

## Results of a 10 Year Long Practice of Open Trans-Vesical Prostatectomy

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### Abstract

### Original Research Article

**Background:** Reports on open prostatectomy are uncommon this last decade. **Objective:** Evaluate open prostatectomy at the former Military Teaching Hospital of Cotonou. **Patients and Method:** Through medical records, we collected and analyzed data on all open prostatectomies performed at the former Military Teaching Hospital of Cotonou from January 1, 2012 to September 7, 2022, the day our government handed over the hospital to civil administration. **Results:** 74 patients underwent open prostatectomy. Their mean age was 68.4 years. Comorbidities in them were hypertension (17.6%), diabetes (2.7%), and asthma (1.4%). Surgery indication was acute urinary retention (73%), chronic urinary retention (24.3%), obstructive renal failure (6.8%), and Hemorrhage (1.4%). 18.9% patients had catheter associated preoperative infection, *Escherichia coli* (38.5%) being the most frequent causative agent. 71 (95.9%) patients had BPH, 3 (4.1%) patients had prostate cancer. The mean PSA level was 16.5ng/mL in the BPH patients and 80.9ng/mL in the prostate cancer patients. Postoperative complications were urinary fistulas (2.7%) and blood transfusion (1.4%). Postoperative inward stay was 5 to 7 days in 94.6% patients and 8 to 14 days in 5.4% patients. **Conclusion:** 74 open prostatectomies were performed with minimal postoperative complications rate, i.e., 2.7% urinary fistula and 1.4% blood transfusion.

**Keywords:** Open Prostatectomy – BPH – Urinary Retention – Obstructive Renal Failure – Hemorrhage.

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## INTRODUCTION

Open prostatectomy is a well-established procedure in the surgical treatment of BPH-induced bladder outlet obstruction [1-3]. It is a main surgery against prostatic bladder obstruction in Benin and in West Africa [4,5]. Our institution was practicing open prostatectomy for nearly two years before it launched lower urinary tract's endoscopic surgery. Still, open prostatectomy had remained a strong component of our armamentarium against benign prostatic hyperplasia (BPH). After 10 years of its practice, it was sound to evaluate what had been achieved so far.

## PATIENTS AND METHOD

We made a descriptive observational study.

### The data collection

The data collection was retrospective. We included all patients who underwent open prostatectomy. We search systematically all medical records of urological patients managed at the former Military Teaching Hospital of Cotonou from 2012 to 2022. Every patient who underwent open prostatectomy were included in the study. Were excluded those patients in

whom open prostatectomy was indicated but in whose records data were not available. We used Excel 2019 to analyze the collected data.

### The Prostatectomy Procedure

The prostatectomy procedure was a classic trans-vesical removal of prostate adenoma. Through a hypogastric vertical incision, we accessed the bladder lumen, enucleated, and removed the prostate adenoma through a peri-cervical incision of the bladder base. We achieved hemostasis by means of a running suture on the banks of the peri-cervical incision and by inflating in the adenoma bed, the balloon of a 3 ways 20 Fr Foley catheter inserted into the bladder for saline irrigation. And we closed the bladder and the abdominal walls.

### Preoperative Precautions

In patients with PSA level above 4ng/mL without any urinary infection, we performed a TRUS-guided prostate biopsy followed by a pathological examination of the cores to rule out any prostate cancer before proceeding to prostatectomy. Any urinary infection was thoroughly treated by appropriate antibiotic. To avoid postponement of the procedure due

to post-treatment re-infection, we hospitalized the patient and started antibiotic therapy 2 or 3 days before the operation day.

## RESULTS

Patients' characteristics are summarized on Table I. A prostatectomy specimen is presented on

Figure 1. We had performed prostatectomy in 74 patients. They were 49 through 90 years old. Their mean age was 68.4 years. 13 (17.6%), 2 (2.7%), 1 (1.4%), and 2 (2.7%) patients had respectively a history of hypertension, diabetes, asthma, and previous hernia repair. 54 (73%), 18 (24.3%), and 5 (6.8%) patients were admitted respectively for acute urinary retention, chronic urinary retention, and obstructive renal failure.

**Table I: Patients' characteristics**

<b>Patients</b>	
Number	74
Mean age in years ( <i>range</i> )	68.4 (49-90)
Hypertension	13 (17.6)
Diabetes	2 (2.7)
Asthma	1 (1.4)
Previous hernia repair	2 (2.7)
<b>BOO surgery indications</b>	
Acute urinary retention	54 (73)
Chronic urinary retention	18 (24.3)
Obstructive renal failure	5 (6.8)
Hemorrhage	1 (1.4)
<b>Prostate disease</b>	
Patients with BPH <i>n</i> (%)	71 (95.9)
Patients with prostate cancer <i>n</i> (%)	3 (4.1)
Preoperative PSA in ng/mL: <i>mean</i> ( <i>range</i> )	
BPH	16.5 (1.82-63.13)
Prostate cancer	80.9 (22.55-120.29)
<b>Concomitant surgery <i>n</i> (%)</b>	
Urethroplasty	1 (1.4)
Urethrotomy	1 (1.4)
Cystolithotomy	5 (7.8)
Inguinal hernia repair	6 (8.1)
<b>Complications <i>n</i> (%)</b>	
Preoperative urinary infection	14 (18.9)
Preoperative orchitis	4 (5.4)
Postoperative urinary fistula	2 (2.7)
Postoperative transfusion	1 (1.4)
<b>Number of days inward (% patients)</b>	
5 to 7	70 (94.6)
8 to 14	4 (5.4)

The prostate size was available in the records of 56 patients, ranged from 36 to 195mL with a mean of 88.9mL (Table III). Among those 56 patients, there were 3 cases of prostate cancer incidentally discovered on pathological examination of surgical specimen. The mean prostate size was respectively 87.7mL, and 110mL in the 53 BPH cases and the 3 PCa cases. The overall mean prostate size was 84.4mL. On pathological examination of prostatectomy specimens, there were 71 (95.9%) cases of BPH and 3 (4.1%) cases of PCa. The mean PSA level was 16.5 ng/mL (range: 1.82 – 63.13) in the 71 BPH patients, and 80.9 ng/mL (range: 22.55 – 120.29) in the 3 PCa patients.

The prostate size was available in the records of 56 patients and ranged from 36 to 195g with a mean of 88.9g (Table III). Among those 56 patients, there were 3

cases of prostate cancer incidentally discovered on pathological examination of surgical specimen. The mean prostate size was respectively 87.7g, and 110g in the 53 BPH and the 3 PCa cases.

Together with prostatectomy, we performed urethroplasty, internal urethrotomy, cystolithotomy, and inguinal hernia repair in respectively 1 (1.4%), 1 (1.4%), 5 (6.6%), and 6 (8.1%) patients.

Catheter-associated urinary infections necessitated antibiotic therapy in 14 patients (18.9%) before they underwent prostatectomy. There had been 2 cases of postoperative urinary fistulas which healed up under indwelling catheter and antibiotic therapy. Data on the causative agent were available in 13 patients (Table II). *Escherichia coli* was the predominant causative agent

(38.5%). There were 4 cases (30.7%) of multi-drug resistant germs, i.e., 2 cases of *Escherichia coli*, 1 case of *Klebsiella pneumoniae*, and 1 case of *Pseudomonas*

*aeruginosa*. Orchitis-epididymitis lead to the diagnosis of BPH induced chronic urinary retention in 4 patients.

The inward stay was 5 to 7 days and 8 to 14 days in 94.6% and 5.4% of the patients, respectively.



Figure 1: An open trans-vesical prostatectomy specimen from a 79-year-old man

Table II: Preoperative infection in the patients

Germ	Patients n (%)	MRG* n (%)
<i>Escherichia coli</i>	5 (38.5)	2 (15.4)
<i>Enterobacter</i>	1 (7.7)	0
<i>Klebsiella pneumoniae</i>	3 (23.1)	1 (7.7)
<i>Pseudomonas spp, aeruginosa</i>	2 (15.4)	1 (7.7)
<i>Acinetobacter bannii</i>	1 (7.7)	0
<i>Citrobacter freundii</i>	1 (7.7)	0
Total	13 (100)	4 (30.7)

\*Multi-resistant germs

Table III: Prostate size in the patients

	BPH	Prostate cancer
Patients (n)	53	3
Prostate size (mL)		
Min	36	100
Max	195	120
Mean	87,7	110
Patients with prostate median lobe (n)	13	0

## DISCUSSION

The mean age in our patients was 68.4 years, not far from 67.27 years, and 67 years reported in some regional studies [5, 6]. Other authors had reported a lower mean age of 64.6 years [7]. The most frequent comorbidity in the patients was hypertension (17.6%). Its prevalence was higher in other studies, up to 41.9% sometimes [7]. 73% of our patients had acute urinary retention. Several studies had reported acute urinary retention as the most frequent symptom leading to open prostatectomy [4-7]. That fact is not astonishing as acute

urinary retention represented 72,73% of urological emergencies [8]. Hemorrhage was present in only 1 (1.4%) patient. Nevertheless, Mbuya had reported 33.3% open prostatectomies for bleeding BPH [9]. The mean prostate size was 84.4mL. Higher mean prostate volumes had been reported such as, 114.31mL [5]. [Kpatcha], and 137,6mL [4]. Preoperative urinary infection was present in 14 (18.9%) patients, the most frequent germ was *Escherichia coli* (38.5%), and 30.7% of the causative germs were multi-antibiotic resistant. All those infections were associated indwelling Foley catheter. And it was not uncommon to encounter some patients

who had been bearing indwelling Foley catheter for months or years as Benin men are particularly frightful of prostate surgery. Yenli had also found *Escherichia coli* as the most frequent agent causing catheter associated urinary infections [10].

Pathological examination of the prostatectomy specimens revealed BPH in 71 (95.9%) patients and prostate cancer in 3 (4.1%) patients. Salako had reported 95.5% BPH, 2.4% prostate cancer, and 2.1% prostate intraepithelial neoplasia [6]. The mean PSA level was 16.5ng/mL (range: 1.82 – 63.13) in BPH patients, and 80.9ng/mL (range: 22.55 – 120.29) in prostate cancer patients. In the literature, some pre-prostatectomies mean PSA levels observed were 8.4ng/mL [6], 3.7ng/mL [4]. Postoperative complications were scarce in our patients: 1.4% case of blood transfusion, 2.7% postoperative fistulas. But surgical site infection, renal impairment and sepsis had been reported [6, 7]. We recorded no death. The tiny rate of postoperative complications (4.1%) further proves that open prostatectomy was safe. Some authors had reported 0.4% [Salako] or 6.5% [7], death rate in open prostatectomy series.

In West Africa, open prostatectomy has lost some terrain to transurethral resection of prostate or TURP [11]. But it does not seem likely to disappear. The reason is that large prostates are not always amenable to minimally invasive surgery. The second reason is that although TURP has been introduced into West Africa this last 2 or 3 decades, it has not yet reached every area and its cost may be beyond the common pocket.

## CONCLUSION

74 open prostatectomies were performed for acute urinary retention (), chronic urinary retention (), obstructive renal failure, and hemorrhage (). Postoperative complications were urinary fistula (2.7%) and blood transfusion (1.4%). Open prostatectomy was safe in Benin patients.

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