

Monopolar Transurethral Resection of Prostate in the Urology Department of the University Hospital Pr Bocar S SALL of Kati

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To cite this article:

Amadou Kassogue, Mamadou Lamine Diakite, Idrissa Sissoko, Albacaye Sember, Moussa Salifou Diallo, Daouda Sangare, Philippe Togo, Salia Coulibaly, Honore Berthe. Monopolar Transurethral Resection of Prostate in the Urology Department of the University Hospital Pr Bocar S SALL of Kati. *International Journal of Clinical Urology*. Vol. 7, No. 1, 2023, pp. 5-8. doi: 10.11648/j.ijcu.20230701.12

Received: December 1, 2022; **Accepted:** December 27, 2022; **Published:** January 31, 2023

Abstract: Introduction: The objective of this study is to evaluate the results of monopolar TURP in the urology department of the University hospital Pr Bocar Sidy Sall de Kati. Materials and methods: this was a descriptive, cross-sectional and prospective collection study carried out in the urology department of the University hospital Pr Bocar Sidy Sall de Kati. It took place over a period from January 1, 2019 to June 31, 2020, i.e. 25 months. The parameters studied were: the age of the patients, the reason for consultation, the weight of the prostate, the type of gesture, the time of the resection, the duration of hospitalization and the postoperative follow-up. The data was entered and analyzed using Word 2016 and Excel 2016 and SPSS version 21.0 software. Result: we identified 45 cases of monopolar TURP. The age group of 61-80 years was the most represented, i.e. 84.4%. Acute urinary retention was the most common reason for consultation with 31.1%. On digital rectal examination, the prostate looked benign in 66.7% of cases. Escherichia Coli was the most encountered germ, 8 patients or 17.8%. The weight of the prostate was between 30 to 45g or 46.7%. The post-voiding residual between 101ml and 200ml was the most encountered with 31.1%. TURP was the most common type of surgery, 66.7% of cases. The operative time was 45 minutes in 66.7% of cases. The postoperative course was simple in 88.9% of cases. The duration of hospitalization was 3 days in 71.1% of cases. At 3 months after the TURP, the evolution was favorable in 44 patients, i.e. 97.8%. Conclusion: transurethral resection of the prostate is the gold standard in the management of benign prostatic hyperplasia. It has become common practice in our service and is integrated into urological training with satisfactory results.

Keywords: TURP, Monopolar, Prostate

1. Introduction

Endoscopic prostate surgery is a common practice in urology. This technique, unlike in developed countries where it is old, has begun to spread in Mali and the sub-region for several years [1-3]. Transurethral resection of the prostate (TURP) is the reference treatment for benign prostatic hyperplasia (BPH) [4-6]. TURP removes prostate tissue in the transitional zone to reduce prostatic obstruction and

therefore reduce voiding disorders [3]. It has become standard practice in our service for the management of complicated BPH and is integrated into urological training. Monopolar TURP uses glycocoll as a solute which in some cases can lead to hyponatremia due to glycocoll reabsorption. This risk does not exist with bipolar TURP which uses saline. Monopolar TURP and bipolar TURP are currently widely used techniques in the surgical management of benign prostatic hyperplasia. Given the risk of hyponatremia, TURP syndrome with monopolar TURP, more and more bipolar

TURP is becoming an alternative.

The objective of this study is to evaluate the results of monopolar TURP in the urology department of the University hospital Pr Bocar Sidy Sall of Kati.

2. Materials and Methods

This was a descriptive, cross-sectional and prospective collection study carried out in the urology department of the University Pr Bocar Sidy Sall de Kati. It took place over a period from January 1, 2019 to June 31, 2020, i.e. 25 months. The study involved all patients diagnosed with complicated BPH or prostate cancer. Were included in our study, all patients hospitalized in the department during the study period for TURP. The data carriers were: the consultation registers, the operating report registers, the hospitalization registers, the medical file. The parameters studied were: the age of the patients, the reason for consultation, the weight of the prostate on ultrasound, the type of procedure, the time of resection, the duration of hospitalization and the postoperative follow-up. The data was entered and analyzed using Word 2016 and Excel 2016 and SPSS version 21.0 software.

3. Results

We identified 45 cases of monopolar TURP. The age group of 61-80 years was the most represented, i.e. 84.4% (Figure 1). Acute urinary retention was the most frequent reason for consultation with 31.1% (figure 2). Inguinal hernia repair was the most common surgical history, at 24.4%. The bladder globe was found in 37.8% of cases. On digital rectal examination, the prostate looked benign in 66.7%. The PSA level was normal in 44.4% of patients. ECBU was positive in 15 patients, i.e. 33.3%. Escherichia Coli was the most encountered germ, 8 patients or 17.8%. The weight of the prostate on ultrasound was between 30 to 45g in 46.7% of cases (Figure 3). The post-voiding residual between 101cc and 200cc was the most encountered with 31.1% (Table 1). TURP was the most common type of surgery, 66.7% of cases (table 2). Operative time was 45 min in 66.7% of cases (table 3). The postoperative course was simple in 88.9% of cases (table 4). The duration of hospitalization was 3 days in 71.1% of cases (Figure 4). The removal of the bladder catheter was performed at 3 days in 31 patients, i.e. 68.9%. At 3 months after the TURP, the evolution was favorable in 44 patients, i.e. 97.8%.

Table 1. Distribution of patients according to post-voiding residu before TURP.

Post-voiding residu (ml)	Effectifs	Percentage (%)
Less than 50	9	20,0
50-100	2	4,4
101-200	14	31,1
201-300	9	20,0
301-400	5	11,2
Oder 400	6	13,3
Total	45	100,0

The post-void residual was between 101-200 ml in 31.1%.

Table 2. Distribution of patients according to the procedure performed.

Procedure performed	Effectifs	Percentage (%)
TURP	30	66,7
TURP + pulpectomy	9	20,0
TURP + hernia repair	2	4,4
TURP + hydrocele cure	3	6,7
TURP + prostate biopsy	1	2,2
Total	45	100,0

TURP was the most performed type of gesture, i.e. 66.7%.

Table 3. Distribution of patients according to duration of TURP.

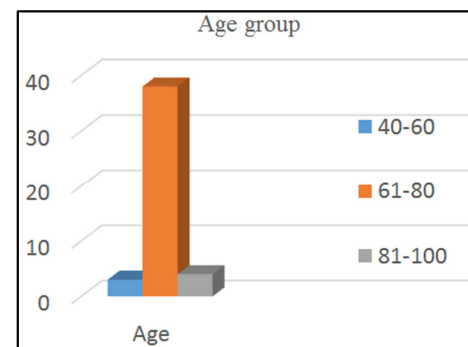
Duration of TURP	Effectifs	Percentage (%)
30 min	11	24,4
45 min	30	66,7
1 hour	4	8,9
Total	45	100,0

The operative time was 45 min in 66.7%.

Table 4. Distribution of patients according to postoperative course.

Postoperative course	Effectifs	Percentage (%)
Simple	40	88,9
Urinary retention	2	4,4
Bleeding	2	4,4
Death	1	2,2
Total	45	100,0

The postoperative course was simple in 88.9%.



The age group of 61 – 80 years represents the largest number with 84.4%.

Figure 1. Distribution of patients by age group.

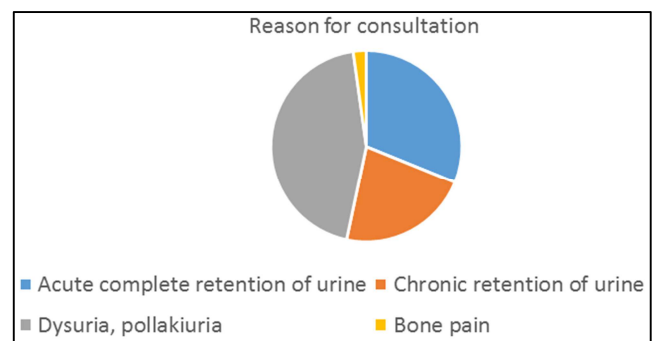
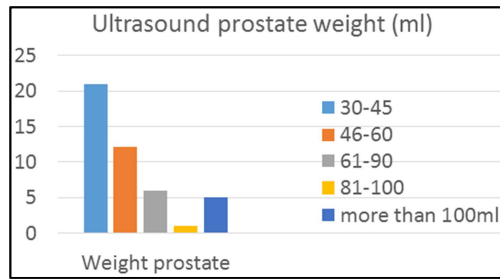


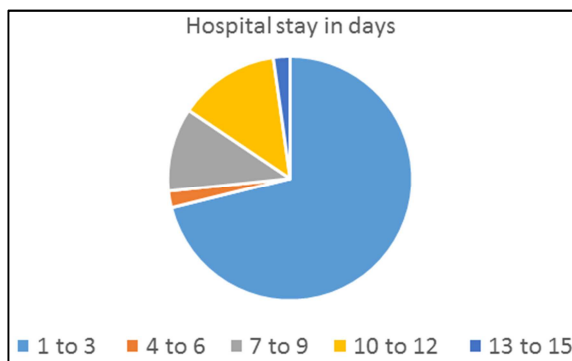
Figure 2. Distribution of patients by reason for consultation.

Complete acute retention of urine was the most common reason for consultation, at 31.1%.



Prostate weight was between 30 and 45g in 46.7%.

Figure 3. Distribution of patients according to prostate weight on ultrasound.



The duration of hospitalization was between 1 to 3 days in 71.1% of cases.

Figure 4. Distribution of patients according to length of hospital stay.

4. Discussion

We identified 45 cases of monopolar TURP. The average age of our patients was 71 years old with extremes of 61 and 80 years old. This result is similar to that of a Senegalese study by Kane [7] where the average age was 72 years and that of two Malian studies [1, 3]. Transurethral resection of the prostate (TURP) is the reference surgical treatment for benign prostatic hyperplasia, due to its age, its international distribution, and the number of cases operated on by this technique [1].

Due to material difficulties, the TURP could not take off in black Africa. In our study, 45 TURPs were performed at the University hospital Pr BSS out of a total of 282 admissions, i.e. 6.4% of surgical activities. This rate is lower than that of TURP, which constitutes 8.1% of surgical treatment in Burkina Faso [8]. Our indication is limited by the volume of the prostate because we have a monopolar resector with glyccolles as resection liquid. Too large a prostate volume would lengthen the resection time and expose the patient to a resorption of lavage fluid called TURP Syndrome. Two cases of TURP Syndrome were reported by Coulibaly M [9] during a monopolar resection of the prostate of 41 patients. In our study, we did not identify any cases of TURP Syndrome. This is not the case in the study by Diakite et al. [1, 10], where the resection is bipolar and uses saline as the resection liquid. Bipolar resection makes it possible to resect large volume prostates without the risk of TURP Syndrome.

In our series, the ultrasound estimate of prostate weight

was less than 45g in 46.7%. The operating time was 45 min in the majority of cases, i.e. 66.7%. The average duration of TURP was 37 minutes for an average weight of 56 g in the study by Diarra et al. [3]. This time is similar to that of other series: it was 40 minutes for that of Diakite [1] and 40 for that of Ghazzi [5]. This time was on the other hand much shorter than that of Kane [7] with an average duration of 56 minutes for a weight of 39g. The duration of TURP also depends on the volume of the prostate and the experience of the surgeon.

The postoperative course was simple in 88.9% of cases. We recorded 2 cases of complete bladder retention, 2 cases of hemorrhage and one case of death on day 1 postoperatively.

These results are similar to the study by Diarra A et al. [3] who reported 3 cases of complete bladder retention, and 1 case of death within 2 days of surgery and 2 cases of bleeding complications. This rate was 4.4% of cases in the study by Zango et al. [8]. Zakou ARH et al. in Senegal [2] reported a case of intraperitoneal rupture of the bladder during transurethral resection of the prostate.

Transurethral resection of the prostate by monopolar current is one of the recommended surgical treatments for benign prostatic hyperplasia. In the study by Evrard PL et al. [11], the majority of patients, 79.5%, presented grade 1 or 2 complications according to the Clavien-Dindo classification and one patient died on day 27 postoperatively. A high Charlson score and a low preoperative hemoglobin level have been identified as a risk factor for complications [11].

According to the work of Delongchamps NB [6], monopolar TURP is followed by significant morbidity in elderly patients, higher than in the general population. Electric endoscopic alternatives, bipolar vaporization, as well as bipolar resection seem to provide functional results close to those of TURP and adenectomy, as well as an advantage in terms of reduced risk of bleeding [6].

Tang Y [12], in a comparative study of monopolar and bipolar TURP indicates that bipolar TURP was significantly better in terms of Qmax outcome and reduction in the incidence of TURP syndrome and clot retention. Furthermore, no significant difference was observed in the nature of adverse events such as transfusions, retention after catheter removal and urethral complications between the two groups.

Boukhli Y and al. [13], in a study of sixty-nine patients including 38 cases of monopolar TURP and 31 of bipolar TURP, only one patient presented with hyponatremia due to reabsorption of glyccoll in the monopolar group. They found no significant difference between the two groups regarding complications or their predictors. Analysis of the data during the first three months revealed no differences between the two techniques in terms of functional results and postoperative complications and there were no predictive factors for the occurrence of complications regardless of the type of surgery. energy used in their work [13].

A work on TURP by Sinha MM and al [14], concludes that, although bipolar TURP and monopolar TURP improve urinary symptoms, bipolar TURP is associated with a lower

risk of hyponatremia, TURP syndrome and blood loss compared to monopolar TURP. There does not seem to be a significant difference in length of stay, urethral stricture, quality of life and operative time. Similarly, according to the study by Alexander CE and al. [15], bipolar TURP and monopolar TURP probably improve urologic symptoms to a similar degree. Bipolar TURP probably slightly reduces postoperative blood transfusion.

These results also corroborate with the studies of Ene C and al. [16], who observed no statistical difference between bipolar TURP and monopolar TURP in the parameters of surgery time, catheterization time, occurrence of urinary retention and IPSS scores and quality of life. In contrast, bipolar TURP was found to be superior to monopolar TURP with respect to length of hospital stay, blood transfusion rate, and TURP syndrome post TURP. Bipolar TURP represents a viable alternative, with similar efficacy to monopolar TURP but lower perioperative morbidity.

5. Conclusion

Transurethral resection of the prostate is the gold standard in the management of benign prostatic hyperplasia. It has become standard practice in our service and is integrated into urological training. Complications are rare, decreases the duration of hospitalization and the port of the probe. The post-operative follow-up is simple with satisfactory results. Our perspectives are oriented towards bipolar resection of the prostate.

6. Recommendation

At the end of this study, we recommend endoscopic surgery for benign prostatic hyperplasia. Monopolar TURP gives good results and reduces the hospital stay of patients, we encourage bipolar TRUP to avoid the risk of TRUP syndrome and to be able to treat prostates weighing more than 80 grams.

Conflicts of Interest

All the authors declare that they have no conflict of interest.

References

- [1] Diakite M. L, Berthe H. J. G, Diallo M. S, Kambou. D, Banou P, Diakite A. S, Sangaré D, Sissoko I, Tembely A. Endoscopic bipolar resection: Experience of the university hospital of Point G urology department. *Uro'Andro* 2016; 1 (6): 264-268.
- [2] Zakou ARH, Faye ST, Sarr A, Niang L, Fall PA. Intraperitoneal rupture of the bladder during transurethral resection of the prostate: about a case in Senegal. *PAMJ - Clinical Medicine* 2020; 2 (28): 1-7.
- [3] Diarra A, Kassogue A, Coulibaly MT, Cisse D, Berthe HJG, Diallo MS, Keita MM. Monopolar transurethral resection of the prostate in the urology department of the Luxembourg University Hospital of Bamako. *Revue médecine pratique* 2019; 94: 32-34.
- [4] Fourcade R O, Vallancien G. Morbidity of endoscopic resection of the prostate: A three-month prospective study. *Prog. Urol*, 2000; 10 (1): 48-52.
- [5] Ghazzi S, Ghorbel J, Ben Ali M, Dridi M, Maarouf J, Khiari R, Ben Rais N. Bipolar versus monopolar transurethral resection of the prostate: prospective randomized study. *Prog. Urol*. 2014; 24: 121-126.
- [6] Delongchamps NB, Robert G, Descazeaud A, Cornu JN, Azzouzi AR, Haillot O and al. Treatment of benign prostatic hyperplasia by electrical endoscopic techniques and upper adenectomy: literature review of the CTMH of the AFU. *Prog. Urol*. 2012; 22 (2): 73-79.
- [7] Kane R, Ndiaye A, Ogougbemy M. Transurethral resection of prostate. Experience of the Principal Hospital of Dakar, Senegal. *Méd. Afr. Noire*. 2013; 60 (3): 110-114.
- [8] Zango B, Kambou T, Sanou A. Transurethral resection of the prostate at the Sanou Souro hospital in Bobo Dioulasso: about 68 cases. *African Journal of Urology* 2002. 8 (1): 1-5.
- [9] Coulibaly M, Toure MK, Diarra A, Koita SA, Diop TH M, Mangane MI, Almeimoune A, Diallo B, Kassogue A, Coulibaly BB, Nientao O, Beye SA, Diango DM, Coulibaly Y. Epidemiological, therapeutic and prognostic aspects of the syndrome of transurethral resection of the prostate (TURP syndrome): experience of the University hospital "Luxembourg" of Bamako. *Rev Afr Anesth Med Urg* 2020; 25, (1): 77-80.
- [10] Ndiath A, Sarr A, Diaw EM, Sow O, Ndiaye M, Sine B, Traore A, Dabo O, Diop DA, Ndour NS, Ze Ondo C, Sow Y, Fall B, Diao B, Ndoeye AK. Morbi-mortality of bipolar transurethral resection of the prostate at the Urology Andrology Department of Aristide Le Dantec Hospital in Dakar. *PAMJ - Clinical Medicine* 2021; 5 (75): 1-6.
- [11] Evrard PL, Mongiat-Artus P, Desgrandchamps F. Morbi-mortality of transurethral resection of the prostate by monopolar current in patients aged 75 years and over. *Prog. Urol*. 2017; 27 (5): 312-318.
- [12] Tang Y, Li J, Pu C, Bai Y, Yuan H, Wei Q, Han P. Bipolar Transurethral Resection Versus Monopolar Transurethral Resection for Benign Prostatic Hypertrophy: A Systematic Review and Meta-Analysis. *Journal of endourology* 2014; 28 (9): 1107-1114.
- [13] Boukhelifi Y, Elhouadfi O, Khdach Y, Jendouzi O, Joaa Peti A, Berrid C and al. Monopolar prostate TURP (TURPm) between bipolar (TURPb). Functional results and analysis of predictive factors of complications. *Prog. Urol*. 2020; 30 (13): 824-825.
- [14] Sinha MM, Pietropaolo A, Hameed BMZ, Gauhar V, Somani BK. Outcomes of bipolar TURP compared to monopolar TURP: A comprehensive literature review. *Turk J Urol*. 2022; 48 (1): 1-10.
- [15] Alexander CE, Scullion MMF, Omar MI, Yuan Y, Mamoulakis C, N'Dow JM and al. Bipolar vsmonopolar transurethral resection of the prostate for lower uri-nary tract symptoms secondary to benign prostatic obstruction: Acochrane review. *Can Urol Assoc J*. 2020; 14 (12): 423-430.
- [16] Ene C, Geavlete P, Geavlete B. What's new in bipolar TURP for surgical management of BPH?. *Chirurgia* 2020; 115 (3): 307-313.