

ORIGINAL ARTICLES

SUCCESS OF HANDMADE TRANSOBTURATOR SLINGS PREPARED FROM CONVENTIONAL POLYPROPYLENE MESH IN THE TREATMENT OF STRESS URINARY INCONTINENCE IN WOMEN

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Abstract

Objective : To determine the improvement of the quality of life in patient of BPH after transurethral resection of prostate.

Methods : A total of 102 of patients complaining lower urinary tract symptoms due to Benign prostatic hyperplasia (BPH). Each of the patient was followed up at 8 weeks (1st visit), 16 weeks (2nd visit) and 24 weeks (3rd visit) after transurethral resection of prostate (TURP). Before TURP for base line study of each patient was evaluated by history, physical examination, digital rectal examination (DRE), International Prostate Symptoms Score (IPSS), Quality of Life Score (QOL), Urinalysis, volume of the prostate and post voidal residual urine (PVR) were determined by ultrasonogram. Improvement of lower urinary tract symptoms and quality of life was determined using IPSS. Improvement was based on the changes from base line in symptoms, urinary flow rate, amount of post voidal residual urine and quality of life. Urine flow rate was measured by uroflowmetry as peak urinary flow rate (Q_{max}), voiding time and voided volume and was considered valid only if the voided volume was >200 ml. Symptoms were assessed using IPSS & consisting of seven symptoms (frequency, nocturia, urge in continence, urgency, hesitancy, terminal dribbling and sense of incomplete evacuation) that were graded from 0-5. An overall symptoms score was calculated.

Result: 102 cases were evaluated by history, physical examination, digital rectal examination (DRE), international prostate symptom scoring (IPSS), quality of life (QOL) scoring, uroflowmetry, post voided residual urine (PVR) and volume of prostate by USG and serum prostate specific antigen (PSA). Cases were selected between 60-75 years. In group-A, among 42 cases (41.2%) ≤ 65 years and group-B, 60 cases (58.80%) > 65 years. Age of the patients of each group was compared with IPSS, PVR, Q_{max} and QOL. Before TURP, IPSS range 17-25 and mean 21.61 ± 2.43 , after TURP, range 0-7 and mean 4.27 ± 1.71). There was significant correlation between the IPSS obstructive scores and Q_{max} at base line ($P < 0.001$), while correlations at the 1st, 2nd and 3rd follow up significant. There was also a significant correlation between IPSS obstructive score and PVR, and quality of life. After TURP, the IPSS Score showed significant improvements in urinary symptoms with the IPSS showing more significant change for obstructive symptoms. A significant improvement of IPSS was found from 2 months to 6 months follow up after TURP. The change was tested using "paired student 't' test". Mean quality of life was 5.01 ± 0.64 at base line, which became 0.60 ± 0.91 at end point and therefore change of mean QOL was -4.41 ± 0.93 ml. A significant improvement QOL after transurethral resection of the prostate. The change was test using "Paired Student 't' test". The change was found significant ($P < 0.001$).

Conclusion: Transurethral resection of prostate resolves obstructive symptoms, rapid improvement of urinary flow rate and quality of life that is why it is considered as gold standard treatment for moderate to severe symptomatic BPH patients.

Key words: Transurethral resection of prostate, Quality of life, Benign prostatic hyperplasia.

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Introduction :

Benign Prostatic Hyperplasia (BPH) is a common condition in middle-aged and elderly men and its prevalence increases with age[1]. Urinary symptoms are usually related with a subjective decrease in quality of life. There is no guidance regarding the extent of enlargement required to establish the diagnosis of benign prostatic hyperplasia (BPH). Although benign prostatic hyperplasia is a histological diagnosis, it can cause benign prostatic enlargement and benign prostatic obstruction (BPO) leading to a variety of lower urinary tract symptoms (LUTS) often referred to as 'symptomatic' benign prostatic hyperplasia[2]. Symptoms of BPH are caused by mechanical and dynamic obstruction of urine flow. The mechanical obstruction is due to compression or intrusion into the urethra by the enlarging nodule of the prostate or by protrusion of The median lobe of prostate into the bladder neck and leading to higher bladder outlet resistance. Dynamic obstruction is caused by increasing muscle tone of the bladder neck and prostate, which is regulated by a-adrenergic receptor[3]. A reduction tone might be expected to reduce prostatic urethral pressure and to improve obstructive symptoms. Benign Prostatic Hyperplasia (BPH) is associated with obstructive symptoms (like hesitancy, decrease force and narrow stream, sensation of incomplete bladder emptying, double voiding, straining to urinate, post void dribbling) and irritative symptoms (like urgency, frequency, nocturia) which may be troublesome to an elderly men.

The self-administered questionnaire developed by the American Urological Association (AUA) is both valid and reliable in identifying the need to treat patients and in monitoring their response to therapy (Barry et. al 1992). The IPSS symptom score questionnaire (Table-I) is perhaps the single most important tool used in the evaluation of patients with BPH.

The International Prostate Symptoms Score (IPSS) initiated the guideline panel for diagnosis and

management of benign prostatic hyperplasia. Patients with mild symptoms (having a score of 0 to 7) were assigned to watchful waiting, those with moderate (8 to 19) or severe (20 to 35) symptoms would undergo further testing and/ or treatment. The IPSS-7 symptom index is not diseases specific.

Many recent studies have examined the impact of the symptoms of BPH on quality of life[4,5]. Transurethral resection of prostate (TURP) aimed at reducing the symptoms experienced by patients and their effects on quality of life (QOL). Quality of life (Table-I) measures are important because the same symptoms are not equally bothersome for all patients: getting up three times a night patient may have a significant impact on quality of life, whereas another patient may not find this a problem. Hence patient- reported symptoms must be supplemented by measures of their perception on quality of life.

The assessment of BPH symptoms and their effects can be carried out at three levels (i) Patients- reported symptom questionnaires of which there are many including the commonly used validated IPSS (identical to the AUA index) (ii) BPH- specific quality of life questionnaires in which patients are asked to directly attribute effects of BPH symptoms to their quality of life examples of this form of measures include the ICS-BPH questionnaire which although lengthy has been validated recently and is comprehensive[6,7,8]. Other example include the AUA Bothersome index or symptom problem index (SPI) which determines how bothersome patients find their symptoms . The BPH impact index (BII) which measures how much urinary symptoms affect the various domains of health, a patient weighted measures comprising 12 questions relating to bladder storage and voiding function (Meyhoff et al., 1993 and Brasso et al., 1994). (iii) Generic quality life questionnaires: although not specific for BPH and treatment. Generic measures have shown to reflect symptom change after prostatic surgery, result of a large study of over 300 patients undergoing prostatectomy have shown significant sustained improvement in most health dimensions of the Euro quality of life[9].

Table-I
Quality of life due to urinary problems

	Delighted	Pleased	Mostly satisfied	Mixed about equally satisfied and unsatisfied	Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now , how would you feel about that ?	0	1	2	3	4	5	6

Methods:

The study was a prospective study and was conducted in the out patients department and indoor patient department of urology, Dhaka Medical College Hospital Dhaka from January 2003 to December 2004. A total 102 cases of selected were selected purposively according to selection with prostatic adenoma of >50 ml were enrolled and exclusion criteria from the patients attending urology out patient department of Dhaka Medical College Hospital with lower urinary tract symptoms due to BPH. Each of the patient was followed up at 8 weeks (1st visit), 16 weeks (2nd visit) 24 weeks (3rd visit). Before TURP for base line study of each patient was evaluated by history, physical examination, digital rectal examination (DRE), International Prostate Symptoms Scoring (IPSS), Quality of Life Scoring (QOL) Urinalysis, volume of the prostate and post voidal residual urine (PVR) were determined by ultrasonogram. Digital rectal examination was done to determine the prostate size and to exclude carcinoma prostate. Perineal sensation, anal tone and bulbocavernosus reflex were observed to detect any neurological lesions. Each patient was observed and followed up at 8 weeks (1st visit), 16 weeks (2nd visit) 24 weeks (3rd visit) after transurethral resection of prostate (TURP). On each follow up visit, each patient was evaluated by history to find out incontinence, retrograde ejaculation (Dry Coitus). IPSS score, QOL score also recorded and uroflowmetry was done to see the flow of urine and voiding time. USG was done to see post voidal residual urine volume and DRE also done in selected cases. Improvement of lower urinary tract symptoms and quality of life was determined using IPSS score. Improvement was based on the changes from base line in symptoms, urinary flow rate, amount of post voidal residual urine and quality of life. Urine flow rate was measured by uroflowmetry as peak urinary flow rate (Q_{max}), voiding time and voided volume and was considered valid only if the voided volume was

>200 ml. Symptoms were assessed urinary IPSS & consisting of seven symptoms (frequency, nocturia, urge in continence, urgency, hesitency, terminal dribbling and sense of incomplete evacuation) that were graded from 0-5. An overall symptoms score was calculated

Statistical Analysis : Data was compiled and statistical analysis were done using computer based software, Statistical Package for Social Science (SPSS), using paired 't' test. A P value <0.05 was taken as significance.

Results:

A total 102 cases were selected consecutively according to selection and exclusion criteria from the patients attending urology out patient department of Dhaka Medical College Hospital, Dhaka with lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH). 102 cases were evaluated by history, physical examination, digital rectal examination (DRE), international prostate symptom scoring (IPSS), quality of life (QOL) scoring, uroflowmetry, post voided residual urine (PVR) and volume of prostate by USG and serum prostate specific antigen (PSA). Cases were selected between 60-75 years. In group-A, among 42 cases (41.2%) ≤65 years and group-B, 60 cases (58.80%) > 65 years. Age of the patients of each group was compared with IPSS, PVR, Q_{max} and QOL. Table II Showing , Before TURP, IPSS range 17-25 and mean 21.61±2.43, after TURP, range 0-7 and mean 4.27±1.71). There was significant correlation between the IPSS obstructive scores and Q_{max} at base line (P=<0.001), while correlations at the 1st, 2nd and 3rd follow up significant. There was also a significant correlation between IPSS obstructive score and PVR, and quality of life. After TURP, the IPSS Score showed significant improvements in urinary symptoms with the IPSS showing more significant change for obstructive symptoms.

Table-II
Changes in IPSS from base line to end point after TURP (n=102)

IPSS	Baseline (before TURP)	Endpoint (after TURP)	t	df	P value
Mean±SD	21.61±2.43	4.27±1.71	82.508	101	<0.001
Range	17-25	0-7			
Change Mean±SD		-17.33±2.12			

Paired Student 't' test.

Again , Fig-5 showing Before TURP Q_{max} range 7-12.2 and mean was 9.96 ± 1.69 , which became range 18-25 and mean was 22.61 ± 2.28 after TURP and therefore change of mean Q_{max} was 12.64 ± 2.69 .

TURP caused a significant change in Q_{max} the mean Q_{max} being 12.64 ± 2.69 ml/sec and mean PVR range >100 ml. The mean (SD) improvement in Q_{max} was 12.64 ± 2.69 ml/sec and reduction in PVR, 60 patients having no detectable PVR at the 6 months follow up. The change was tested using "paired student 't' test". The change was found significant ($P < 0.001$).

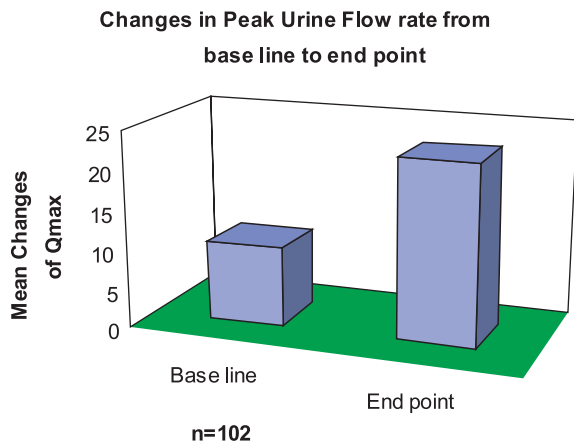


Fig-5: Changes of Q_{max} from base line to end point after TURP.

Base line = Score determined before TURP
 End point = Score determined after TURP
 Changes = Mean change of Q_{max} determined

Again Fig-6 showing Mean voiding time was 54.65 ± 7.09 sec at base line, which became 21.08 ± 1.86 sec at end point and therefore change of mean voiding time was -33.57 ± 7.53 sec.

Hence a significant improvement of voiding time was found after transurethral resection of prostate (TURP).

The changes was tested using 'Paired student 't' test'. The change was found significant ($P = < 0.001$).

Again , table III showing Mean PVR was 205.27 ± 14.76 ml at base line, which became 4.07 ± 8.92 ml at end point and therefore change of mean PVR was -201.21 ± 13.82 ml.

Hence a significant reduction of PVR was found after TURP. The change was test using 'Paired Student 't' test'. The change was found significant ($P = < 0.001$).

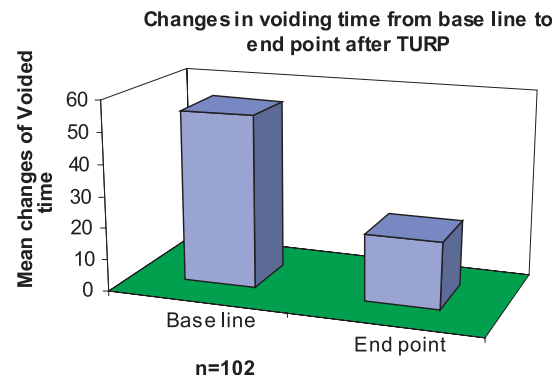


Fig-6 : Changes in voiding time from base line to end point after TURP.

Base line = Score determined before TURP
 End point = Score determined after TURP
 Changes = Mean change of Voiding Time determined after TURP.

Again Fig 7 Showing Mean quality of life was 5.01 ± 0.64 at base line, which became 0.60 ± 0.91 at end point and therefore change of mean QOL was -4.41 ± 0.93 ml.

Hence a significant improvement QOL after transurethral resection of the prostate. The change was test using 'Paired Student 't' test'. The change was found significant ($P = < 0.001$).

Table- III
 Change in PVR from base line to end point after TURP (n=102)

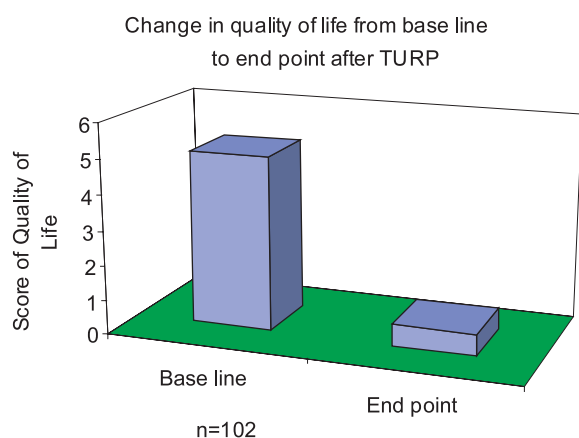
PVR (ml))	Baseline (before TURP)	Endpoint (after TURP)	t	df	P value
Mean±SD	205.27 ± 14.76	4.07 ± 8.92	147.075	101	<0.001
Range	180-220	0-5			
Change Mean±SD		-201.21 ± 13.82			Paired Student 't' test.

Paired Student 't' test.

Table IV
Showing Complications observed during and after TURP (n=102).

Complications	After TURP(cases)	Percentage (%)	Follow up
Bleeding	12	11.67	2 nd , 4 th & 6 th month
Failure to void	0	0	2 nd , 4 th & 6 th month
Delayed post operative bleeding	2	1.96	2 nd , 4 th & 6 th month
Urinary Bladder Neck contracture	0	0	2 nd , 4 th & 6 th month
Urethral stricture	0	0	2 nd , 4 th & 6 th month
Impotency	0	0	2 nd , 4 th & 6 th month
Retrograde ejaculation	20	19.60	2 nd , 4 th & 6 th month

The table showing 11.67% had bleeding and 19.60% had retrograde ejaculation after TURP.



Discussion :

Recently most of the urologist in our country has been using this surgical method, transurethral resection of prostate of BPH. This present study was done to determine the improvement of symptoms and quality of life after transurethral resection of prostate. In this study 102 patients of benign prostatic hyperplasia (BPH) from out patient department of urology of Dhaka Medical College Hospital were selected for transurethral resection of prostate (TURP) and were followed up 2 monthly for 6 months to determine the improvement of IPSS, peak urine flow rate (Q_{max}) and quality of life. Some investigators found same effect with urinary symptoms, quality of life and sexual function in patients with benign prostate hyperplasia before and after prostatectomy in 60 men with lower urinary tract symptoms associated with BPH. Study was done to establish significant improvement in obstructive and irritative symptom and quality of life score [18,19].

Effect of TURP was again observed in a separate study by evaluating change of IPSS before TURP irritative mean

6.71; obstructive mean 9.69 and after TURP became irritative 3.06 and obstructive 3.38, showed significant improvement in urinary symptoms with the IPSS for obstructive symptoms than for irritative symptoms or quality of life (QOL) [20].

Similar studies were done and found improvement in quality of life in patients after TURP [20,21,22].

Transurethral resection of prostate is a commonly performed operation in patients with clearly defined indication. The present study was done to evaluate the improvement of urinary symptoms; peak urine flow rate and quality of life after transurethral resection of prostate (TURP). It is associated with very low mortality and morbidity rates. This study was conducted on consecutively selected 102 cases with lower urinary tract symptoms associate with benign prostatic hyperplasia

From the present study it can be concluded that transurethral resection of prostate resolves obstructive symptoms, rapid improvement of urinary flow rate and quality of life that is why it is gold standard treatment for moderate to severe symptomatic BPH patients.

Conclusion:

Transurethral resection of prostate is a commonly performed operation in patients with clearly defined indication. The present study was done to evaluate the improvement of urinary symptoms; peak urine flow rate and quality of life after transurethral resection of prostate (TURP). It is associated with very low mortality and morbidity rates. From this it can be concluded that transurethral resection of prostate resolves obstructive symptoms, rapid improvement of urinary flow rate and quality of life that is why it is gold standard treatment for moderate to severe symptomatic BPH patients.

Conflict of Interest : None Declared

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Abbreviations:

- BPO : Benign Prostatic Obstruction
 IPSS : International Prostate Symptom Score
 QoL : Quality of Life
 TURP : Transurethral Resection of Prostate