ORIGINAL ARTICLE

OUTCOME OF TRANSURETHRAL RESECTION OF PROSTATE IN CLINICAL BENIGN PROSTATIC HYPERPLASIA

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Background: Benign prostatic hyperplasia (BPH) is a condition in which the prostate gland becomes enlarged. Some men with enlarged prostate glands may experience symptoms while some may have few symptoms. Symptomatic improvement determines the successful outcome of surgical procedure of TURP for clinical BPH patients**.** Objectives of this study were to assess the outcome of transurethral resection of prostate (TURP) in clinical BPH with the help of International Prostate Symptom Score (IPSS). **Methods:** This was descriptive case series study conducted at the Department of Urology, Liaquat University of Medical and Health Sciences, Jamshoro from November 2009 to April 2010. All patients who underwent TURP for clinical BPH were included in the study. Their preoperative IPSS was done by asking irritative and obstructive symptoms. IPSS was calculated for patients who presented with urinary retention by asking lower urinary tract symptoms before urinary retention. Each symptom carried a score of 0–5, and the total score was 35. After the TURP, IPSS was calculated on 1st follow-up visit after 6 weeks and 2nd follow-up visit after 12 weeks. Outcome, was considered favourable if there was mild grade (IPSS <7) on 12th week after TRUP. **Results:** Total of 70 patients of clinical BPH were included in study. Mean age of the patients was 63.1±3.0 yrs. Outcome of transurethral resection of prostate was found to be favourable in 81.4% after 6 weeks in 1st follow-up visit and in 62 (88.6%) patients after 12 weeks in second follow-up visit. Preoperatively mean IPSS was 22.5 and postoperatively mean IPSS was 6.5. **Conclusion**: TURP is an effective and gold standard surgical treatment option in the clinical BPH patients.

Keywords: Benign prostatic hyperplasia, lower urinary tract, bladder outlet obstruction, acute urinary retention, transurethral resection of prostate, TURP

INTRODUCTION

Benign prostatic hyperplasia (BPH) is a medical condition occurring in elderly males, resulting from enlargement of prostate gland.[1] Clinical BPH causes moderate to severe lower urinary tract symptoms (LUTS) in about one quarter of 50 years elderly males, one third of elderly in their sixties and about half of all men 80 years of age or above.[2] Lower urinary tract symptoms in BPH are scored with International Prostate Symptoms Score (IPSS) and it includes sense of incomplete emptying, frequency, intermittency, urgency, weak stream, hesitancy (straining for micturition) and nocturia.[3] According to IPSS the severity of LUTS is graded as mild, moderate and severe.[4] With the passage of time the severity of the lower urinary tract symptoms increases and causes complications like acute urinary retention if untreated.[5] The treatment of BPH varies from watchful waiting to surgical intervention. The surgical intervention is indicated after failure of medical therapy or complicated BPH.[6]

Transurethral Resection of Prostate (TURP) is a gold standard surgical treatment for BPH with LUTS not responding to conservative treatment.[7] TURP reduces lower urinary tract symptoms and also reduces the IPSS in 94.7% cases of clinical BPH and improves quality of life in patients with BPH.[8,9] Clinical BPH causes lower urinary tract symptoms or complications in advanced stages like urinary retention.

The objective of this study was to evaluate the outcome of TURP on clinical BPH.

MATERIAL AND METHODS

This was a descriptive case series study carried out in the Department of Urology, Liaquat University of Medical and Health Sciences, Jamshoro over a period of 6 months from November 2009 to April 2010 with purposive, non-probability sampling technique.

Patients meeting the inclusion criteria were included in study. Informed consent was taken. Data includes demographic profile and lower urinary tract symptoms. The questionnaire of IPSS was also given to the patients to read it, understand, and fill it. Lower urinary tract symptoms in the questionnaire of IPSS were Frequency, Nocturia, Sensation of incomplete emptying, Urgency, Poor stream, Hesitancy, and Intermittency. These all symptoms were scored through IPSS. Each symptom carried score of 0–5, so total score was 35. Mild IPSS ranged from 0–7, moderate 8–19 and severe 20–35. IPSS was calculated for patients who presented with urinary retention by asking lower urinary tract symptoms before urinary retention. Transurethral resection of prostate (TURP) was done. Post-operatively follow-up was done on 6th and 12th weeks and symptoms were scored by IPSS. Outcome, was considered

favourable if there was mild grade (IPSS <7) on 12th week after TRUP.

All information was documented using a performa. The information of study variables was analysed by using SPSS-16. Quantitative variable like age was assessed through mean and standard deviation. Qualitative variable like good outcome was assessed through frequency and percentage.

RESULTS

Total 70 patients of clinical BPH were included in study. Thirty-four (48.6%) patients were of 61–70 years, 2 patients were more than 80 years old with mean age of 63.1±3.0 yrs (Table-1). The Mean IPSS preoperatively in clinical BPH patients was 22.5 with range of 20–35.

Table-2 shows IPSS on the 1st and 2nd follow-up visit after 6 and 12 weeks. On 1st follow-up, IPSS was <7 (mild IPSS) in 57 (81.4%) patients, moderate (>7 and <19) in 11 (15.7%) patients, and severe (19 or more) in 2 (2.9%) patients. On 2nd follow-up, Mild IPSS <7 was seen in 62 (88.6%) patients, Moderate in 7 (10.%), and Severe in 1 (1.5%) patients. Outcome of transurethral resection of prostate (TURP) was found to be favourable in 62 patients (88.6%) (Table-3).

Table-1: Age distribution (n=70)

Age (year)	Number	Percentage
40–50	6	8.6
51–60	23	32.9
61–70	34	48.6
71–80	5	7.1
>81	2	2.8
Total	**70**	**100.0**
Mean±SD	**63.1±3.0**	

Table-2: IPSS on 1st and 2nd follow up (n=70)

	1st follow-up		2nd follow-up	
IPSS	**Number**	**Percentage**	**Number**	**Percentage**
Mild	57	81.4	62	88.5
Moderate	10	14.2	7	10.0
Severe	3	4.3	1	1.5
Total	**70**	**100.0**	**70**	**100.0**

Table-3: Outcome of TURP (n=70)

TURP	Number	Percentage
Favourable	62	88.6
Unfavourable	8	11.4
Total	**70**	**100.0**

DISCUSSION

The prostate size increases in size as age increases from when male crosses the young age. Aging and the functional testes are well known risk factors for benign prostatic hyperplasia.[10] The storage (Irritative) symptoms include urgency, frequency and nocturia. The voiding (Obstructive) symptoms include hesitancy (straining for micturition), poor stream, intermittency and sense of incomplete emptying during voiding.[11,12] The lower urinary tract symptoms are 7 in number, and each symptom carries a score of 0–5 according to severity. This score is known as AUA-7 index or international prostate symptom score (IPSS).[13] The lower urinary tract symptoms are graded on the basis of International Prostate Symptom Score (IPSS) as mild (0–7), moderate (8–19) and severe (20–35). Impact of quality of life is assessed by bothersome scoring system.[14] Benign prostatic hyperplasia (BPH) causes moderate to severe lower urinary tract symptoms (LUTS) in about one quarter of 50 yrs elderly males, one third of 60 yrs old males, and about half of all men 80 yrs of age or above.[2] The effect of prostate volume on lower urinary tract symptoms due to BPH (Bladder Outlet Obstruction) is poorly defined.[15]

The treatment options for Clinical BPH vary from watchful waiting to Medical or Surgical Therapy. For mild IPSS, which is not much more disturbing the life of patient, has option of watchful waiting. Patients with clinical BPH (BPH causing lower urinary tract symptoms) who have moderate IPSS have option of medical therapy. The clinical BPH with severe IPSS or complications like refractory urinary retention, persistent gross haematuria, urinary bladder stones, recurrent urinary tract infections, and renal insufficiency has best treatment option of surgical intervention.[16] The medical therapy to clinical BPH includes alpha adrenergic receptors antagonist and 5 alpha reductase inhibitors.[16] The 5 alpha reductase inhibitors (5αRIs) include, finasteride and dutasteride, which are much more beneficial for Clinical BPH which has prostatic volume more than 40 ml.[16] The surgical treatment options including minimal invasive surgical procedures and open surgical procedures. The minimal invasive surgical procedures includes stents (temporary and permanent), transurethral needle ablation of prostate, transurethral microwave thermotherapy, laser, transurethral resection of prostate, transurethral vaporization of prostate, transurethral incision of prostate, and other less popular technologies which are included in minor invasive surgical procedures including water induced thermotherapy, transurethral ethanol ablation of prostate etc. The open surgical procedures include transvesical and retropubic prostatectomy.[17]

Transurethral Resection of Prostate (TURP) is most commonly (90% of all surgical interventions) used surgical procedure. The irrigating fluids used in TURP are Glycine, distilled water, normal saline, mannitol, sorbitol etc. Recently normal saline has been introduced as the best irrigating fluid because it has less chances of Transurethral syndrome. Bipolar diathermy is used with normal saline, because there is less dispersion of electric current with it. We used glycine 1.5% as an irrigating fluid during TURP.

The effect modifiers, like urine complete (detailed report) was checked in every patient and history taken about use of drugs which can affect the lower urinary tract symptoms. If any patient who had effect modifiers (abnormal urine analysis and drugs causing

effect on lower urinary tract symptoms, i.e., alpha blockers, anti-cholinergics or diuretics) presented at follow-up then his effect modifier was corrected and then IPSS was recorded. Unfavourable outcome was found after first follow-up visit in 13 (18.5%) patients in which moderate IPSS was found in 10 (14.2%) patients, and severe IPSS was found in 3 (4.9%) patients.

The second follow-up visit after 12 weeks showed favourable outcome in 62 (88.5%) patients without presence of effect modifiers as compared to good outcome of 94.7% as observed by Chalise *et al*.[9] Another study conducted at the Uppsala University Hospital, Sweden showed that 86% of clinical BPH patients responded IPSS <7 after TURP in the sequential follow-up on 3, 6 months and 1 yr.[18] After the second follow-up visit unfavourable outcome was found in 12.8% patients in whom moderate IPSS was found in 10%, and severe IPSS was found in 2.8% patients.

On first follow-up visit urine detailed report of 2 patients had evidence of urinary tract infection (raised WBC and nitrate-positive). The most probable cause of urinary tract infection is improper sterilisation which is the most common cause in developing countries. Antibiotic were given to patients after checking their urine culture and sensitivity for 7 days when their urine detailed report became normal and urine culture and sensitivity showed no growth, then their IPSS was done.

Two patients who had severe IPSS developed urinary retention because of residual prostate and again TURP was done for those patients. Those patients who had moderate IPSS, medical therapy (selective alpha blocker) was given to them and they were happy with their life on medical therapy. The 2 patients had urinary incontinence after removal of self-retaining Foleys catheter and they were catheterized again for one week. When self-retaining catheter was removed after one week, patients voided normally. The most probable cause of urinary incontinence is oedema at external sphincter, trauma (partial injury) to external sphincter and detrusor instability.

In present study, two patients (2.8%) after TURP developed the complication of secondary haemorrhage as compare to <0.5% by Harvey *et al*.[19]

CONCLUSION

The transurethral resection of prostate (TURP) has been found an effective surgical procedure for clinical BPH patients.

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