

Efficacy of Transurethral Resection of Prostate (TURP) in Symptomatic Relief in Benign Prostatic Hyperplasia (BPH) Patients without Retention

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ABSTRACT

Background: Benign prostatic hyperplasia had been known for several centuries to be a cause of urinary dysfunction. In a study of aging among the normal volunteers it was found that there is 60% clinical incidence of BPH in men between 60-69 years of age. This is a common surgical problem which affects men above the age of 50 years. However there are only 10-15% of cases which have significant outflow obstruction.

Aim: To find out efficacy of TURP in symptomatic relief in BPH patients without retention and to determine parameters influencing the outcome.

Study Design: Comparative prospective study.

Methodology: This study was carried out in the Department of Urology Divisional Headquarter Hospital, Mirpur Azad Kashmir from January 1st, 2017 to December 31st 2017. A total of 50 consecutive patients who presented in the department with LUTS due to BPH (without retention) were included. Serum P.S.A was done, if there was suspicion of hard prostate on D.R.E.

Results: Mean age of the patients was 67.5±7.17 years. Out of total 50, 43 (86%) patients had severe symptom score and 07 (14%) patients had moderate symptom score preoperatively. Normal flow rate in males is 20-25ml/sec. There was no patient in our study who had a flow rate more than 15ml/sec preoperatively. Post operative follow-up of maximum urinary flow rate (Qmax) shows that after remarkable improvement in Qmax between 1st & 4th week with a p <0.0010 and <0.0005, there was only minor change between 4th week & 12th week, p <0.940 shows that no significant change occurred during this period.

Conclusion: It is concluded that TURP is very effective even in those patients who present with lower urinary tract symptoms due to BPH without retention of urine. Urologists should not wait if the patient is not responding to the medical treatment. TURP should be done as early as possible to save the patient from undue catheterization and its complications.

Keywords: Transurethral Resection of Prostate, Benign Prostatic Hyperplasia, Symptomatic Relief, Retention.

INTRODUCTION

Benign prostatic hyperplasia (BPH) is very common condition in men older than 50 years of age. It affects almost 3 out of 4 men during the seventh decade of life, and at the age of 80 years, it is 85% of the male population.¹ This starts from the periurethral glands near the age of 35 years and it consists of microscopic stromal nodules and smooth muscles.² In a study of aging among the normal volunteers it was found that there is 60% clinical incidence of BPH in men between 60-69 years of age.³ It is important that other conditions associated with lower urinary tract symptoms (LUTS) be excluded before a definitive diagnosis is made.⁴ Uroflowmetry and international prostate symptom score (IPSS), although not allowing definitive diagnosis of obstruction may nonetheless satisfy the clinical need of a rapid, easy and accurate tool for the non-invasive screening of LUTS patients.⁵ Surgical treatment for prostatic enlargement associated with BPH is one of the most common operations in the modern world. Mode of presentation of

BPH greatly influences the post operative outcome of this disease.⁶ However, many other causes including smooth muscle dysfunction and neurological factors may contribute to these symptoms, and accurate diagnosis is imperative before invasive treatments are chosen.⁷

METHODOLOGY

This study was carried out in the Department of Urology Divisional Headquarter Hospital, Mirpur Azad Kashmir from January 1st, 2017 to December 31st 2017. A total of 50 consecutive patients who presented in the department with LUTS due to BPH (without retention) were included. Serum P.S.A was done, if there was suspicion of hard prostate on D.R.E (blood sample was taken prior to D.R.E). After doing the complete work up these patients underwent cystourethroscopy and TURP. Written and informed consent was taken and patient was prepared for surgery.

RESULTS

Mean age of the patients was 67.5±7.17 years (Table 1). Out of total 50, 43 (86%) patients had severe symptom score and 7 (14%) patients had moderate symptom score pre-operatively. At 1st follow up at 1st week postoperatively

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28 (56%) patients improved and entered in mild symptoms group and 22 (44%) patients remained in moderate symptoms score group. No patient remained in severe symptom score group. At 2nd follow up at 4th week postoperatively 45 (90%) patients improved and entered in mild symptoms group and only 5 (10%) patients remained in moderate symptoms. No patient remained in severe symptom score group. At 3rd follow up at 12th week postoperatively 49 (98%) patients improved and entered in mild symptoms and only 1 (2%) patient remained in moderate symptoms score group. No patient remained in severe symptom score group (Table 2). Normal flow rate in males is 20-25ml/sec. A flow rate less than 10ml/sec is considered a strong evidence of obstruction and a flow rate in between 10-15ml/sec gives a suspicion of obstruction. There was no patient in our study who had a flow rate more than 15ml/sec preoperatively. Out of total 50, 36 (72%) patients had Qmax less than 10ml/sec and 14 (28%) patients had Qmax between 10-15 ml/sec (pre-operatively).

At 1st follow up at 1st week post operatively 37 (74%) patients developed a normal flow rate of 20-25ml/sec and only 13 (26%) patients remained with a flow rate in between 10-20ml/sec. No patient remained with a flow rate of less than 10 ml/sec. At 2nd follow up at 4th week post operatively 44 (88%) patients developed a normal flow rate of 20-25ml/sec and only 6 (12%) patients remained with a flow rate in between 10-20 ml/sec. No patient remained with a flow rate of less than 10ml/sec. At 3rd follow up at 12th week post operatively 49 (98%) patients developed a normal flow rate of 20-25ml/sec and only 1 (2%) patient remained with a flow rate in between 10-20ml/sec. No patient remained with a flow rate of less than 10ml/sec (Table 3).

At 1st follow up at 1st week post operatively 42 (84%) patients remained with PMRU <50ml and only 8 (16%) patients remained with a PMRU between 50-100ml. No patient remained with a PMRU of more than 100ml. At 2nd follow up at 4th week post-operatively 48 (96%) patients had a PMRU less than 50ml and only 2 (4%) patients remained with a PMRU between 50-100ml. At 3rd follow up at 12th week post operatively all the 50 patients had a PMRU of less than 50ml (Table 4).

Mean PMRU at 2nd follow up at 4th week was 8.86ml and at 3rd follow up at 12th week it was 4.60ml. The mean Qmax preoperatively was 7.94ml/sec and postoperatively mean Qmax at 1st follow up at 1st week was 7.22ml/sec. Mean Qmax at 2nd follow up at 4th week was 22.2ml/sec and at 3rd follow up at 12th week it was 26.9ml/sec.

Table 1: Age group of the patient (n=50)

| Age in years | Frequency | Percent |
|--------------|-----------|---------|
| 58-67 | 28 | 56.0 |
| 68-77 | 15 | 30.0 |
| 78 and above | 7 | 14.0 |

Mean±SD = 67.5±7.17 years

Table 2: Pre & Postoperative International Prostate Symptoms Score in 1st, 4th & 12th weeks

| Weeks | Severe | % | Moderate | % |
|-----------------------|--------|----|----------|----|
| Preop | 43 | 86 | 7 | 14 |
| Postop | Mild | | Moderate | |
| 1 st week | 28 | 56 | 22 | 44 |
| 4 th week | 45 | 90 | 5 | 10 |
| 12 th week | 49 | 98 | 1 | 2 |

Table 3: Pre & Postoperative UFM (MFR) in 1st, 2nd, 4th & 12th weeks

| Weeks | No. Suspicious obstruction | % | No. Definitive obstruction | % |
|-----------------------|----------------------------|----|----------------------------|----|
| Preop | 14 | 28 | 36 | 72 |
| Postop | Normal | | Suspicious obstruction | |
| 1 st week | 37 | 74 | 13 | 26 |
| 4 th week | 44 | 88 | 6 | 12 |
| 12 th week | 49 | 98 | 1 | 2 |

Table 4: Pre & Postoperative PMRU (1st, 2nd, & 3rd Follow up)

| Weeks | No.>100ml | % | No. 50-100ml | % |
|---------------------------|-----------|-----|--------------|----|
| Preop | 42 | 84 | 8 | 16 |
| Postop | <50ml | | 50-100ml | |
| 1 st follow up | 42 | 84 | 8 | 16 |
| 2 nd follow up | 48 | 96 | 2 | 4 |
| 3 rd follow up | 50 | 100 | 0 | 0 |

DISCUSSION

Transurethral resection of prostate remains the standard tool for the urologists for the management of BPH. In this study the age ranged from 58 to 86 years. Mean age of patients in 63 % cases was similar to other studies where an average age of 69 years was reported.⁸ Prostatic size estimation by digital rectal examination is a reliable procedure.⁹ No relationship has been found between the size of prostate and the degree of bladder out let obstruction.¹⁰ Immediate complications are related to the size of the adenoma, resection time, technique, age of patients and the presence of severity of pre-TURP symptoms. Off and on stress incontinence was reported in 3 patients which was relieved later on.

Total incontinence was not found in the present study although it has been reported in many other series. It could be due to sphincter damage or edema of sphincter tissues. In this series substantial numbers of patients were satisfied with the results of TURP which is comparable with other studies¹¹.

In our study all the four parameters improved after TUR-P. Most of the patients improved at first follow up at 1st week post operatively and almost all the patients improved to their maximum at 2nd follow up at 4th week post operatively. There was a minor improvement at 3rd follow up at 12th week post operatively.

In a study by van Venrooij et al, he compared the outcomes after TUR-P in urodynamically obstructed versus urodynamically unobstructed, or selected equivocal men and concluded that TUR-P could be a good treatment alternative for selected equivocal or unobstructed men who opt for resection, did not benefit from medical therapy and as a requirement for treatment discontinuation. They also added that TUR-P can result in a significant reduction in urethral resistance, even in unobstructed man¹².

In our study IPSS improved from 25.20 to 2.02 within one week postoperatively. Maximum improvement was observed at second follow up at 4th week postoperatively. After that there was only minimal change in the IPSS at our 3rd follow up at 12th week postoperatively. Same has been proven by Ger van Venrooij, symptoms and well-being were quantified by American Urological Association symptom index (SI), quality-of-life score (QOL).¹³ They studied the improvements of Qmax, and nocturia, after TURP and the improvements of IPSS, QOL, and PMRU.

Itoh et al conducted a study to determine preoperative predictive variables regarding treatment outcomes following transurethral resection of the prostate (TURP) of patients with symptomatic benign prostatic enlargement (BPE). All the patients had completed the evaluation of International Prostate Symptom Score (I-PSS), and quality of life (QOL) index, and had undergone full urodynamics before the surgery. Outcomes were assessed at 12 months after surgery¹⁴.

The preoperative Mean PMRU in our study was 210ml. The PMRU improved from 210ml to 4.60ml. Maximum improvement was noted at 2nd follow up at 4th week post operatively. This has also been proved in a study conducted by Porru in Italy to evaluate the predictive value of a combination of IPSS, uroflowmetry and ultrasound determination of residual urine and volume in the determination of bladder outflow obstruction and in predicting treatment outcome.

The overall success rate was 86% when measured by the IPSS. Its preoperative value was 16.9 and dropped significantly to 4 (P=0.005). The score improved significantly after surgery only in the obstructed group compared to the non obstructed group (P=0.001), however preoperative IPSS did not correlate with objective treatment results.

Urinary flow rate, a very important parameter in diagnosis and comparison with postoperative results, also improved significantly from 7.94ml/sec to 26.9ml/sec. A study was conducted by Hakenberg, to assess the value of preoperative symptom score assessment and pressure-flow measurement in men undergoing transurethral prostatectomy (TURP). Our results of the preoperative evaluation (Qmax, IPSS, QOL (score) and PMRU), postoperative variables (Qmax, IPSS, QOL (score) and PMRU) and the improvement in these scores were similar to those reported in other published studies.⁶⁵ There was no affect of age, prostate size or severity of symptoms on the outcome of TUR-P. Also there was no major complication either per operatively or in the early post operative period.

CONCLUSION

It is concluded that TUR-P is very effective even in those patients who present with lower urinary tract symptoms due to BPH without retention of urine. Urologists should not wait if the patient is not responding to the medical treatment.

TUR-P should be done as early as possible to save the patient from undue catheterization and its complications.

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