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Research Article

Sub-Saharan Aspects for the Benign Prostate Hypertrophy Postoperative Complications

Epoupa Ngalle Frantz Guy[1, *], Essomba Armel Quentin[2], Mbouché Landry Oriole[1], Mokam Fotso Victoire Thérèse[3], Mbassi Achille Aurel[3], Moby Mpah Hervé Edouard[2], Fouda Pierre Joseph[1]

[1]Faculty of Medicine and Biomedical Sciences, University of Yaoundé I, Yaoundé, Cameroon

[2]Faculty of Medicine and Pharmaceutic Sciences, University of Douala, Douala, Cameroon

[3]Department of Surgery, University of Mountain, Bagangté, Cameroon

Abstract

Background: Benign prostate hypertrophy (BPH) is mainly characterized by the increase in volume of the prostate gland. It is a frequently encountered pathology in current urological practice. The aim of the study was to evaluate various aspects of the management of postoperative complications, after BPH surgery, in a subsaharan nation. *Methodology*: This was a retrospective descriptive study carried out at the Douala General Hospital (DGH) and Douala Laquintinie Hospital (DLH) over a period of 5 years (January 1st 2016 to December 31st 2020). The results were compiled from (1st February to 31st May 2021) and data analysed using SPSS 25.0. The confidence interval was set at 95% where a p-value of less than 0.05 was considered statistically significant. *Results:* There were 151 cases in this study. The mean age was 72.3±11.8 years. Majority of the patients were within 60-69 years (27.83%). Pollakiuria, Nocturia and dysuria were the most common reasons of consultation. The medical management of BPH included alpha-blockers (55%), five alpha-reductase inhibitors (10.6%), phytotherapy (13.2%), and combination therapy (15.9%). With respect to surgical management open simple prostatectomy (OSP) was done in 65.6% of patients and Transurethral Resection of Prostate (TURP) in 34.4%. The rate of intraoperative complications was 15.9%, predominantly hemorrhage at 6.6%. Immediate and early complications acounted for 56% of complications with urinary tract infections making up the majority (22.5%). Late complications accounted for 28.8%. The incidence of intraoperative and late postoperative complications was associated with the type of surgery. This association was statistically significant with p-value of 0.013 and 0.030 for intropeative and late complications respectively. The average duration of hospitalisation was 9.69± 3.053days. *Conclusion*: BPH is common in our setting among men older than 50 years. OSP and TURP are the surgical techniques mostly done in our setting. Hemorrhage, UTI and persistence of pollakiuria were the most common complications of BPH surgeries.

Keywords

BPH, Postoperative Complications, Management, Sub-Saharan, Aspects

*Corresponding author: frantzepoupa@gmail.com (Epoupa Ngalle Frantz Guy)

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1. Introduction

BPH is a non-malignant tumour that can be defined histologically as hyperplasia of the stromal and epithelial cells of the transition zone and peri-urethral area of the prostate, leading to an increase in volume of the prostate gland [1]. This condition is common among ageing men and may cause lower urinary tract symptoms (LUTS) [2]. These symptoms impair the quality of life and can also lead to renal dysfunction in certain cases [3]. Benign prostatic hyperplasia can be managed via medical or surgical methods depending on the severity of LUTS, quality of life, presence or absence of complications. Medical treatment can be via monotherapy or combination therapy with alpha-blockers (e.g., alfuzosin, doxazosin, tamsulosin), 5-alpha reductase inhibitors (e.g., finasteride and dutasteride), and other medications (e.g., antimuscarinics) [4-6]. Surgical management of BPH includes OSP (transvesical and retropubic prostatectomy) [7, 8], transurethral holmium laser ablation of the prostate, transurethral holmium laser enucleation of the prostate, holmium laser resection of the prostate, photo selective vaporization, transurethral incision of the prostate, transurethral vaporization of the prostate and TURP [2, 9]. In Sub Sahara Africa, OSP is still the most practiced technique [10, 8, 11]. Although there has been progress in urologic surgery, surgeries for BPH still have many postoperative complications [12]. The relatively high prevalence of post-operative complications is due to the tendency to use more invasive surgical approaches [12-14]. In Cameroon there is little data on postoperative complications following surgery for BPH. The aim of this study was to describe the clinical and paraclinal profile of patients with complications that result after BPH surgery, in two reference hospitals.

2. Methodology

This was a cross-sectional descriptive study carried out at the DGH and DLH, in the Sub-Saharan country of Cameroon. Data was collected from files of patients seen over a period of 5 years, spanning the period between January 1st 2016 to December 31st 2020. The inclusion criteria were; completed files (files with sociodemographic data, clinical and therapeutic aspects of BPH management of the patients), the presence of ~~a~~ prostate ultrasounds, histopathology results and documentation of postoperative complications. From a total of 610 patients who underwent surgery, only 216 files presented with post-operative complications. At the end of the selection process 151 files were retained. Administrative clearances were obtained both from both hospitals as well as ethical approval. The severity of LUTS (lower urinary tract symptoms were assessed using IPSS (International Prostate Symptom Score). A score of 0 to 7 indicates mild symptoms, 8 to 19 indicates moderate symptoms and 20 to 35 indicates severe symptoms. The quantitative variables were described by their means, standard deviations and ranges, while the qualitative variables were described by their frequencies and percentages. The data collection and analysis were done from February 1st to May 31st, 2021 using SPSS 25.0. The confidence interval was set at 95% and a p-value of less than 0.05 was considered statistically significant.

3. Results

A total of 151 files were retained in the final analysis of this study. These retained files were distributed as follows, 33.1% were from the DLH (n=50) while 66.9% were from DGH (n=101). The mean age of patients was 72.3 ± 11.8 years with extremes of 49 and 97 years. Most patients (27.8%) were within the age group of 60-69 years (n= 42) as shown in Figure 1. The most common reasons for consultation were pollakiuria 31.8%, nocturia 23.8%, and dysuria 21.2% as shown in Table 1. In this study the PSA level ranged from 6.21 ng/ml to 51.53 ng/ml with a mean of 19.90 ± 9.03 ng/ml. About 87.4% (n= 132 cases) of patients had a PSA level >10 ng/ml while 12.6% (n=19 cases) had PSA level ranging from 4 ng/ml to 10 ng/ml. All the patients had Kidney-Ureter-Bladder and prostate ultrasounds. The mean prostate volume was 79.78 ± 23.04 ml. Using the IPSS to assess the severity of LUTS in BPH, 69.5% (105 cases) of the patients had severe symptoms, and 30.5% of the patients had moderate symptoms (46 cases). All patients had a urine culture. Most of the culture results were sterile (80.8%). The positive urine cultures revealed bacteria like *Escherichia coli* (58.6%), *Klebsiella pneumonia* (13.8%), and Staphylococcus (3.5%). Most of the patients (54, 9%) were treated with alpha-blockers, 10.9% with five alpha-reductase inhibitors, 13.2% with phytotherapy, 5.2% had no treatment and 15.8% had combination therapy, before surgical intervention. OSP (65.6%, n=99) and TURP (34.4%, n=52) were the two surgical techniques employed as shown in Table 2. Hemorrhage (6.6%, n=10) was the most common intraoperative complication (Table 3). Complications occurred in the immediate and early postoperative periods in 57.0% of operated patients. UTI (22.5%, n=34) and hematuria (11.3%, n=17) were the most common immediate and early postoperative complications as shown in Table 3. Late complications occurred in 28.8% of cases. Persistence of pollakiuria (10.6%, n=48) and erectile dysfunction (8.6%, N=11) were the most common late postoperative complications as shown in Table 3. About 32.45% (n=49) of our patients developed anemia, and 13.8% of them were transfused. Postoperative mortality was at 3.3% as shown in Table 3. There were more intropeative and late complications in open simple prostatectomy than TURP, these were statistically significant with p values of 0.013 and 0.030 respectively. The Mean duration of hospitalisation was 9.69 ± 3.053 days with extremes of 1 and 20 days. Most of the patients were hospitalised for 7-9 days (45.7%), followed by those who spent 10 to 12 days (32.4%) as shown in Table 4.

Table 1. Presenting complaints.

PRESENTING COMPLAINTS	FREQUENCY (n)	PERCENTAGE (%)
Burning sensation during micturition	25	16.6
Hematuria	25	16.6
Anuria	4	2.6
Dysuria	32	21.2
Testicular pain	3	2.0
Pollakiuria	48	31.8
Acute urine retention	24	15.9
Nocturia	36	23.8
Erectile dysfunction	11	7.3
Urinary incontinence	8	5.3
Swelling of the testis	1	0.7
Post-operative problems	2	1.3
Delayed micturition	5	3.3

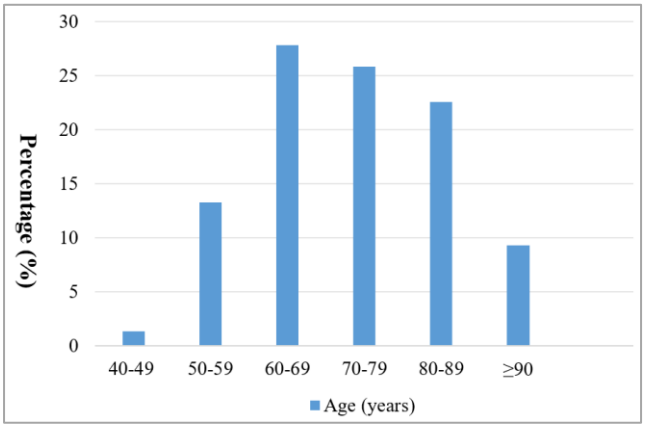

Figure 1. Age distribution.

Table 2. Patient distribution according to surgical technique.

Surgical Technique	Frequency (n)	Percentage (%)
OSP	99	65,6
TURP	52	34,4
Total	151	100

Table 3. Intraoperative, immediate, early, and late postoperative complications.

COMPLICATIONS	OP n (%)	TURP n (%)	TOTAL n (%)	P-value
Intraoperative, immediate, early complications				
Abscess at the operation site	5 (5.1)	2 (3.8)	7 (4.6)	0.013
Vesico-cutaneous fistula	3 (3.0)	0 (0.0)	3 (2.0)	
Hematoma	2 (2.0)	1 (1.9)	3 (2.0)	
Hemorrhage	7 (7.1)	3 (5.8)	10 (6.6)	
Infection at the operation site	0 (0.0)	1 (1.9)	1 (0.7)	
None	82 (82.8)	45 (86.5)	127 (84.1)	
TOTAL	99 (100.0)	52 (100.0)	151 (100.0)	
Immediate and early post operative complications				
Urinary tract infection	22 (22.2)	12 (23.1)	34 (22.5)	0.236
Hematuria	5 (5.1)	12 (23.1)	17 (11.3)	
Epididymo-orchitis	11 (11.1)	5 (9.6)	16 (10.6)	
Urine retention	1 (1.0)	1 (1.9)	2 (1.3)	
Vesico-cutaneous fistula	0 (0.0)	2 (3.8)	2 (1.3)	
Urinary incontinence	4 (4.0)	0 (0.0)	4 (2.6)	
Disordered wound healing	2 (2.0)	1 (1.9)	3 (2.0)	
Septicemia	3 (3.0)	0 (0.0)	3 (2.0)	
Death	2 (2.0)	3 (5.8)	5 (3.3)	

COMPLICATIONS	OP n (%)	TURP n (%)	TOTAL n (%)	P-value
None	49 (49.5)	16 (30.8)	65 (43.0)	
TOTAL	99 (100.0)	52 (100.0)	151 (100.0)	
Late postoperative complications				
Erectile dysfuction	12 (12.1)	1 (1.9)	13 (8.6)	0.030
Persistence of pollakiuria	13 (13.1)	3 (5.8)	16 (10.6)	
Retrograde ejaculation	4 (4.0)	0 (0.0)	4 (2.6)	
Decreased libido	0 (0.0)	1 (1.9)	1 (0.7)	
Hematuria	1 (1.0)	0 (0.0)	1(0.7)	
Chronic urine retention	2 (2.0)	1 (1.9)	3 (2.0)	
Bladder neck stenosis	2 (2.0)	5 (9.6)	7 (4.6)	
None	65 (65.7)	41 (78.8)	106 (70.2)	
TOTAL	99 (100.0)	52 (100.0)	151 (100.0)	

Table 4. Duration of hospitalization.

DURATION OF HOSPITALISATION	FREQUENCY (n)	PERCENTAGE (%)
1-3 days	5	3.3
4-6 days	2	2.6
7-9 days	69	45.7
10-12 days	49	32.4
13-15 days	21	13.9
16-18 days	4	2.6
≥ 19 days	1	0.7
TOTAL	151	100.0

Table 5. Distribution according to treatment of post-operative complications.

COMPLICATIONS		TREATMENT	FREQUENCY (n)
Intraoperative complications	Hemorrhage	Transfusion + surgical hemostasis + anti anaemic	11
	Vesico-rectal perforation	Direct closure of the wound without colostomy	1
	Surgical site infection	Drainage + aseptic dressing + medical treatment	20
	Vesicocutaneous fistula	Fistulectomy	9
Immediate and early post-operative complications	Urinary Infection tract	Antibiotic	53
	Bladder clot	Irrigation	11
	Epididymo-orchitis	Antibiotics	16
	Urinary Incontinence	Medical treatment, Reeducation, OP (For big residual prostate)	4
	Uretral stenosis	DVIU, Urethroplasty, Dilatation	3

COMPLICATIONS		TREATMENT	FREQUENCY (n)
Late Postoperative complications	Decreased libido	Phospodiestérase Inhibitors	1
	Stenosis of the bladder neck	Cervicotomy	2
	Retrograded Ejaculation	None	20

4. Discussion

In this study, most patients were within the age group of 60-69 years (27.83%) with a mean age of 72.3 ± 11.8 years. This finding is similar to that of Adakal *et al.* in Niger, where, 40.5% of patients were within the age group of 61-70 years with a mean age of 69,99 ± 8,86 years [1]. This similarity may be explained by the fact that this age group is made up of freshly retired men who still live around urban areas. They have a greater mobility, availability and independence to pursue their health, than the older geriatric groups. Death from comorbid conditions is more likely in older groups, hence they will be underrepresented. In this study, 17.2% of the patients had chronic hypertension. This finding is similar to that of Adakal *et al.* in Niger that reported that 16.5% of the patients were hypertensive [1]. The most common reason of consultation was pollakiuria (31.8%). This finding agrees with that of Adakal *et al.* in Niger who reported pollakiuria as the most common presenting complaint (31.5%) [1]. This may be because pollakiuria is amongst the main signs of lower urinary tract obstruction in symptomatic BPH [1]. In this study, 69.5% had severe symptoms. This finding differs from Fouda *et al.* in Cameroon that reported a smaller rate of 12.4% for severe symptoms [15]. This great disparity in symptom severity is due to the difference in study population. Our study population were 'de facto' patients with severe symptoms who were eventually operated. Urine cultures were positive in 29 cases (19.2%) and *Escherichia coli* was the most common bacteria isolated with a percentage of 58.6%. This finding was similar to that of Ondongo *et al.* in Congo, who reported that *Escherichia coli* was the most isolated bacteria (66%) in the urine culture [10]. The prevalence of *E. coli* urinary infection may be due the ability of the bacteria to adhere and move with its pili along the urinary tract [10]. PSA levels >10 ng/ml were recorded in 87.4% of the patients. This is slightly higher than that of Bagayo *et al.* in Senegal, which reported that 61.1% of patients had PSA levels >10 ng/ml [16]. The higher PSA levels in our study may be due to the presence of concurrent urinary tract infections, which was present in 19.2% of cases [10]. The mean prostate volume after was 79.78 ± 23.04 ml. This finding is similar to that of Adakal *et al.* in Niger, which had a mean prostate volume of 64.34 ± 39.51 ml [1]. Alpha-blockers had been used by (55%) patients before surgery. This finding is two times higher than that of Ondongo *et al.* in Congo, who reported that 25% of the patients were on alpha-blockers [10]. There is no apparent reason for this relatively higher utilisation of alpha blockers in our study. Five alpha-reductase inhibitors were used in the treatment of 10.6% of patients. This finding differs from that of Bishr *et al*. in Canada, which reported that 26.6% of the patients were treated with five alpha-reductase inhibitors [17]. The difference in results may be due to the difference in settings in both studies. Phytotherapy was treatment given in 13.2% of cases. This finding similar to that of Zubair *et al.* who reported that 15.3% of patients were treated with phytotherapeutic agents [4]. This similarity is due to the common use of plants and plant extracts as remedies in Africa. In this study, 65.6% of the surgeries carried out were open simple prostatectomy. This rate of open simple prostatectomy is close to that of Kane *et al.* in Senegal, which reported a rate of 75.3% for open surgeries [18]. These high rates stem from the limited accessibilty to endoscopic equipment and other minimally invasive equipment [10]. Postoperative mortality was at 3.3%. This finding was closer to that of Ondongo *et al.* in Congo who reported a postoperative mortality of 2.4% [10], but lower than that of Adakal *et al* who reported a mortality rate of 5.1% [1]. The reasons for these variations in mortality are not known. About 13.8% of the patients had blood transfusion. This finding agrees with Salako *et al.* in Nigeria, who reported the same value of 13.8%. Open simple prostatectomy was the predominant surgery done in our study as well as theirs and it occassionally results in significant blood loss [19]. There was no immediate or early post-operative complication in 43% of patients. This finding is higher than that of Pariser *et al.* in Congo, who reported that 28% of cases had no post-operative complications [20]. There is no plausible explanation for this difference. Concerning intraoperative complications, the rate of hemorrhage was at 6.6%. This is lower than that of Pariser *et al.* that reported hemorrhage in 24% of patients [20]. The difference may lie in the techniques used in achieving hemostasis. The main immediate and early postoperative complications recorded, were epididymo-orchitis (10.6%), post-operative urinary incontinence (2.6%), and clot retention (1.3%). This finding was similar to that of Ofoha *et al.* [2] in Nigeria, who reported epididymo-orchitis of 13.6%, post-operative urinary incontinence at 6.8%, and clot retention at 6.8% as post-operative complications. Concerning late complica-

tions, there was bladder neck stenosis at a rate of 4.6%. This finding was similar but slightly higher than that of Ofoha *et al.* in Nigeria, who reported bladder neck stenosis as a complication at 1.3% [2]. There were more introperative and late complications in open simple prostatectomy than TURP, these were statistically significant with p values of 0.013 and 0.030 respectively. This finding differs from that of Ofoha *et al.* [2] in Nigeria, who reported that there was no statistically significant association between the post-operative complications and type of surgery (OP and TURP) though there were more post-operative complications in open prostatectomy [2]. The difference in the results might be due to the difference in study settings. In our study, the mean duration of hospitalisation was 9.69 ± 3.053 days with the extremes of 1 and 20 days. This finding differs from that of Adakal *et al.* in Niger, who reported a mean duration of hospitalization of 16.17 ± 9.76 days with a range of 2 to 75 days [1].

5. Conclusion

BPH is a pathology that commonly affects men above the age of 50 in our setting. OSP and TURP are the surgical techniques mostly done in our setting. Medical treatment failed in most if not all patients that had surgery. Hemorrhage was the most common intraoperative complication. Urinary tract infection was the most common complication in the immediate and early postoperative periods. Persistence of pollakiuria was the most common late complication. Screening and sensitization programs targetting men in their 5th and 6th decades of life will decrease BPH morbidity. Moreover, a shift from OSP to endoscopic approaches will reduce the incidence of postoperative complications.

Abbreviations

BPH	Benign Prostatic Hypertrophy
DGH	Douala General Hospital
DLH	Douala Laquintinie Hospital
OSP	Open Simple Prostatectomy
TURP	Transurethral Resection of Prostate
UTI	Urinary Tract Infections
LUTS	Lower Urinary Tract Symptoms
IPSS	International Prostate Symptom Score

Informed Consent

Ethical approval was gotten from the administrative heads of the DLH and DGH respectively.

Conflicts of Interest

The authors declare no conflicts of interest.

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