Scientific Research Publishing

Open Journal of Urology, 2025, 15(2), 27-33
https://www.scirp.org/journal/oju
ISSN Online: 2160-5629
ISSN Print: 2160-5440

Monopolar Transurethral Resection of the Prostate: Evaluation of the Results in the Urology Department of the Sino-Guinean Friendship Hospital in Conakry (Guinea)

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How to cite this paper: Sow, T.A.O., Ova, M.H., Gnammi, L.R., Bah, M.D., Diallo, T.M.O., Bah, I., Diallo, A.B. and Bah, O.R. (2025) Monopolar Transurethral Resection of the Prostate: Evaluation of the Results in the Urology Department of the Sino-Guinean Friendship Hospital in Conakry (Guinea). *Open Journal of Urology*, **15**, 27-33.
https://doi.org/10.4236/oju.2025.152004

Received: January 22, 2025
Accepted: February 23, 2025
Published: February 26, 2025

Abstract

Introduction: The therapeutic approach to benign prostatic hyperplasia (BPH) has evolved profoundly. Surgical treatment is reserved for complicated cases and the reference surgical technique is transurethral resection of the prostate (TURP). This work aims to study the epidemiological, clinical and therapeutic aspects of monopolar transurethral resection of the prostate in our department. **Materials and Methods:** We conducted a descriptive study with retrospective data collection over a 12-month period from November 1, 2023 to December 31, 2024. The urology unit, an integral part of the surgery department, of the Sino-Guinean Friendship Hospital in Conakry served as the setting for this study. It included 27 patients with benign prostatic hypertrophy treated surgically by monopolar transurethral resection and having a usable medical record. The parameters studied were epidemiological, clinics and therapeutic. **Results:** The mean age of the patients was 68.57 ± 5.7 years with extremes from 50 to 79 years. The peak frequency was observed between 70 and 79 years (48.15%). All our patients had lower urinary tract disorders, *i.e.* 100% of cases. On digital rectal examination, an increase in the volume of the prostate of benign appearance was observed in all cases. The mean prostate volume was 43.7 cc on ultrasound with extremes from 34 cc to 58 cc. The total PSA level was less than 4 ng/ml in the majority of cases. The postoperative

course was generally uncomplicated (n = 26) with removal of the urinary catheter on the second postoperative day (D2). However, one peroperative complication was observed in one patient; it was a bladder breach, leading to the passage of glycine into the peritoneum. **Conclusion:** Transurethral resection of the prostate has reduced the length of hospital stay of our patients, as well as the comorbidities associated with the treatment. The complications associated with it are rare but potentially serious. Its performance requires in-depth mastery of the endoscopic anatomy of the lower urinary tract as well as technical operative expertise.

Keywords

RTUP, Monopolar, BPH, Bladder Breach, Conakry

1. Introduction

Benign prostatic hyperplasia (BPH) is a condition characterized anatomically by an increase in prostate volume, mainly located in the transitional zone [1]. It affects around 50% of men aged 60 and almost 90% of men over 80 [2]. BPH is one of the most prevalent and costly benign neoplasms in men [3].

Prostatic adenoma, a benign tumor, impacts the urinary system without there necessarily being a direct correlation between the size of the prostate and the severity of the obstruction [1]. Obstructive prostatic hypertrophy is a leading cause of lower urinary tract symptoms in older men, affecting more than 200 million people worldwide [4].

Clinically, BPH is defined by the combination of three elements: infravesical obstruction (SVO), an increase in prostatic volume detected on physical examination, and lower urinary tract symptoms (LUTS) [5].

Therapeutic options for BPH have evolved considerably in recent years. Surgical treatment, now reserved for complicated cases, is mainly based on transurethral resection of the prostate (TURP), considered the gold standard technique [6]. Several studies on morbidity and mortality have proven the safety of this technique [2] [7]-[10]. Our work aims to study the epidemiological, clinical and therapeutic aspects of monopolar transurethral resection of the prostate in the urology department of the Sino-Guinean Friendship Hospital in Conakry, Guinea.

2. Materials and Methods

This was a descriptive study with retrospective data collection carried out over a 13-months period from November 1, 2023 to December 31, 2024. It took place within the urology unit integrated into the surgery department of the Sino-Guinean Friendship Hospital. The study involved 27 patients with benign prostatic hypertrophy treated surgically by monopolar transurethral resection. Data were collected from hospitalization records and operating room registers. The usable na-

ture of the records was determined by the presence of a complete medical observation with information on the well-documented postoperative course, the existence of an ultrasound result, a biological assessment including PSA, urine culture, and the existence of an operative report. The incomplete records were excluded. The data were collected on pre-established survey forms, entered into the software SPSS version 21.0 which was used for statistical analysis. Age, digital rectal examination data, total PSA, ultrasound result, surgical indication, results and postoperative course were the parameters studied. The Quantitative variables were described by mean and standard deviation. Qualitative variables were described with proportions. The agreement of the ethics committee of the chair was obtained. The confidentiality of the data through respect for anonymity was ensured by pre-coded numbers. The retrospective nature of the study was its main limitation.

3. Results

3.1. Age

The average age of patients at diagnosis was 68.57 years with extremes from 50 to 79 years. The peak frequency was observed between 70 and 79 years (48.15%) (Table 1).

Table 1. Distribution of patients by age group.

Age	Staff	Percentages (%)
50 - 59	2	7.41
60 - 69	12	44.44
70 - 79	13	48.15
Total	**27**	**100**

3.2. The Clinic

All patients had lower urinary tract disorders.

3.3. Rectal Examination

A digital rectal examination was performed on all our patients, revealing an enlarged prostate, which appeared benign.

3.4. PSA Values

All patients had PSA levels less than 4 ng/ml. The mean PSA was 1.9 ng/ml, with extreme values ranging from 0.2 ng/ml to 3.7 ng/ml.

3.5. Imagery

An ultrasound of the urinary tract was performed in all patients, revealing a mean prostate volume of 43.7 cc, with extreme values ranging from 34 cc to 58 cc.

However, nine of them had bilateral ureterohydronephrosis (Table 2).

Table 2. Distribution of patients according to surgical indications.

Indications	Staff	Percentages (%)
Failed removal of urinary catheter	2	5
Ureterohydronephrosis	9	19
Chronic urinary retention	21	77.77
Failure of medical treatment	4	9
Renal failure	11	23

3.6. Evolution

Twenty-six patients had uncomplicated postoperative outcomes, with removal of the urinary catheter on the second postoperative day (D2). However, an intraoperative complication was observed in one patient, in the form of a bladder breach occurring during deterioration of the resection loop, leading to passage of glycine into the peritoneum. This complication was managed by laparotomy, allowing the aspiration fluid and closure of the bladder breach. The postoperative course was uneventful, with removal of the urinary catheter on the tenth postoperative day (D10).

4. Discussion

TURP remains the gold standard treatment in the surgical management of BPH, although it is a technique that has proven its long-term effectiveness, it nevertheless remains associated with a certain number of challenges, including the occurrence of potentially serious complications in the perioperative period, to which are added the limitations of this technique, particularly those related to the patients' background. This has certainly led to the use of new technologies considered minimally invasive and less likely to cause morbidity and complications than monopolar TURP. Among these techniques is bipolar TURP, which has the advantage of reproducing the same conditions as conventional resection [11]. In monopolar TURP, in order to avoid excessive dispersion of the electrical energy used, a non-conductive hypo-osmolar fluid low in electrolyte such as glycine or mannitol is required. The main risk of this procedure is the excessive absorption of this irrigation fluid which can lead to hemodilution and hyponatremia causing TURP syndrome, the frequency of occurrence of which remains high at 10% to 15% depending on the series with a mortality rate of 0.2% to 0.8% [11].

On the other hand, with all bipolar resectors this risk is theoretically excluded since the solution used is physiological serum which is iso-osmolar [12].

The mean age in our study was 68.57 years, a result similar to that reported by Sissoko [13], who observed an average age of 69 years.

In our study, the prostate volume was less than 60 ml, a result comparable to that of the study of Abdoulaye NDIATH *et al.* [14], where 86% of patients also had a prostate volume less than 60 ml.

Surgical treatment, particularly transurethral resection of the prostate (TURP), is reserved for complicated adenomas [6]. In our study, chronic urinary retention

was the most common surgical indication, representing 37.04% of cases, or 10 patients.

This result is in agreement with the observations of Abdoulaye NDIATH *et al.* [14], who reported a rate of 76% for this same operative indication.

The main risk associated with this procedure is excessive absorption of the irrigation fluid, which can lead to hemodilution and hyponatremia, responsible for transurethral resection of the prostate (TURP) syndrome. The frequency of this complication varies between 10% and 15% depending on the series, while mortality remains low, between 0.2% and 0.8% [11]. On the other hand, with bipolar current this risk is theoretically excluded with the use of physiological serum which is iso-osmolar [12]. The postoperative course was simple in 96.29% of cases, that is, in 26 patients. However, an intraoperative complication was observed in one patient, in the form of a bladder breach that occurred during deterioration of the resection loop, leading to passage of glycine into the peritoneum. This complication was managed by a laparotomy, allowing the evacuation of the liquid and closure of the bladder breach. This incident has not been reported in any other study.

In contrast, in the other studies, the most frequently observed complication was capsular rupture. It was reported in 2 patients in the Sissoko study [13].

In monopolar resection series the transfusion rate varies between 2% and 5% [15].

5. Conclusions

Transurethral resection of the prostate (TURP) is a common practice at the Sino-Guinean Friendship Hospital. It represents a significant portion of the procedures performed in our department.

This minimally invasive technique offers many advantages, including a significant reduction in hospital stay, catheterization time and comorbidities associated with the management of this prostate pathology.

Data Availability

All data is included in the article content.

Declaration on Human Rights

The hospital consented to the use of data from patients who were consulted in the department. This study was approved by the hospital ethics committee and the principles of the Declaration of Helsinki were followed.

Conflicts of Interest

The authors declare no conflict of interest.

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