

Early surgical management in patients with benign enlargement of prostate with economical constraints

Vinayak G Wagaskar, Ajaykumar R Gajengi, Pranav R Chhajed, Sujata K Patwardhan

Department of Urology, Seth G. S. Medical College and KEM Hospital, Mumbai, Maharashtra, India.
Correspondence to: Vinayak G Wagaskar, E-mail: vinayakwagaskar99@gmail.com

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Abstract

Background: Transurethral resection of prostate (TURP) to treat benign enlargement of prostate (BEP) has been the gold standard for decades. It has been demonstrated to be efficient, cost-effective and durable with low long-term complication and retreatment rates.

Objective: To evaluate the results and financial implications of surgical therapy in a subset of BEP patients who underwent TURP with relative indications, after an initial medical therapy.

Material and Methods: In this open-prospective study, we assessed 100 patients with BEP who were initially on medical therapy but later on opted for TURP based on various reasons. Preoperative financial expenditure on the medications and perioperative expenses were analyzed. The financial implication of an operative procedure against the long-term medical treatment was evaluated. The paired T test was applied wherever possible.

Results: The mean age of the patients was 67.29 (48–84) years; 56% of patients were dependent on their siblings for financial support. Rest 44% possessed monthly average income between Rs. 4,000 and 6,000. There was mean improvement of 17.13 in American Urological Association symptom score, mean increment of 6.68 mL/s in maximum flow rate, and mean decrease of 54.36 mL in postvoid residue post-TURP. Majority (84%) of the patients were happy with TURP when compared with 35% with medical management.

Conclusion: In a public hospital setup with subsidized operative charges, a long-term medical management (>2 years) would prove more expensive compared with an earlier surgical intervention, which would thus be worthwhile in patients with economic constraints.

KEY WORDS: BEP, TURP, AUA symptom score, Qmax, PVR

Introduction

Transurethral resection of prostate (TURP) to treat benign enlargement of prostate (BEP) has been the gold standard for decades. It has been shown to be an efficient and cost-effective treatment, in addition to being durable with low long-

term complication and retreatment rates.^[1] The cost-effective management of BEP remains an important issue for economically deprived section of the society. The recent advent of highly effective and widely available medical treatment has produced a decrease in TURP rates.^[1] With the increasing and aging population, the number of patients with BEP demanding treatment is increasing every day. In addition, the cost of long-term medical therapy for BEP remains largely unevaluated. Hence, this study is undertaken to evaluate patients who lack absolute indications for TURP and whether surgery will help them to reduce the economic burden of long-term medical management.

Objective

To evaluate the results and financial implications of surgical therapy in a subset of BEP patients who

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underwent TURP with relative indications, after an initial medical therapy.

Materials and Methods

We assessed 100 consecutive patients of BEP from August 2010 to February 2012, in an open, observational, and prospective study. Patients having absolute indications for the surgery were excluded. Patients with BEP presenting with lower urinary tract symptoms who were initially started on medical therapy and later, depending on the economic background, accessibility to medical care given an option of surgery in a public teaching hospital setup with subsidized operative cost [Figure 1].

Patients were assessed for preoperative American Urological Association (AUA) symptom score, serum prostate-specific antigen, uroflow rates, and ultrasonography of kidney, ureter, and bladder (USG-KUB) with prostate size and postvoid residue (PVR). Alpha-blocker (tamsulosin, 0.4 mg) was offered to patients with prostate size less than 40 g, and anti-androgen (dutasteride, 0.5 mg) was added in those with prostate size equal to or more than 40 g. Patients were asked to follow-up 1 month after treatment. An inquiry into economic background of patients and place of residence was made. If the patient had economic constraints and could not follow-up regularly, he was given an option of early surgery. The cost of medications and cost of surgery was assessed. Subjective well-being on medication before surgery and again postoperatively was determined.

All patients underwent a conventional TURP. Postoperative AUA symptom score, uroflow rates, and USG-KUB with PVR were determined 3 to 6 months after the surgery. Post-operative surgical complications (with financial repercussions) were also looked into.

Preoperative financial expenditure on the medications and perioperative expenses were analyzed. The financial implication of an operative procedure against the long-term medical treatment was evaluated.

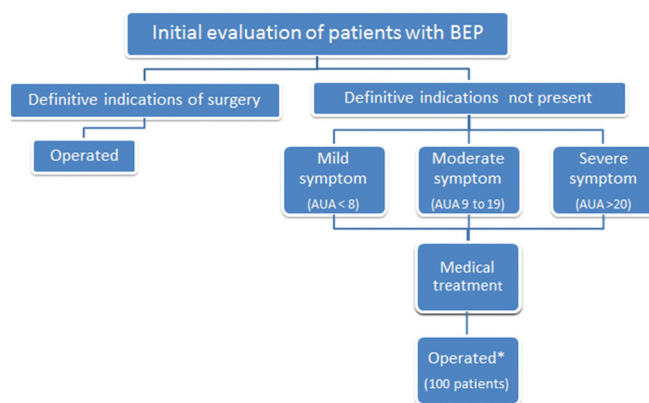


Figure 1: Patient selection and line of management.

Results

The mean age of patients was 67.29 (48–84) years. All patients enrolled in the study were having serum PSA below 4 ng/mL, with average being 1.3 ng/mL [Table 1].

ABOUT 56% of the patients were dependent on their siblings for financial support. Rest 44% possessed a monthly average income between Rs. 4,000 and 6,000. Medications for BEP were not available free of cost in our setup. A cost of single tablet varies from Rs. 4 (4–9) to 18 (13–18) (depending on the type and brand of medication). Mean cost for tamsulosin-only group (77% patients) was Rs. 1,194 per 6 months (varies from Rs. 162 to 255 per month) and combination group (23% patients) was Rs. 2,714 per 6 months (varies from Rs. 394 to 525 per month). The cost of surgery includes operative charges of Rs. 2,000, disposals of Rs. 2,000–3,000, and hospital stay and anesthesia charges at free of cost. Hence, the average cost is Rs. 4,200–5,000 [Table 2].

Table 3 shows that there was a mean improvement of 17.13 in AUA symptom score, mean increment of 6.68 mL/s in maximum flow rate (Qmax), and mean decrease of 54.36 mL in PVR post-TURP. Majority (84%) of the patients were happy with TURP when compared with 35% with medical management. All these improvements were statistically significant.

Complications

Of the 100 patients who underwent TURP, four patients developed intraoperative subtrigonal perforation, three patients showed incomplete resection, and one experienced TURP syndrome. There was no mortality in the postoperative period. Seven percentage of the patients showed urge incontinence, 2% of the patients bulbar urethral stricture, and 1% bladder neck stenosis. These patients underwent visual

Table 1: Clinical outcome on medication in patients with different AUA scores

AUA symptom score	Total No. of Patients	No of patients who were happy on medications	
		N	%
Mild	10	4	40
Moderate	24	12	50
Severe	66	19	28.79
Total	100	35	

Table 2: Reason for opting surgery

Reasons	No. of patients
Financial reason	27
Unhappy on medications	65
Apprehension about disease	1
Side effects of medications	0
Other reasons (residing at remote places)	7
Total	100

Table 3: Treatment outcome

	Preoperative	Postoperative	Mean difference	Paired differences				
				SD	95% confidence interval		df	t
					Lower	Upper		
Mean AUA symptom score	23.16	6.03	17.13*	9.531	15.239	19.021	99	17.973
Mean Qmax	9.69	16.37	-6.68*	6.556	-7.981	-5.379	99	-10.188
Mean PVR	112.7	58.37	54.36*	86.739	37.149	71.571	99	6.267
Subjective satisfaction rate	35% ^a	84%	49%*					

SD, standard deviation; df, degrees of freedom.

^aOn medical treatment.

*Statistically significant, $p < 0.001$.

internal urethrotomy and bladder neck incision at later dates. Second surgical intervention resulted in additional cost of approximately Rs. 1,000 to 4,000.

Discussion

TURP remains the gold standard surgical treatment for BEP. Medical therapy has also proved its efficacy and safety in the management of BEP.^[2] The lifetime occurrence of surgical or medical intervention in men aged 50 years for BEP is calculated to be 35%.^[3] Wasson et al.^[4] found that in a 3-year, multicenter, randomized-controlled trial comparing men with moderate symptoms of BEP treated by either watchful waiting (WW) or TURP, 24% of the men in the WW group underwent surgical intervention.

The MTOPS (Medical Therapy of Prostatic Symptoms) trial described an approximately 8% incidence of surgical therapy at 5 years for BEP in subjects initially treated with an alpha-adrenergic blocking medication.^[5] The common reason to reconsider the decision about medical management is the development of acute retention of urine. The percentage of patients who further continue medical management after acute retention of urine is not mentioned in the literature. Surgical management has specific indications, although it is offered to patients with high AUA score in few centers. Hence, patients who are indicated for medical management cannot be directly compared with patients with surgical option. Mortality rate after TURP has reduced considerably during the past 30 years and is $<0.25\%$ in contemporary TURP series.^[6-12]

Teaching hospitals in India cater to specific category of patients who belongs to socioeconomic classes IV and V. The economic strata of the population taking care at public teaching hospital are usually in the income group less than Rs. 1,622 per head per month.^[13] Patients usually do not consult us primarily and are usually referred from primary or secondary medical center. The attitude of patients toward surgery remains as a means to avoid medical management.

We felt need to offer surgical management after an initial 3 to 6 months course of medical management in patients who cannot afford it or who live in remote areas because of this assumption. However, this proposition introduces an element

of bias as the patient feels that “medicines will be stopped once you undergo surgery.” Although patient is given thorough idea about morbidity, mortality, and complications of TURP, the fact that he will be off-cost of medications may introduce a bias in the study.

There is a subgroup of patients attending our outpatient department who continue medical management and do not insist on surgery as they receive free medical treatment from various government schemes. They account for 10% of our patients. These patients could have served as a control of our study group as they continued with medical management. However, this comparison was not feasible.

In spite of the above drawbacks, we feel that surgical management offer superior outcome to patients with moderate-to-severe AUA symptom score than medical management, especially if they cannot afford the medical management or come from faraway place. The need for further medical treatment for BEP after surgery is approximately 7% in our study and is mainly for urgency and urge incontinence.

Table 4 compares the outcomes of TURP with other series in the literature; however, direct comparison cannot be made as the indications for surgery were different in different series. Results of the studies mentioned in Table 4 are comparable with our series. Studies with similar methodology with our study were not found in literature.

Early results of the study showed a positive impact on both subjective and objective treatment outcome parameters in the

Table 4: Comparison of outcomes of TURP with other series in the literature.

Improvement	Our series	Nuhoglu et al. ^[14]	De Silverio et al. ^[15]	Kuntz et al. ^[16]
Mean decrease in AUA symptom score	17.13	17.3	24.3	21.4
Mean increase in Qmax	6.68	7.3	6.9	5.9
Mean decrease in PVR	54.36	88	75	216

Table 5: Comparison of complications of TURP with other series

	Our Series ^a (%)	Mebust <i>et al.</i> ^[9] (%)	Doll <i>et al.</i> ^[11] (%)	Kuntz <i>et al.</i> ^[16] (%)
Clot retention	1	3.3	11	5
Severe hematuria	0	6.4	22	2
TUR syndrome	1	2	NA	0
Perforation	4	0.9	10	4
Incontinence	7	NA	38	1
	Our Series (%)	Kuntz <i>et al.</i> ^[16] (%)	Muzzonigro <i>et al.</i> ^[17] (%)	
Incontinence	7	5	1.8	
Re-TURP	2	3	NA	
Stricture	2	2.2	3.6	

^aComplications: Between 3 months and 1 year of follow-up.

abovementioned subgroup of operated BEP patients, with a statistically significant improvement in AUA symptom score over its mean preoperative value on medications.

The results were decent especially in patients with moderate-to-severe preoperative AUA symptom score. Table 5 compares the complications of TURP with other series. Except for incontinence, the rest of complication rates were comparable with other series.

Medical treatment exceeding 23.33 months (2 years) of duration becomes costlier than the total surgical cost and perioperative expenses (in our setup).

Elderly patients who are economically dependent on others (56% in our study) appear to be benefited financially if they are given an option of upfront surgery early in the course of their disease (only at a public hospital setup with subsidized operative charges). This study results cannot be applicable to corporate or private hospitals as the rate of TURP is minimum Rs. 25,000 or above.

Di Silverio *et al.*^[15] corroborate the aforementioned findings and recommend the surgery at an earlier stage for those presenting with severe symptoms and associated comorbid condition, which, in near future, may make the patient unfit for surgery (instead of delayed medical therapy).

DiSantostefano *et al.*^[18] used data from published literature to evaluate cost effectiveness of WW, pharmacotherapy, transurethral microwave therapy, and TURP in treating patients with BEP. They found that TURP was the most effective treatment for severe lower urinary tract symptoms versus WW.

Conclusions

Patients with moderate–high AUA score showed good improvements in subjective and objective parameters; we feel that it would be better to offer TURP rather than medical management after detailed counseling as to routine complication of the surgery. It appears that, in a public hospital setup with subsidized operative charges, a long-term medical management (>2 years) would prove more expensive compared with an earlier surgical intervention, which would thus be worthwhile in patients with economic constraints.

Patients with mild AUA score are better followed up as the benefits of surgery will not exceed the benefits of medical management.

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