

Analysis of Standard Surgical Treatment for Benign Prostatic Hyperplasia in Patients above 70 years: An Institutional Based Study

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Conflict of interest: Nil

Abstract:

Background and Objectives: In this study, we aimed to determine the complications of standard surgical treatments among patients over 70 years in a high-volume urologic center.

Methods: We analyzed 100 consecutive patients older than 70 years who had undergone transurethral prostatic resection of the prostate or open prostatectomy for treatment of benign prostatic hyperplasia from January 2022 to March 2023 in Department of Urology, GRMC, Gwalior. We analyzed patient age, prostate volume, prostate-specific antigen level, international prostatic symptom score, quality of life score, urinary retention, co-morbidities, surgical technique and satisfaction with treatment.

Results: Median age was 79 years. Forty-eight patients had undergone transurethral prostatic resection of the prostate, and 52 had undergone open prostatectomy. The median International Prostatic Symptom Score was 20, the median prostate volume was 83 g, 51% were using an indwelling bladder catheter, and the median prostate specific antigen level was 5.0 ng/ml. The most common comorbidities were hypertension, diabetes and coronary disease. The most common urological complication was urethral stenosis, followed by bladder neck sclerosis, urinary fistula, late macroscopic hematuria and persistent urinary incontinence. The most common clinical complication was myocardial infarction, followed by acute renal failure requiring dialysis. Incidental carcinoma of the prostate was present in 6% of cases. One case had urothelial bladder cancer.

Conclusions: Standard surgical treatments for benign prostatic hyperplasia are safe and satisfactory among the elderly. Complications are infrequent, and urethral stenosis is the most common. No clinical variable is associated with the occurrence of complications.

Keywords: Prostatic Hyperplasia; Prostatectomy; Transurethral Resection of Prostate; Aged; Quality of Life, Complications.

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Introduction

Benign prostatic hyperplasia (BPH) represents an increase in the total number of stromal and epithelial cells within the prostate gland. It is associated with bothersome lower urinary tract symptoms

that affect the individual's quality of life and interfere with day-to-day activities. BPH is now one of the most common diseases in the elderly. According to histological studies, more than 50% of men

will face this diagnosis by the age of 60 (90% by the age of 85).[1] Assuming that by the year 2030, 20% of the population of the United States will be older than 65 years[2], the rise in the incidence of lower urinary tract symptoms (LUTS) due to BPH makes it a public health question. LUTS involve an estimated annual impact of \$1.1 billion of direct costs (excluding outpatient pharmaceuticals) and indirect costs of approximately 38 million hours of lost productivity by these patients.[3]

In recent decades, several new methods for treating BPH have been developed, both pharmaceutical and surgical. Several minimally invasive procedures are still favored by the international community due to their lower complication rates. However, it is necessary to remember that the perceived efficacy and long-term durability of these therapies remain to be proven; so far, the gold-standard treatments are still open prostatectomy (OP) and transurethral resection of the prostate (TURP).[4]

Because BPH is associated with old age, OP and TURP are usually performed in patients with various comorbidities. Some studies have confirmed a direct effect of comorbidity on perioperative morbidity and mortality after these procedures.[5] However, OP and TURP patient populations, especially in multicenter studies and meta-analyses with large numbers of patients, are generally approximately 65 to 75 years old.[6]

A better understanding of the clinical characteristics of patients over 75 years old is important for preventing complications and improving clinical outcomes. In this study, we aimed to determine the complications (both clinical and urological) of standard surgical treatments among patients over 75 years in a high-volume urologic center.

Materials and Methods

We analyzed a selected group of 100 consecutive patients older than 70 years who had undergone TURP or OP for BPH from January 2022 to March 2023 in Department of Urology, GRMC, Gwalior. Exclusion criteria in this study were previous surgical treatment for BPH, diagnosis of prostate cancer and suspected neurogenic bladder. Preoperatively, all patients were subjected to anamnesis focused on urinary symptoms, according to the International Prostate Symptom Score (IPSS) and QOL (Quality Of Life) gradation. We also analyzed the available information from digital rectal examinations, prostate ultrasounds, prostate-specific antigen (PSA) levels, use of an indwelling bladder catheter due to urinary retention, presence of comorbidities (arterial hypertension, diabetes and coronary diseases) and surgical technique. To analyze treatment outcome, patients were asked if they were satisfied with the treatment results. Urologic and non-urologic complications were recorded. It is important to note that all patients preoperatively attended an evaluation with specialists; patients who were considered to be at high risk of complications (cardiological or other) after an analysis of their global health status and comorbidities were not treated with surgery.

Statistical Analysis

Data so obtained were subjected to statistical analysis. Data analysis was done by SPSS software ® version 22.0. Descriptive statistical analysis, which included frequency and percentages, was used to characterize the data. Chi-square test was used for association between factors and $p < 0.05$ was considered statistically significant.

Results

Table 1: Patient characteristics according to the incidence of complications.

Variables	Complications (30)	No complications (70)	p- value
Age (years)	74.2	78.2	0.11
IPSS	15.6	19.4	0.21
QoLscore	4.2	4.2	0.10
Prostate volume	124.6	92.8	0.33
PSA	8.6	7.8	0.32
Urinary retention	56%	53%	0.21
Hypertension	82%	56%	0.34
Diabetes	40%	28%	0.45
CAD	40%	28%	0.45
Surgery TURP	16%	84%	0.14
OP	22%	78%	0.29

As per table 1 the median patient age was 79 years (75 to 91). Forty-eight patients were subjected to TURP and 52 to OP. Hypertension, diabetes and coronary disease were present in 82%, 40% and 40% of the cases, respectively. Median preoperative IPSS was 20 (8 to 31), and 51% of patients were using an indwelling bladder catheter. Median prostate volume was 83 g (24 to 417), and median PSA level was 5.0 ng/ml (0.2 to 60). After a median follow-up period of 17 months (1 to 40), 83% of patients were satisfied with the treatment. Overall, complications were present in 20% of cases. Regarding urological complications, 10% presented urethral stenosis, 2% had bladder neck sclerosis, 2% had urinary fistula, 2% had late macroscopic hematuria and 2% had persistent urinary incontinence. Among clinical complications, 1% presented acute renal failure requiring dialysis, and 2% presented myocardial infarction. One patient died due to infarction.

Discussion

This study demonstrates that traditional surgical treatments for BPH can be performed in patients older than 75 years with acceptable complication rates and good functional results. No variable was statistically associated with the occurrence of complications; therefore, no comorbidity taken alone can be considered an absolute contra-indication for these procedures.

With the increase in the number of aging males in most populations, an improved understanding of the clinical characteristics of this selected population is important for improving surgical outcomes. On average, patients with BPH who are candidates for surgical treatment are older than before. In a study compared the characteristics of patients who underwent surgery in 1985 to 1989, in 1995 to 1999 and in 2005 to 2009.[7] The mean ages of the men were 65.4, 65.9 and 69.3 years, respectively. Likewise, the prevalence of hypertension, a history of surgery, and "other complications" (e.g., stroke, cancer and cardiac conditions) increased significantly over time. The prevalence of hypertension increased from 22% in the first period to 43% in the last, and the prevalence of diabetes increased from 8% to 13%.[8]

Due to the relative morbidity of TURP and OP, minimally surgical alternatives have been proposed for the treatment of BPH. Among these alternatives, transurethral needle ablation of the prostate with radiofrequency and transurethral microwave thermotherapy (TUMT) have been frequently performed in the United States. Their main advantage is the fact that they are performed under local anesthesia in an outpatient fashion. However, systematic reviews of the literature have concluded that they do not achieve the same level of efficacy as the classic methods with respect to any subjective or objective varia-

ble. Further, their efficacy declines in the long term, with a significantly higher rate of secondary treatment than encountered with classic methods.[9,10]

Reich et al. in a multicentric prospective evaluation that involved 10,654 patients reported a 27.5% rate of preoperative catheterization. In our study, 51% of patients were using an indwelling bladder catheter. This high rate can be justified by our patients' larger prostates and previous acute urinary retention episodes. We think that the issue of preoperative catheterization may be related not only to public health and educational issues but also to cultural barriers that lead to a delayed search for medical help and, after receiving medical help, a delay in undergoing proper urological evaluation.[11]

Ahyai et al, in a meta-analysis of 27 studies (including 23 randomized controlled studies) with a total of 2,247 patients, reported an overall complication rate of 32.4%. In the consulted literature, postoperative death due to coronary disease ranges from 0.05 to 1%.[7]

Our co-morbidity rates are slightly higher than others. In comparing our rates to the recent study of 1,878 patients, we noted higher proportions of patients with hypertension [69% vs. 46.1%], diabetes (24% vs. 18.2%) and cardiac disorders (26% vs. 17%). Additionally, with a median age of 79 years, our patients were ten years older. Due in part to their younger and healthier patients.[12,13]

The relatively small number of patients included and the lack of a control group of patients less than 65 years old are known limitations of this study. It is also important to note that the study only included men who were considered to be adequate candidates for surgery after clinical evaluation. This fact may constitute a possible selection bias, as the complication rates were likely reduced because we did not perform surgical therapy in patients with more adverse clinical conditions.

Conclusion

According to the data presented in this study, complications are infrequent, and standard surgical treatments for the treatment of BPH are safe for elderly patients. No clinical variable was associated with the occurrence of complications. In our study, most patients were satisfied after surgery.

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