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Transvesical Prostate Adenomectomy in Mbujimayi: Frequency, Clinical Presentation, and Postoperative Outcomes.

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ABSTRACT

Purpose: Transvesical prostate adenomectomy remains a relevant option in low-resource settings despite the growing availability of minimally invasive techniques. This study aimed to assess the current practice of this procedure in Mbujimayi.

Methods: This descriptive, retrospective, multicenter study included 85 patients who underwent transvesical prostate adenomectomy between January 1, 2019, and December 31, 2024.

Results: The frequency of transvesical prostate adenomectomy was 15.2%. The mean age of the patients was 69.5± 7.1years. Most patients presented late, often after resorting to traditional treatment (69.8%), and chronic urinary retention was the main reason for consultation (56.5%). A three-way transurethral catheter alone was the most commonly used intraoperative device. The mean operative time was 69.1 ± 20.7minutes, and all patients received transfusions. Early postoperative complications were frequent (50.6%); mainly deep surgical site infections associated with vesicocutaneous fistulas (30.2%). The mean postoperative stay was 20.2 ± 12.4 days. The outcome was favorable in 96.5% of cases, and the mortality rate was 3.5%.

Conclusion: Transvesical prostatectomy is commonly performed in our setting, particularly in elderly patients who present late with chronic urinary retention. Despite the high rate of postoperative morbidity, the overall outcome remains satisfactory.

Unique contribution to theory, practice and health policy: This study provides the first local data on transvesical prostate adenomectomy and offers key insights to improve perioperative care and guide health policy in resource-limited settings such as Mbujimayi.

Keywords: *Transvesical Prostate Adenomectomy, Frequency, Clinic, Postoperative Outcomes, Mbujimayi.*

INTRODUCTION

Prostate adenomectomy consists of the surgical removal of the prostatic adenoma, corresponding to benign prostatic hyperplasia (BPH), which is a non-cancerous increase in the volume of the prostate gland [1,2]. Histopathologically, it is a hyperplastic adenomyofibroma, arising from the glandular, muscular, and connective tissue components of the transitional zone of the prostate, under the influence of testosterone [3-5].

Over the past two decades, several minimally invasive techniques have emerged, progressively reducing the need for open adenomectomy and enabling the treatment of prostatic adenomas of varying sizes, including those greater than 60 ml [6,7].

Endoscopic approaches represent the major innovation, with transurethral resection of the prostate (TURP), transurethral needle ablation (TUNA), high-intensity focused ultrasound (HIFU), and visual laser ablation of the prostate (VLAP). More recently, additional techniques have been introduced, such as urethral implants, water-based therapies (steam or high pressure), prostatic artery embolization, and holmium laser enucleation. These methods have reduced morbidity, shortened hospital stays, and, in some cases, enabled outpatient management under local anesthesia [1, 6-9].

Despite these advances, transvesical prostate adenomectomy remains the gold standard in many low-resource countries. It allows for complete anatomical removal of the adenoma and provides durable functional outcomes with a low recurrence rate [10,11]. However, this technique is associated with both early and late complications, including hemorrhage, surgical site infections, vesicocutaneous fistulas, bladder neck or urethral strictures, pressure ulcers, urinary retention or incontinence, and retrograde ejaculation [1,8,12].

In industrialized countries, transvesical prostate adenomectomy has largely been replaced by transurethral resection of the prostate (TURP), which is the second frequently performed surgical procedure in men over 65 years of age in France and the United States, after cataract surgery [10,13,14]. In Africa, however, it remains one of the most common urological procedures, particularly for large adenomas [15-17].

In our context, the unavailability of TURP – mainly due to equipment deterioration – leaves transvesical prostate adenomectomy as the only surgical option. The clinical impression of a high frequency of postoperative complications, combined with the absence of local date, motivated this study. Its main objective was to establish the current status of this technique in Mbujimayi by describing its frequency, clinical presentation, and postoperative outcomes.

METHODS

This descriptive, retrospective and multicenter study was conducted at the Bonzola General Reference Hospital and the University Clinics of Mbujimayi, located in Mbujimayi, Democratic Republic of Congo, from January 1, 2019 to December 31, 2024.

The study included all patients who underwent transvesical surgery for prostate adenoma and whose medical records contained all required variables. Incomplete records were excluded. A total of 85 records met the inclusion criteria and constituted the study sample.

The variables analyzed were:

- Sociodemographic characteristics: age, marital status, origin.
- Preoperative clinical data: history and comorbidities, IPSS score, other urinary complaints not captured by the IPSS, prior use of traditional treatment, duration of urinary symptoms, and prostate characteristics on digital rectal examination.
- Therapeutic aspects: preoperative treatment, intraoperative treatment (three-way transurethral catheter alone or combined with a suprapubic catheter and a Retzius space drainage), operative time, and postoperative medical treatment.
- Immediate postoperative course: duration of transurethral catheterization, early postoperative complications, duration of hospital stay, postoperative outcome.

Data were analyzed using IBM SPSS 20.0 software. The statistical parameters calculated included frequencies, arithmetic means, medians, and standard deviations.

Ethical considerations

This study received the approval of the Ethics Committee of the Official University of Mbujimayi (Ref: CERUOM/No. 001/2025) and was conducted in accordance with the ethical principles governing biomedical research, as defined in the Declaration of Helsinki (Version 2013).

RESULTS

1. Frequency of transvesical prostate adenomectomy

A total of 559 patients with prostate adenoma were seen in the urology departments of Bonzola Hospital and the University Clinics of Mbujimayi during the study period. Among them, 85 underwent surgical treatment – specifically transvesical prostate adenomectomy – representing a frequency of 15.2%.

2. Sociodemographic characteristics and clinical presentation of patients

2.1. Sociodemographic characteristics

The most represented age group was 60 – 69 years, accounting for 43.5% of the operated patients. The mean age was 69.5 ± 7.1 years, with extremes ranging from 54 to 84 years. Most patients were married (83.5%) and resided in the city of Mbujimayi (80.0%) (Table 1).

Table 1. Distribution of patients according to their sociodemographic characteristics

Sociodemographic characteristics	Frequency (n=85)	Percentage (%)
Age (years)		
< 60	5	5.9
60-69	37	43.5
70-79	33	38.8
≥80	10	11.8
Marital status		
Married	71	83.5
Widower	13	15.3
Divorce	1	1.2
Origin		
City of Mbujimayi	68	80.0
Outside the city of Mbujimayi	17	20.0

Mean age: 69.49 ± 7.06 years.

2.2. Clinical characteristics

More than half of the patients had no known medical history (58.8%). The majority had used traditional treatment before consultation (69.8%) and presented late (62.4%), with a mean delay of five months after urinary symptoms onset. Chronic urinary retention was the most frequent presenting complaint (56.5%). On digital rectal examination, the prostate was generally smooth, non-tender, and markedly enlarged in almost all cases (94.1%). The IPSS score could not be assessed in most cases (82.4%) (Table 2).

Table 2. Distribution of patients according to clinical characteristics

Clinical elements	Frequency (n=85)	Percentage (%)
Medical history		
None	50	58.8
Hypertension/Diabetes mellitus	28	32.9
Urinary retention and bladder catheterization	8	9.4
Asthma	8	9.4
IPSS score		
8-19	4	4.7
20-35	11	12.9
Not determined	70	82.4
Traditional treatment		
Yes	53	62.3
No	32	37.7
Duration of urinary problems (months)		
< 3	32	37.7
≥ 3	53	62.3
Complaints outside of IPSS		
Chronic urinary retention	48	56.5
Acute urinary retention	22	25.9
Hematuria	12	14.1
None	12	14.1
Prostate on rectal examination		
Markedly enlarged, smooth and non-tender	80	94.1
Slightly enlarged, smooth and non-tender	5	5.9

IPSS: International prostate symptom score.

3. Treatment Modalities and Postoperative Evolution

3.1. Therapeutic modalities

Most patients received preoperative anti-infective treatment (88.2%) and had a transurethral catheter in place before surgery (82.4%). During the procedure, the three-lumen transurethral catheter was the most frequently used drainage method (74.1%). The mean operative time was 69.1 ± 20.7 minutes. All patients received a blood transfusion intraoperatively. Postoperatively, antibiotic prophylaxis was mainly based on cephalosporins (60.0%), while non-steroidal anti-inflammatory drugs (NSAIDs) were the most commonly prescribed analgesics (74.1%) (Table 3).

Table 3. Distribution of patients according to therapeutic modalities.

Therapeutic modalities	Frequency (n=85)	Percentage (%)
Preoperative therapeutic measures		
Anti-infective treatment	75	88.2
Insertion of the transurethral urinary catheter	70	82.4
Balancing diabetes mellitus	7	8.2
Blood Transfusion	4	4.7
Treatment of kidney failure	8	9.4
None	8	9.4
Intraoperative therapeutic measures		
Three-way transurethral catheter (alone)	63	74.1
Transurethral + suprapubic catheters + drain in the Retzius space	22	25.9
Duration of surgical procedure (minutes)		
≤ 60	53	62.4
> 60	32	37.6
Family of prophylactic antibiotics used postoperatively		
Cephalosporin	51	60.0
Beta-lactam + Aminoside	13	15.3
Cephalosporin + Aminoglycoside	12	14.0
Beta-lactam	5	5.9
Sulfonamides	2	2.4
Fluoroquinolone	2	2.4
Family of analgesics used postoperatively		
Non-steroidal anti-inflammatory drug	63	74.1
Non-steroidal anti-inflammatory drug + opiates drugs	19	22.4
Opiates drugs	3	3.5

Average duration of the procedure: 69.1 ± 20.7 minutes

3.2. Post-operative evolution

In the early postoperative period, complications occurred in half of the patients (50.6%), predominantly deep surgical site infections associated with vesicocutaneous fistulas (30.2%). The mean duration of transurethral catheterization was 14 days, with extremes ranging from 8 to 64 days. The mean postoperative hospital stay was 20.2 ± 12.4 days. Overall postoperative outcomes were favorable in nearly all cases, with a cure rate of 96.5%. The mortality rate was 3.5% (Table 4).

Table 4. Distribution of patients according to postoperative progress.

Early postoperative course	Frequency (n=85)	Percentage (%)
Postoperative complications.		
Absent	42	49.4
Present	43	50.6
Deep surgical site infection + Vesicocutaneous fistula	*13*	*30.2*
Superficial surgical site infection	*11*	*25.6*
Orchiepididymitis	*10*	*23.3*
Pulmonary embolism	*4*	*9.3*
Bladder hemorrhage and clots	*2*	*4.7*
Deep surgical site infection	*2*	*4.7*
Intestinal sub-occlusion	*1*	*2.3*
Postoperative transurethral catheter placement duration (days)		
≤ 14	51	60.0
15-20	11	12.9
> 20	23	27.1
Postoperative hospital stay (days)		
<14	35	41.2
≥ 14	50	58.8
Postoperative outcome		
Healing	82	96.5
Death	3	3.5

Mean duration of transurethral catheter placement: 14 days (range: 8 to 64 days). Mean postoperative hospital stay: 20.2 ± 12.4 days.

DISCUSSION

1. Frequency of transvesical prostate adenomectomy

In our series, 85 patients underwent transvesical prostate adenomectomy, representing 15.2% of all diagnosed prostate adenomas. This frequency is lower than those reported in several

African studies. Diallo M., Maazou H., Bah I., Kone S., reported 96.99% of diagnosed prostate adenoma cases; 36.07% of urological surgical interventions; 73.89% of urological surgical activity; and 39.21% of urological surgical pathologies, respectively [10, 15, 16, 18, 19].

This discrepancy may be explained by the socio-economic vulnerability of our population, and the absence of pooled medical coverage, which limits access to surgery, whose cost remains relatively high.

2. Sociodemographic and clinical characteristics of patients

2.1. Sociodemographic characteristics

The mean age of our patients was 69.5 ± 7.1 years (range: 54 to 84 years), a result comparable to that reported by Adakal et al., who found a mean age of 69.99 ± 8.86 years (range: 41 to 100 years) [20]. These findings confirm that prostate adenoma remains a disease of the elderly men.

2.2. Clinical characteristics

In our study, 69.8% of patients had used traditional treatment before consultation, and chronic urinary retention was the main presenting complaint (56.5%). These observations are consistent with those of Koné et al., who reported that 50% of patients had used medical or traditional treatment before hospitalization, and 15% had relied exclusively on traditional therapy, although of their cohort (92.5%) presented with acute urinary retention [19]. The frequent use of traditional medicine and delayed consultation likely reflect barriers to accessing specialized care, influenced by cultural practices, economic, and geographic limitations.

3. Therapeutic modalities and postoperative course

3.1. Therapeutic modalities

In our series, the three-way transurethral catheter was the most frequently used drainage device, placed alone in 74.1% of patients. In some cases, it was combined with a suprapubic irrigation catheter and a Retzius space drain.

The operative time was most often 60 minutes or more, with a mean of 69.1 ± 20.1 minutes (range: 43 to 120 minutes). This mean is slightly lower than that reported by Coulibaly et al. (79.8 minutes, range: 50 to 180 minutes) [17], but higher than that observed by Botcho et al. (61.5 ± 12.09 minutes) [5]. These variations suggest that the operative time depends not only on surgical expertise but also on patient-specific factors such as adenoma volume, intraoperative bleeding, and technical conditions.

All patients in our study were transfused intraoperatively, a practice also reported by Mekeme et al. [21]. This likely reflects an operative context in which blood loss is frequent and hemostatic resources are limited.

In the postoperative period, cephalosporins were the most frequently prescribed antibiotics (60.0%), and non-steroidal anti-inflammatory drugs (NSAIDs) were the primary analgesic (74.12%). The widespread use of antibiotics may be explained by resource-limited surgical

environment where aseptic conditions are not always optimal, justifying reinforced prophylaxis.

3.2. Postoperative evolution

In our series, early postoperative complications occurred in 50.59% of patients. Deep surgical site infection associated with a vesicocutaneous fistula was the most frequent (30.23%). Botcho et al. reported a comparable complication rate (46.07%), dominated by abdominal wall abscesses [5], whereas Bah et al. observed a significantly lower rate (12.66%), mainly surgical site infections [10]. Diallo et al. noted a rate of 6.9%, primarily vesicocutaneous fistulas [16]. The high complication rate in our series may be related to the use of multiple drainage devices (suprapubic catheter, Retzius drain, transurethral catheter), which act as foreign bodies and increase the risk of infection.

The postoperative stay was prolonged in most cases: 58.82% of patients remained hospitalized for at least 14 days, with a mean stay of 20.18 ± 12.43 days (range: 8 to 64 days). These durations exceed those reported by Sanni (14.6 days) and Diallo (6 days) [14,16]. This difference appears directly linked to the high frequency of complications in our series. The observation by Diallo et al., who reported both a low complication rate (6.9%) and a short mean stay (6 days), supports this interpretation [16].

Overall postoperative outcomes were favorable, with a cure rate of 96.47%. The postoperative mortality rate was 3.53%, comparable to those reported by Botcho (2.63%), Sanni (2.4%) and Diallo (1.5%) [5,14,16].

CONCLUSION

Transvesical prostate adenomectomy remains a widely used procedure in our setting, where elderly patients often present late with chronic urinary retention after traditional treatments. Despite a high rate of postoperative complications – particularly deep surgical site infections and vesicocutaneous fistulas – the overall outcomes are favorable, with a high cure rate and low mortality, underscoring the continued relevance of this technique in resource limited environments and the need to improve perioperative conditions to reduce morbidity. However, the relatively small sample size (85 patients) and the absence of long term functional follow up limit the generalizability of the findings and prevent assessment of postoperative urinary outcomes such as continence, residual symptoms, and quality of life. These results align with existing knowledge showing that prostate adenoma is frequently diagnosed late in low resource settings, where transvesical adenomectomy remains the standard approach and postoperative infections are common due to delayed presentation and technical constraints.

Unique Contribution to Theory, Practice and Policy: This study provides the first local data on transvesical prostate adenomectomy in Mbujimayi, offering a precise description of patient characteristics, surgical practices, and postoperative complications. It establishes an objective foundation for improving clinical management, optimizing perioperative care, and informing healthcare policy decisions in a resource-limited setting.

Authors' contribution:

EIKB: Study conception, design and manuscript drafting. TKK: Critical revision, scientific editing and manuscript formatting. SBK, JLK, AMY, and PTT: Data collection and compilation. DKM: Data analysis and interpretation. CKM, MLN, and SAU: Manuscript review and revision. JNT: Supervision of the research process and validation of data. All authors have read and approved the final version of this manuscript.

Conflicts of interest: the authors declare that they have no conflicts of interest related to this study.

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