MEDWIN PUBLISHERS
Committed to Create Value for Researchers

Open Access Journal of Urology & Nephrology
ISSN: 2578-4676

Results of 6-Month Follow-Up of Patients After B-Turp and Thulep

Valiev KhT[1], Nasirov FR[1,2], Yuldashev FYu[1], Giyasov ShI[3]*

[1]Fergana Institute of Public Health, Fergana, Uzbekistan
[2]HAYAT Medical Centre
[3]Tashkent State Medical University, Uzbekistan

***Corresponding author:** Giyasov ShI, Tashkent State Medical University, Uzbekistan, Email: dr.sh.giyasov@gmail.com

Research Article
Volume 11 Issue 1
Received Date: February 18, 2026
Published Date: March 05, 2026
DOI: 10.23880/oajun-16000272

Abstract

The article presents the results of surgical treatment of 555 patients with Benign Prostatic Hyperplasia (BPH) using two different methods. Of these, 301 patients underwent bipolar Transurethral Resection of the Prostate (b-TURP), and 254 underwent transurethral enucleation with a thulium laser (ThuLEP). The aim of the study was to evaluate the efficacy and safety of ThuLEP compared with b-TURP. After 6 months of observation after ThuLEP, the indicators on the IPSS, QoL, and PVR scales were significantly better compared to b-TURP, the Qmax parameters did not differ.

Keywords: BPH (Benign Prostatic Hyperplasia); LUTS (Low Urinary Tract Simptoms); b-TUR, ThuLEP; Complications

Introduction

According to the American Urological Association (AUA), Benign Prostatic Hyperplasia (BPH) is a histological diagnosis characterizing the proliferation of smooth muscle and epithelial cells in the transition zone of the prostate. This zone is characterized by constant growth throughout a man's life [1]. While BPH is not life-threatening, its clinical manifestations, such as Lower Urinary Tract Symptoms (LUTS), reduce the quality of life [2]. Patients usually require surgical treatment when conservative and drag therapy provides insufficient relief or when complications such as increased residual urine, bladder stones, or urinary tract infections develop. The "gold standard" of treatment, TURP, has certain complications, which led to the development of minimally invasive endoscopic methods based on the enucleation of hyperplastic tissue. In 2018, the EAU introduced the term EEP (endoscopic enucleation of the prostate) to encompass these techniques [3]. One popular method is Thulium Laser Enucleation of the Prostate (ThuLEP), which is gaining popularity in Uzbekistan. Currently, our center continues to work on systematizing postoperative complications and studying the long-term results of surgical treatment of BPH using various methods [4,5]. The aim of the study was to compare the results of ThuLEP and bipolar TURP.

Material and Methods

A retrospective analysis was conducted on 555 BPH patients operated on between 2018 and 2024. 301 patients underwent bipolar TURP at the Yuldashev MDS Clinic (Fergana), and 254 underwent ThuLEP at the "HAYAT medical centre" (Tashkent). Most interventions were performed under spinal anesthesia. The age distribution of patients operated on using two different methods is shown in (Table 1), the main clinical parameters of patients in (Table 2).

CC BY

Age (years)	ThuLEP (n=254) Abs. (%)	TURP (n=301) Abs. (%)
30-39	1 (0.4%)	1 (0.3%)
40-49	5 (2.0%)	5 (1.7%)
50-59	33 (13.0%)	25 (8.3%)
60-69	114 (44.9%)	122 (40.5%)
70-79	83 (32.7%)	120 (39.9%)
80-89	18 (7.1%)	27 (9.0%)
90-99	-	1 (0.3%)

Table 1: Age distribution of patients.

Group	Prostate Volume (cm3)	IPSS (M±SD)	QoL (M±SD)	Qmax (ml/s)	PVR (ml)
ThuLEP	117.25±45.3	24.11±3.3	3.83±0.8	8.81±4.1	110.05±112.5
TURP	49.64±4.2	24.89±3.6	3.95±0.8	8.48±3.9	75.19±17.2
P-value	P < 0.01	P > 0.05	P > 0.05	P > 0.05	P < 0.01

IPSS : International Prostate Symptom Score**; QoL** : Quality of Life**;** $\mathbf{Q}_{\mathbf{max}}$**:** Maximum urine flow rate**; PVR :** Post-Void Residual**.**
Table 2: Baseline clinical data.

Bipolar transurethral resection of the prostate was performed according to the accepted standard technique. ThuLEP was performed using the technique of Herrmann T.R. [6] using the FIBRLASE U1 device (Russia). For enucleation, a wavelength of 1.94 nm was used, an average power of 60 W, and for hemostasis, 1.55 nm and 10 W were used, with a pulse energy of 1.5 J. At the end of the operation, morcellation of the isolated adenomatous tissue was performed in the bladder. Statistical data processing was performed using IBM® SPSS Statistics 25.0 ("SPSS: An IBM Company", IBM SPSS Corp., Armonk, NY, USA).

Results

The duration of the ThuLEP operation was significantly longer due to morcellation time, but the volume of removed tissue and intraoperative blood loss were also higher.

Parameter	ThuLEP (n=254)	TURP (n=301)	P-value
Operation duration (min)	107.77±37.17	74.32±8.52	< 0.05
Removed tissue weight (g)	97.87±45.42	30.64±1.31	< 0.01
Intraoperative blood loss (ml)	377.95±221.71	30.42±5.85	< 0.01

Table 3. Intraoperative parameters.

The analysis showed that the duration of cystostomy drainage after operation in patients who had it installed for medical reasons before the intervention and urethral catheter witch installed at the end of operation did not differ. The length of postoperative hospital stay was shorter among patients after ThuLEP (Table 4).

Parameter	ThuLEP	TURP	P-value
Duration of cystostomy drainage after intervention (days), M±SD	3,72±2,21 n=81	4,22±0,75 n=109	> 0.05
Duration of urethral catheter placement after intervention (days), M±SD	2,57±0,66 n=254	2,56±0,57 n=301	> 0.05
Postoperative hospital stays (days)	3.03 ± 0.81	4.37 ± 0.63	< 0.01

Table 4: Postoperative parameters.

Copyright© Giyasov ShI, et al.

Information on patient safety assessment is provided in Table 5.

Complications	ThuLEP n (%)	TURP n (%)
Postoperative bleeding and recoagulation	4 (1.6%)	15 (5.0%)
UTI Exacerbation	11 (4.3%)	23 (7.6%)
Urethral Stricture	1 (0.4%)	3 (1.0%)
Bladder Neck Sclerosis	2 (0.8%)	7 (2.3%)

No statistically significant differences between groups, P > 0.05
Table 5: Safety assessment of methods.

Our study showed that patients' baseline IPSS, QoL, and Qmax scores did not differ before the intervention. We compared the effectiveness of the two treatments at 1, 3, and 6 months after the interventions (Table 6). At one and three month after ThuLEP, patients' performance in terms of IPSS, Qmax, QoL and PVR was better than in patients who underwent TURP. Qmax values leveled off only at six months after the procedure, and ThuLEP was superior to TURP in all other parameters.

Criteria	Groups	Preoperative indicators	After 1 month	After 3 months	After 6 months
IPSS	ThuLEP	24.11	14.27	9.7	6.9
	TURP	24.89	15.69	11.87	9.08
	P-value	***> 0.05***	***< 0.01***	***< 0.01***	***< 0.01***
QoL	ThuLEP	3,83±0,76	1,98±0,45	1,31±0,46	1,04±0,24
	TURP	3,95±0,82	2,07±0,53	1,50±0,65	1,27±0,6
	P-value	**< 0.05**	**< 0.05**	**< 0.01**	**< 0.01**
Q-max	ThuLEP	8.81	18.05	18.55	18.77
	TURP	8.48	17.28	17.86	18.72
	P-value	***> 0.05***	***< 0.05***	***< 0.05***	***> 0.05***
PVR	ThuLEP	110,05±7,02	24,05±24,23	8,13±12,66	2,25±9,33
	TURP	75,19±17,20	52,55±9,39	44,28±4,84	35,22±4,42
	P-value	**< 0.01**	**< 0.01**	**< 0.01**	**< 0.01**

Table 6: Comparison of treatment efficacy.

Discussion

In studies that compared the effectiveness of bipolar and holmium enucleation with open surgery, comparable effectiveness of the new methods was obtained, but they were superior in terms of IPSS, Qmax, duration of catheterization and hospitalization, and the number of complications compared to open surgery [3, 7-11]. It was after these studies that endoscopic enucleation of the prostate with a prostate gland volume of more than 80 cm3 was recognized as a method for treating prostate hyperplasia on par with open surgery [3]. The thulium laser has a wavelength of 1940 (fiber laser) to 2013 nm (YAG laser) with a continuous mode, end-emitting type [12]. Existing enucleation techniques include ThuVEP (vapoencleation, excision technique) and ThuLEP (blunt enucleation). Unlike ThuVEP, which involves tissue vaporization, with ThuLEP, the surgeon performs laser enucleation of adenomatous prostate tissue primarily using blunt laser enucleation. Many surgeons use the Herrmann T.R. technique [6] when performing ThuLEP.According to some researchers, when studying the tolerability and safety of the methods, ThuLEP, mono- and bipolar TURP were compared, where enucleation required more operating time, the duration of catheterization was identical compared to monopolar TURP, but there was an advantage in hospital stay compared with bipolar TURP [13,14]. After ThuLEP, a lower rate of blood transfusion was observed compared with monopolar TURP, hemotamponade compared with bipolar TURP, with no differences in other complications between the three techniques [13,14].

Copyright© Giyasov ShI, et al.

Conclusion

Despite the significantly larger volume of removed tissue in ThuLEP, the safety of the method was identical to TURP. Efficacy ThuLEP was significantly higher according to IPSS, QoL and PVR scores 1–6 months post-intervention. Qmax was significantly better at 1 and 3 months, at the 6th month did not differ between groups. In our opinion, it is necessary to study the impact of surgical methods on erectile function and the need for patients to take drug therapy for LUTS after surgical treatment.

References

1. Lokeshwar SD, Harper BT, Webb E, Jordan A, Dykes TA, et al. (2019) Epidemiology and treatment modalities for the management of benign prostatic hyperplasia. Transl Androl Urol. 8: 529-539.

2. Chapple CR, Wein AJ, Abrams P, Dmochowski RR, Giuliano F, et al. (2008) Lower urinary tract symptoms revisited: a broader clinical perspective. Eur Urol. PP: 54: 563.

3. Gratzke C, Bachmann A, Gratzke AC, Bachmann A, Descazeaud A, et al. (2015) EAU Guidelines on the Assessment of Non-neurogenic Male Lower Urinary Tract Symptoms including Benign Prostatic Obstruction . Eur Urol 67: 1099-109.

4. Giyasov SHI, Gafarov RR, Shodmonova ZR, Mukhtarov SHT, Akilov FA (2022) The role of postoperative complications classification in assessing the effectiveness and safety of surgical methods for treating benign prostate hyperplasia(pub. in Russian). Urologiya. 3: 83-91.

5. Nasirov FR, Valiyev KHT, Yuldashev FYU, Giyasov SHI (2025) Comparative evaluation of the efficacy and safety of surgical methods for the treatment of BPH: v-TUR and TuLEP (pub. in Russian). UROLOGIYA, 5: 89-96.

6. Bach T, Wendt-Nordahl G, Michel MS, Herrmann TR, Gross AJ (2009) Feasibility and efficacy of Thulium:YAG laser enucleation (VapoEnucleation) of the prostate. World J Urol 27: 541-545.

7. Wendt-Nordahl G, Huckele S, Honeck P, Alken P, Knoll T, et al. (2008) Systematic evaluation of a recently introduced 2-microm continuous-wave thulium laser for vaporesection of the prostate. J Endourol 22: 1041-1045.

8. Shah HN, Sodha HS, Kharodawala SJ, Khandkar AA, Hegde SS, et al. (2008) Influence of prostate size on the outcome of holmium laser enucleation of the prostate. BJU Int 101: 1536-1541.

9. Gilling PJ, Aho TF, Frampton CM, King CJ, Fraundorfer MR (2008) Holmium laser enucleation of the prostate: results at 6 years. Eur Urol 53: 744-749.

10. Elzayat EA, Habib EI, Elhilali MM (2005) Holmium laser enucleation of the prostate: a size-independent new "gold standard". Urology 66:108-113.

11. Shah HN, Mahajan AP, Hegde SS, Bansal MB (2007) Peri-operative complications of holmium laser enucleation of the prostate: experience in the first 280 patients, and a review of literature. BJU Int 100: 94-101.

12. Bach T, Muschter R, Sroka R, Gravas S, Skolarikos A, et al. (2012) Laser treatment of benign prostatic obstruction: basics and physical differences. Eur Urol 61: 317-325.

13. Zhang Y, Yuan P, Ma D, Gao X, Wei C (2019) Efficacy and safety of enucleation vs. resection of prostate for treatment of benign prostatic hyperplasia: a meta-analysis of randomized controlled trials. Prostate Cancer Prostatic Dis 22: 493-508.

14. Huang SW, Tsai CY, Tseng CS, Shih MC, Yeh YC, et al. (2019) Comparative efficacy and safety of new surgical treatments for benign prostatic hyperplasia: systematic review and network meta-analysis. BMJ 367: l5919.

Copyright© Giyasov ShI, et al.