Original Article

Study to Compare the Results of Transvesical VS Transurethral Prostatectomy in respect to Incidence of Post Operative Urinary Incontinence

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ABSTRACT

Objective: To compare the results of transurethral resection of prostate with transvesical prostatectomy in respect to the incidence, and severity of postoperative urinary incontinence.

Study Design: Comparative cross sectional study.

Place and Duration of Study: This study was carried out in GMMMC Hospital Sukkur, Pakistan, where all transvesical prostatectomies were performed. It was two years study from feburvoury 2008 to March 2010.

Materials and Methods:280 patients were selected, they were diveded in two groups and 140 Patients underwent TURP were kept in group A, and 140 patients transvesical prostatectomy group was titled as B. Patients having associated stricture urethra, urinary bladder stones or bladder diverticulum and later on proved a scarcinoma of prostate were excluded form the study.

Results: From group-A (TURP Group) 20 (14.28%) Patients developed incontinence postoperatively and all had stress type of incontinence. While in group B Transvesical prostatectomy 37 (26.4%) patients developed urinary incontinence. 30(21.4) patients had stress incontinence and 7(5%) patients developed continuous urinary leakage. Rate of recovery after conservative measures remained rapid with group A as compared to group B.

Conclusion: Frequency and severity of postoperative urinary incontinence is more with transvesical approach. But the facility of TURP is not freely available. Therefore improvement in the technique of open prostatectomy is mandatory. For which recommendations have been given.

Key Words: TURP, Transvesical, Transurethral Prostatectomy, intracorporeal lithotripsy

INTRODUCTION

TURP is the classic treatment for urinary symptoms due to the prostate (prostatism) or BPH. Prostatic tissue is removed and so the physical bulk of the prostate is reduced. Obstruction is reduced and urinary symptoms considerably improved. The operation is performed through the penis and usually there are no cuts or surgical incisions. The procedure is tolerated reasonably well, although associated with retrograde ejaculation. It is the gold standard treatment for BPH with many years of history to support its use.

Indications: According to the Agency for Health Care Policy and Research guidelines for the diagnosis and treatment of BPH and the recommendations of the Second International Consultation on Benign Prostatic Hypertrophy, the absolute indications for primary surgical management of BPH are as follows:[2]

- Refractory urinary retention
- Recurrent urinary tract infections due to prostatic hypertrophy
- Recurrent gross hematuria
- Renal insufficiency secondary to bladder outlet obstruction
- Bladder calculi
- Permanently damaged or weakened bladders
- Large bladder diverticula that do not empty well secondary to an enlarged prostate

Contraindications: The only absolute indication for an open prostatectomy over a TURP is the need for an additional open procedure on the bladder that must be performed at the same time as the prostatectomy. Such indications include open surgical resection of a large bladder diverticulum or removal of a bladder stone that cannot be easily fragmented by intracorporeal lithotripsy.

A relative indication for the selection of an open prostate surgery over a TURP is generally based on prostatic volume and the ability of the surgeon to complete the TURP in less than 90 minutes of actual operating time (although < 60 min is considered optimal).

In general, open prostatectomy can be justified in a patient with a prostate of 45 g or larger, but this is totally dependent on the skill and experience of the endoscopic urological surgeon. Most experienced urologists use a prostatic volume of 60-100 g as the upper limit amenable to endoscopic removal, but some

highly skilled resectionists are capable of safely treating a 200-g prostate with TURP in less than 90 minutes.

MATERIALS AND METHODS

This study was carried out in Ghulam Muhammad Mahar Medical College hospital (GMMMC) sukkur, Pakistan, to compare the results of TURP with transvesical prostatectomy in respect to post procedure incontinence from feburvoury 2008 to March 2010. Two groups were made and 100 cases of BPH were selected for each group by non-probability convenient sampling technique. Patients who underwent TURP were put in group A and transvesicle prostatectomy group was titled as group B. Decision for the approach was based on institution. Transurethral approach was adopted at Ghulam Muhammad Mahar Medical College Hospital, sukkhur. Patients having associated urethral stricture, urinary bladder stone or diverticulumwere excluded from the study. Urinary incontinence was compared between both groups after the procedures by following the patients weekly up to 24 weeks. Symptoms of incontinence were controlled by pelvic floor exercise, drugs (Anticholinergic) i.e. Oxybutynin 5-mg 2-4 times/day, Imipramine hydrochlorid 25-mg 2-4 times/day, Nusculotropic Flavoxate hydrochloride200-mg 3-4 times/day. Prostate size/weight was calculated by the formula: $\pi/6 \times$ anteroposterior $\times$ transverse diameter $\times$ sagittal diameter. A well-informed consent was obtained from all study subjects. A predesigned proforma was used to record information regarding demographics, presenting complaints, history, examination, investigations, treatment outcomes, complications and follow-up. SPSS version 16 was used to analyze data. Chi-square test was used to differentiate the proportions, while continuous data were analyzed by applying t-test. P-value up to 0.05 was considered significant.

RESULTS

Among group A 83 patients were admitted with acute retention of urine and 07 patients were operated due to more irritating symptoms. Among group B 85 patients were operated for urinary retention and 5 patients with more irritating symptoms. Mean prostate size was 70-g and 76-g for group A and group B respectively (P=0.12). Mean age of group A subjects was 63±8.9 years while it was 69±9.6 years in group B (P=0.14). Majority of the patients in both groups were in their 6th decade of life (Table 1). Urinary incontinence was observed in 30 patients after TURP (Group A) and in 35 subjects after TVP (Group B) which was insignificant (P=0.298). No continuous leaking of urine in the absence of intra-abdominal pressure was observed in any subject of group A (Table 2). During follow up symptomatic improvement was observed in all 30 subjects of group A latest up to 10th week, whereas 1 subject of group B remained nonresponsive to conventional therapy (Table 3).

Table No.1: Age distribution of study subjects

Age range	Group A(n=140)	Group B(n=140)
50-60 years	70 (50%)	68 (48.5%)
61-70 years	52 (37.1%)	50 (35.7%)
71-80 years	10 (7.14%)	14 (10%)
> 80 years	08(5.7%)	08 (5.7%)

Table No.2: Comparison of urinary incontinence between study groups

	Group A (n=140)	Group B(n=140)
No incontinence	120 (85.7%)	103 (73.5%)
Stress incontinence (associated with coughing and sneezing)	20 (14.2%)	30 (21.4%)
Continuous leaking (without increased intra-abdominal pressure)	0	7 (5%)

Table No.3: Follow up observations for symptomatic improvement

Follow-up Period	Group A (n=20)	Group B (n=37)
2-3 weeks	9 (45.00%)	11(29.73%)
4-6 weeks	7 (35.00%)	15(40.54%)
7-8 weeks	2 (10.00%)	4 (10.81%)
9-10 weeks	2 (10.00%)	3 (8.11%)
11-12 weeks	0	3 (8.11%)
Non-respondent	0	1 (2.70%)

DISCUSSION

In recent decades, various interventional procedures for the treatment of symptomatic benign prosthetic hyperplasia (BPH) have been developed. Most of them have been considered potential alternative to open prostatic surgery such as transurethral resection of prostate (TURP), or transurethral incision of prostate (TUIP)5. Despite good results observed in the initial clinical studies, most concepts and procedures were never generally accepted6. However, they contributed considerably to knowledge regarding treatment of symptomatic and obstructive BPH7. Only a few procedures have stood the test of time and became part of the urological armamentarium8. Currently interventional methods are classified by their effect on prostate tissue in procedures with immediate tissue ablation (open prostatectomy, TURP, vaporization techniques, laser resection technique), procedures with delayed tissue ablation (transurethral high energy microwave thermo therapy, transurethral needle ablation, interstitial laser coagulation) and other

procedures (TUIP, stents) with relief in obstruction without tissue ablation9. Out of these the cost and results of open prostatectomy and transurethral resection of prostate are compatible10. Whichever procedure is adopted, two main concerns that make operating surgeons most worried are bleeding during and in immediate postoperative phase and incontinence at the time of removal of catheter. In our study two most popular procedures for BPH were compared for post operative urinary incontinence. The patients were divided in group A and group B. Group-A underwent transurethral resection of prostate. In this group 20 (14.2%) patients developed post-operative urinary incontinence. In group-B patient underwent transvesical prostatectomy. In this group 37 (26.4%) patients developed postoperative urinary incontinence. We have sub-classified incontinence in two categories, stress incontinence and continuous leaking of urine. In group A all 20 (14%) patients had stress incontinence i.e. with coughing and sneezing. While in group B 30 (21.4%) had stress incontinence and 07 (5%) had continuous dribbling of urine. This proportion is consistent with other studies11. Measures used for controlling the symptoms were pelvic floor muscle exercise and medicine including anticholinergic drugs (Oxybutynin, imipramine hydrochloride)12. Antihistamine (Chlorpheraireaminemaleate)13, and Musculotropic relaxants (Flavoxate hydrochloride)14.

Improvement observed in group A was rapid as 16 (80%) patients become symptoms free within 6 weeks duration and remaining 4 (20%) in 10 weeks. While in group B, it took upto 12 weeks to improve. Similar observations have also been made in a study by Margel D et al15. One patient in group B remained incontinent with continuous leaking of urine and required condom catheter. The analysis of clinical studies shows a great variety of different results. The main reason is that the design of past and present studies ignored the pathophysiological aspect of BPH, especially the obstructive component and the fact that the outcome of most procedure depends on the operator/user16.In a study at Japan TURP is found superior to transurethral vaporization of prostate (TUVP) and transurethral radiofrequency thermotherapy (TURF), interstitial laser coagulation of prostate (ILCP) and transurethral microwave thermotherapy (TUMT) with regard to efficacy and overall usefullness17. One study showed that the functional length of the sphincter unit is the portion with positive closure pressure, and this is where urethral pressure is greater than bladder pressure18. In men the functional length is longer and the maximum closure pressure builds up in the prostatic segment, reaches a peak in the membranous urethra and drops as it reaches the level of bulbous urethra19. The entire functional length in men is about 6-7cm20. After prostatectomy, there is usually no positive pressure in the entire prostatic fossa, minimal closure pressure at the apex of the prostate and normal or greater than normal pressure within the voluntary sphincter segment of the membranous urethera21. It means that it is the functional length of the sphincter segment above the genitourinary diaphragm that determines the degree of incontinence22. High pressure is almost always recorded within the voluntary sphincter despite the common belief “Itrogenically induced incontinence” is due to damage to the voluntary sphincter. Its true incidence is very low and makes patients become permanently incontinent23. Postoperative urinary incontinence is multifactorial and its main cause is decreased functional length of prosthetic urethera. Sometimes hypertrophic overactive urinary bladder may lead to incontinence with frequency and urgency. Infrequently trauma to external sphincter mechanism lead to permanent incontinence. In this study only one patient became permanently incontinent. In that patient prostate was fibrosed in that patient and during enucleation probably trauma to external sphincter mechanism may have occurred. Rest of the patients in both groups who developed incontinence, recovered within few weeks time.

CONCLUSION

Frequency of postoperative urinary incontinence is higher and more severity in transvesical approach than in TURP. As the facility of TURP is not freely available improvement in expertise with transvesical approach is mandatory**.**

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