6mo → 12mo → annual follow-up

Table 1. Baseline characteristics

	Total (n=387)	Early (n=193)	Late (n=194)	p value
Age	72.4 ± 8.0	73.0 ± 7.9	71.8 ± 8.0	0.148
Body mass index	24.5 ± 3.0	24.4 ± 3.0	24.7 ± 3.0	0.275
Preop PSA	8.4 ± 17.6	7.3 ± 8.4	9.5 ± 23.4	0.211
Total Prostate Volume (cc)	73.1 ± 34.2	74.4 ± 32.8	71.6 ± 35.6	0.428
Transitional Zone Volume (cc)	42.1 ± 28.9	42.0 ± 26.7	42.2 ± 30.9	0.948
Qmax (mL/sec)	9.5 ± 5.1	9.1 ± 4.9	9.9 ± 5.4	0.158
Voided volume (cc)	171.9 ± 114.2	172.9 ± 124.8	171.0 ± 102.7	0.882
Postvoid Residual urine (PVR) (cc)	106.6 ± 103.7	107.9 ± 93.3	118.2 ± 113.8	0.387

Mean ± Standard deviation

Table 2. Perioperative outcomes

	Total (n=387)	Early group (n=193)	Late group (n=194)	p value
Total operation time (min)	116.3 ± 46.5	115.8 ± 45.7	116.8 ± 47.5	0.863
Enucleation time (min)	47.6 ± 18.2	49.1 ± 16.3	46.1 ± 19.8	0.099
Morcellation time (min)	25.0 ± 17.9	26.3 ± 20.3	23.5 ± 14.3	0.162
Enucleated tissue weight (g)	27.0 ± 18.5	26.1 ± 17.3	27.9 ± 19.7	0.350
Enucleated tissue weight per time unit (g/min)	0.55 ± 0.28	0.52 ± 0.28	0.59 ± 0.27	0.037
Hospital stay (day)	5.61 ± 2.73	5.74 ± 3.14	5.49 ± 2.25	0.376
Transfusion (%)	2 (0.5)	1 (0.5)	1 (0.5)	0.736
Conversion to TURP (%)	40 (10.3)	37 (19.2)	3 (1.5)	< 0.001

Mean ± Standard deviation

Table 3. Complications and follow-up results of voiding parameters

	Total (n=387)	Early group (n=193)	Late group (n=194)	p value
Re-operation due to bleeding	24 (6%)	19 (9.8%)	5 (2.5%)	0.002
De novo Stress Urinary incontinence 6month	7 (2.4%)	3 (1.4%)	3 (4.6%)	0.188
De novo Urethral stricture 6month	1 (0.5%)	0 (0%)	1 (1.5%)	0.158
De novo Bladder neck contracture 6month	1 (0.5%)	1 (0.8%)	0 (0%)	0.477
Qmax 3mo	15.74 ± 11.73	14.40 ± 9.07	17.75 ± 14.90	0.328
PVR 3month (cc)	28.1 ± 34.0	31.9 ± 33.2	23.2 ± 35.2	0.362
Qmax 6month	16.91 ± 11.76	16.93 ± 11.95	16.83 ± 12.28	0.985
PVR 6month (cc)	26.2 ± 36.5	24.2 ± 38.7	32.1 ± 31.0	0.655

Mean ± Standard deviation

RESULTS

• Baseline Qmax was 9.5 mL/sec and postvoid urine measured 106.6cc. Total prostate and transitional volumes were 73.1cc and 42.1cc, respectively.

• As for preoperative baseline characteristics, total operation time (116.0min vs 116.8min, p=0.863), detailed procedure time (enucleation time: 49.2min vs 46.1min, p=0.099; morcellation time: 26.5min vs 23.6min, p=0.162), and enucleated tissue weight (26.1g vs 27.9g, p=0.350), no significant difference was observed between groups.

• There were significant differences in enucleated tissue weight per time unit (g/min) (0.52 vs 0.58, p=0.037), rate of reoperation due to bleeding (9.8% vs 2.5%, p=0.002), rate of conversion to transurethral prostatectomy (TURP) (19.2% vs 1.5%, p<0.001).

• With median follow-up of 11.0 months, there were no significant differences at postoperative 6 months between groups in rate of de novo stress incontinence (1.4% vs 4.4%, p=0.188), urethral stricture (0% vs 1.5%, p=0.158) or bladder neck contracture (0.8% vs 0%, p=0.477).

INTERPRETATION OF RESULTS

• One of the most prominent aspects of our findings is that the enucleation efficacy increased along with chronological time.

• This parameter is expressed as a simple fraction consisting of a numerator (enucleated weight) and a denominator (enucleation time) and this ratio was found to be increased in late group.

• As a consequence, we might deduce that surgeon can enucleate more adenoma as surgical experience is accumulated. The rate of reoperation due to bleeding and conversion to TURP was also decreased.

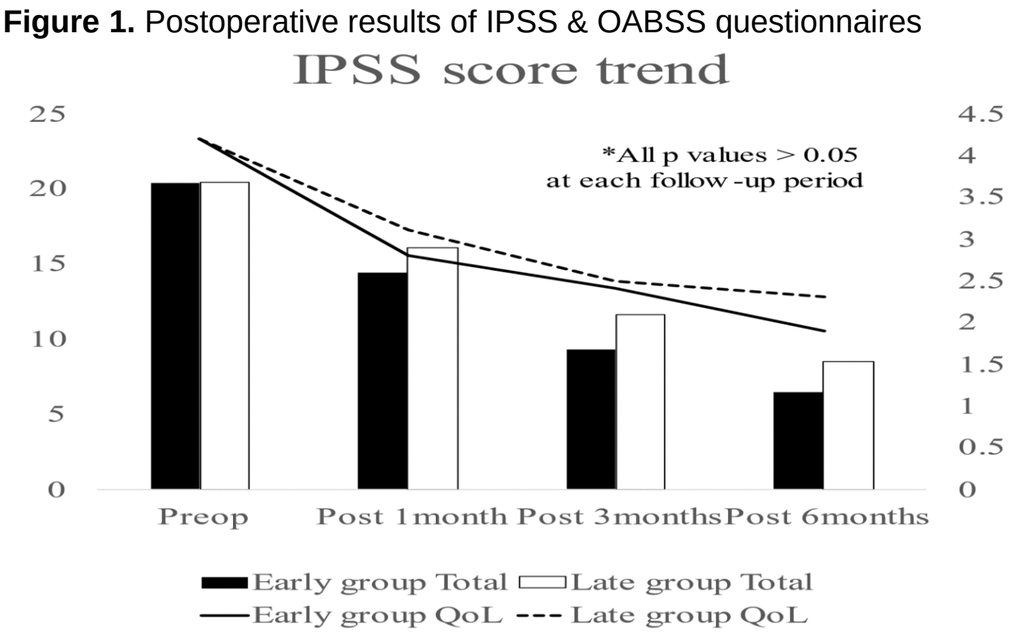
• As operation cases are accumulated, skills of hemostasis are suspected to get more sophisticated to achieve well bleeding control and clearer operative field to reduce reoperation and technique conversion.

CONCLUDING MESSAGE

• In the initial experience by a single surgeon, TUEB performed with a spatula loop is a safe and effective technique for BPH treatment that brings out substantial improvement in subjective and objective symptoms.

• As the surgical experience increased, the proportion of bleeding-related complications and conversion to TURP decreased significantly.

Figure 1. Postoperative results of IPSS & OABSS questionnaires



References

1. Hirasawa Y, Ide H, Yasumizu Y, Hoshino K, Ito Y, Masuda T. Comparison of transurethral enucleation with bipolar and transurethral resection in saline for managing benign prostatic hyperplasia. BJU Int. 2012;110(11 Pt C):E864-9.

2. Hirasawa Y, Kato Y, Fujita K. Transurethral Enucleation with Bipolar for Benign Prostatic Hyperplasia: 2-Year Outcomes and the Learning Curve of a Single Surgeon's Experience of 603 Consecutive Patients. J Endourol. 2017;31(7):679-85.

3. Jeon BJ, Chung H, Bae JH, Jung H, Lee JG, Choi H. Analysis of Present Status for Surgery of Benign Prostatic Hyperplasia in Korea Using Nationwide Healthcare System Data. Int Neurourol J. 2019;23(1):22-9.