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Clinical Outcome of the Patients Undergoing Monopolar Transurethral Resection of Prostate for Symptomatic Benign Enlargement of Prostate

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ABSTRACT

Introduction

Benign prostatic hyperplasia (BPH) is the most common benign tumor in men. Transurethral resection of prostate (TURP) is a commonly performed urologic operation for the treatment of symptoms associated with BPH. TURP reduces lower urinary tract symptoms and also reduces the International Prostate Symptom Score (IPSS) in 94.7% cases of clinical BPH and improves quality of life in patients with BPH. The objective of this research is to analyse the clinical outcomes of patients undergoing monopolar transurethral resection of the prostate for symptomatic benign enlargement of the prostate in our center.

Methods

A Retrospective cross-sectional study was conducted at the Department of Urology COMS Teaching Hospital among the patients who underwent monopolar TURP from 2019 to 2022. Patient records were collected from hospital operation books and OPD records, and further inquiry was made via phone calls. Based on the available data we analyzed the Patient's Age, Size of the prostate, Pre and post-operative IPSS, QOL score and Qmax, Operative time and complications.

Results

A total of 167 patients underwent M – TURP during the study period. The mean age of patients who underwent TURP was 70.49 years. The average size of the prostate was 63.08 grams. The mean operating time was 60.09 minutes with a mean hospital stay of 5.99 days. The preoperative IPSS was 28.92, QOL was 4.72 and QMax was 9.27 and Post-operative mean IPSS, QOL score and Qmax was 5.38, 0.98 and 19.7 respectively with a p-value of less than 0.05.

Conclusions

Surgery is the mainstay of treatment in BPH if conservative and medical therapy fails. There are several endourological treatments available for BPH today, but monopolar TURP is still widely used in developing countries and is a standard treatment for BPH-related LUTS. Outcomes are comparable to other treatment modalities if done timely and meticulously.

Keywords: BPH; TURP; IPSS; QOL; qmax.

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INTRODUCTION

Benign prostatic hyperplasia (BPH) is the most common benign tumor in men. Autopsy studies have indicated that 50% of men in their fifth decade demonstrate pathologic evidence of BPH, and that BPH prevalence increases to 90% by the ninth decade. The symptoms associated with BPH have been classified as obstructive (hesitancy, poor stream, incomplete emptying, and dribbling) or irritative (frequency, nocturia, and urgency) Transurethral resection of prostate (TURP) is a commonly performed urologic operation for the treatment of symptoms associated with BPH. In recent years, several other treatment modalities have been proposed as an alternative to TURP for treating BPH.[1] Benign prostatic hyperplasia (BPH) is a medical condition occurring in elderly males, resulting from enlargement of prostate gland.[2] 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.[3]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.[4] According to IPSS the severity of LUTS is graded as mild, moderate and severe.[5] With the passage of time the severity of the lower urinary tract symptoms increases and causes complications like acute urinary retention if untreated.[6] The treatment of BPH varies from watchful waiting to surgical intervention. The surgical intervention is indicated after failure of medical therapy or complicated BPH.[7] Transurethral Resection of Prostate (TURP) is a gold standard surgical treatment for BPH with LUTS not responding to conservative treatment.[8] 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.[9,10]

METHODS

A retrospective cross-sectional study was conducted at the Department of Urology of the College of Medical Sciences and Teaching Hospital who underwent TURP for BPH from 15 January 2019 to 24 June 2022. Ethical approval was obtained from the Institutional Review Committee of the College of Medical Sciences (Ref No. COMSTH-IRC/2022-018). Taking the prevalence is 60% of Benign prostate hyperplasia (BPH) in men aged more than 60 years1, with a 95% confidence interval and 8% margin of error. The sample size was calculated by using the following formula: n=z2pq/e2=1.96*1.96*0.6*0.4/0.07*0.07=0.921/0.08*0.08=143. By adding a 10% non-response error, this research was conducted among 167 patients. Patients' records were collected from hospital operation books and OPD records, and further inquiry was made by phone. Patients records with incomplete documents, raised PSA, deranged renal function tests, urethral stricture disease and neurogenic bladder cases were excluded from the study. Collected data was checked for completeness and accuracy and then entered and analyzed using SPSS-20. Based on the available data we analyzed Patient Age, Size of the prostate, Pre and post-operative IPSS, QOL score and Qmax, Operative time and complications. Data were analyzed using descriptive statistical tools. In the descriptive statistics for categorical variables frequency and percentage were calculated. While for continuous variable mean, standard deviation, minimum and maximum were calculated.

RESULTS

A total of 167 patients who had indications for surgery underwent M – TURP during the study period. The mean age of patients who underwent

TURP was 70.49 years. The average size of the prostate was 63.08 grams. The mean operating time was 60.09 minutes with a mean hospital stay of 5.99 days (5-10 days) (Table 1).

Table 1. Clinico Sociodemographic characteristics of the patients.

Variables	Mean	SD	Minimum	Maximum
Age (years)	70.4	8.8	37.0	90.0
OT Duration (mins)	60	28.3	15.0	175.0
Size	63	14.2	36.0	98.0
Hospital stay	5.994	0.7071	5.0	10.0

The preoperative mean international prostate symptom score (IPSS) was 28.92, the Quality of life score (QOL) was 4.72 and the maximum flow rate (QMax) was 9.27 as illustrated in Table 2. Post-operative mean IPSS, QOL score and Qmax was 5.38, 0.98 and 19.7 respectively with a p-value of less than 0.05 (Table 2).

Table 2. Preop and post-op IPSS, QOL and Qmax.

Variables	Mean (Pre-op)	Mean (Post-op)	P value
IPSS	28.9	5.3	0.025
QOL	4.7	0.9	0.015
Qmax	9.2	19.7	0.013

Postoperative clot retention was seen in 3 (1.8%) patients, meatal stenosis in 2 (1.2%) patients, and urethral stricture in 6 (3.6%) patients (Table 3).

Table 3. Complications following Monopolar TURP.

Complication	Frequency	Percent
Anterior urethral stricture	2	1.2
Bulbar urethral stricture	4	2.4
Clot retention	3	1.8
Meatal stenosis	2	1.2
Urinary retention	2	1.2

DISCUSSION

BPH is a disease of elderly male patients, which ruins the quality of life. Patient with BPH usually presents with voiding and storage symptoms. Failure of medical management warrants surgical intervention. A few decades ago, open prostatectomy was the treatment of choice but due to the invention of endo-urological instruments minimally invasive procedures have become the standard of cure. Even though different endourological procedures exist in today's era, TURP is still considered the gold standard for BPH surgery because of its low cost, easy availability of instruments and easy learning curve. [11] In our study the mean age of patients undergoing surgery was 70.49 years. Losco et al. study concluded that advanced age is associated with long-term failure of surgery requiring catheterization however, they recommend TURP

as long as the patient is fit for surgery.[12] However, in our study none of the patients had treatment failure. The mean operative time and the size of the prostate in our study were 60.09 minutes and 63.08 grams respectively. The mean operating time in a study done by Al-Hammouri F et al. [13] was 72 minutes and the mean prostate size was 88 grams. Which showed bigger the size of the prostate longer the operating time.[13] With the development of minimal invasive surgery, the duration of hospital stay is also decreasing. In our study the mean duration of hospital stay was 5.99 days. Similar to the study done by Tela UM et al. [14] but a study done by Al-Hammouri F et. al [13] showed an average hospital stay of 2.3 ±0.25 days and most centers in Europe and USA. In our study the mean hospital stay was comparatively more because our center is a tertiary referral center and most of the patients who undergo TURP in this center come from the far regions and as a developing country, our road condition and transportation system are suboptimal, so long-distance travel after early catheter removal and discharge is not advised because it may increases risk of bleeding and urinary retention. IPSS score, Quality of life score and Maximum flow rate are commonly used tools to look for the outcome of TURP postoperatively and during follow-up of the patient. There was significant improvement in these parameters following surgery in our study. Where preoperative IPSS score, QOL score and Qmax were 28.9, 4.7, and 9.2 and Postoperative were 5.3, 0.9, and 19.7 respectively. These findings were consistent with the findings of Kumar N et.al[15] and Firas Al-Hammouri et. al[13] Postoperative clot retention and urinary retention are not always preventable despite meticulous resection and hemostasis. Three of our patients had clot retention and two had urinary retention likely due to prostatic fossa edema. Two clot retention patients were managed with flushing and continuous bladder irrigation and one patient had to undergo cystoscopy for clot evacuation despite repeated flushing and catheter change. Two patients with urinary retention were managed with a further 1-week foley catheterization. Urethral stricture is a well-known complication after TURP with the incidence ranging from 2.2-9.8%.[16] In our study two patients (1.2%) had anterior urethral stricture, four patients (2.4%) had a bulbar urethral stricture and two patients had meatal stenosis (1.2%). All of them were managed with dilatation alone. Although the result following dilatation was favourable on short-term follow-up, long-term follow-up is required to document re-stricture rate and other complications such as bladder neck stenosis and deterioration of symptoms which is lacking in our study.

CONCLUSIONS

BPH can be bothersome for some elderly patients. Surgery is the mainstay of treatment if conservative and medical therapy fails. There are several endourological treatments available for BPH today, but monopolar TURP is still widely used in developing countries and is a standard treatment for BPH-related LUTS. Outcomes are comparable to other treatment modalities if done timely and meticulously.

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Conflict of Interest: None

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