

Prostatic Adenectomy and Comorbidities: Frequency and Management at the Urology Department of the Ignace Deen National Hospital in Conakry

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Abstract

Goal: To determine the type of comorbidity and highlight the complications of adenectomy and comorbidities. **Material and Methods:** This is a prospective, descriptive, cross-sectional study lasting six (6) months, from July 1, 2022 to December 31, 2022. Patients with BPH on comorbidity condition taken care of during the study period AND have agreed to participate in the study. **Results:** During our study, 49 cases of benign prostatic hypertrophy with comorbidities were collected, representing a frequency of 29%. The average age ranges for the patients were 43 - 70 years. The age group most affected was 70 to 79 years old (38.80%). Nocturnal urinary frequency was the main reason for consultation present in all our patients. The most frequent comorbidity was hypertension, *i.e.* 83.70%. The PSA rate between 4 and 10 was the most represented, *i.e.* 42.86%. The prostate volume was between 61 and 100 ml in 40.82% of patients. Histology showed that it was a benign adenomatous hypertrophy of the prostate in 85.70% and a prostatic adenomyoma in 14.29%. Trans-bladder adenectomy alone was the most performed technique, *i.e.* 49%, followed by trans urethral resection of the prostate, *i.e.* 38.80%. Retention of urine after removal of the catheter was the most observed complication, *i.e.* 12.20%. **Conclusion:** Benign prostatic hypertrophy with comorbidities constitutes a frequent association. Because their presence can affect effectiveness and lead to complications.

Keywords

Prostatic Hypertrophy, Comorbidities, Conakry University Hospital

1. Introduction

Prostatic adenomectomy is the surgical removal of the prostate adenoma [1].

From the age of 50, approximately 50% of men present with lower urinary tract symptoms (LUTS) related to benign prostatic hypertrophy (BPH). This percentage then gradually increases approximately 10% per year until it concerns around 80% of men aged 80 [2]. It constitutes the main cause of obstructive and irritative signs of the lower urinary tract, the development of which can lead, in the final stage, to renal failure [3].

Age-related changes in androgens are widely accepted as the primary factors involved in the pathogenesis of BPH. Additionally, ethnicity, type II diabetes, cholesterol, high blood pressure, and obesity have been reported as risk factors [4].

Most studies have shown that obesity increases the risk of BPH [5].

Although transurethral resection of the prostate and upper adenomectomy remain the reference techniques for the surgical treatment of benign prostatic hypertrophy, the development of microwaves and radio frequency have made it possible to propose alternatives. Urethral prostheses, more recently intraprostatic injection of ethanol and botulinum toxin, have completed the therapeutic arsenal in patients with BPH with comorbidities [6]. Comorbidities in patients with LUTS should be noted when choosing treatment, as their presence may affect long-term efficacy and/or tolerability [7].

In France, in 2015, Misrai V *et al.* reported that more than a million men aged over 50 years are treated for lower urinary tract symptoms related to benign prostatic hyperplasia [8].

In the USA, in 2009, Parsons *et al.* reported at the University of California of 26,000 participants, those with obesity (waist circumference greater than 109 cm) were 38% more likely to undergo BPH surgery than those with a non-obese waist circumference (less than 85%) [5].

In China, in 2014, Pan *et al.* reported that in Sun yet-sun memorial hospital out of 1052 patients with BPH, the prevalence of metabolic syndrome was 39.73% [4].

In Togo, in 2018, Botcho G *et al.* reported that at the Kara University Hospital out of 76 patients who underwent transvesical adenomectomy of the prostate, 72.37% had at least one comorbidity factor with a predominance of arterial hypertension in 33 cases (43.42%) [9].

Thus, the frequency of comorbidities and prostatic adenomectomy and the complications they generate motivated this study.

2. Goals

- 1) Determine the proportion of adenomectomy with comorbidity.
- 2) Determine the different types of comorbidities.
- 3) Highlight the complications of BPH with comorbidities.

3. Material and Methods

This was a prospective, descriptive, cross-sectional study lasting six (6) months,

from July 1, 2022 to December 31, 2022. Concerning patients who underwent prostatic adenomectomy associated with one or more comorbidities admitted at the urology-andrology department during the study period.

The following were used as support for carrying out this study: the register of operating reports; the patients' medical records and a pre-established investigation form.

3.1. Inclusion Criteria

Patients who underwent prostatic adenomectomy with comorbidity during the study period and who agreed to participate in the study after informed consent were included in this study.

3.2. Non-Inclusion Criteria

Patients received for pathologies other than BPH were not included in our study;

All patients admitted for BPH and comorbidity who have not undergone surgery;

All patients who underwent adenomectomy without comorbidity.

3.3. Variables

Our study variables were divided into:

Epidemiological variables: Proportion; age.

3.4. Clinical Variables

Reasons for consultation: these are the signs and/or symptoms that led the patient to see a doctor. These are: pollakiuria; burning when urinating; urgency, dysuria; the RAUV; the RCIUV; the RCCUV.

3.5. Comorbidities

Presence of one or more disease states associated with adenomectomy: Diabetes; high blood pressure (HTA); cerebrovascular accident (CVA); the Human Immunodeficiency Virus (HIV); chronic renal failure; obesity.

3.6. Physical Signs

These are the signs highlighted by the examining doctor at the consultation including: AEG, lumbar contact, bladder globe, rectal examination data, etc.

3.6.1. Paraclinical Variables

Biology: Determination of total serum PSA; Creatininemia; Cytobacteriological examination of urine (ECBU).

Imaging:

Reno-vesico-prostatic ultrasound: it allowed us to evaluate the prostate volume. The prostate volume was divided into amplitude slices of 20 cc, an average will be determined as well as the extremes.

3.6.2. Therapeutic Variable

The patients were distributed according to the therapeutic class used.

3.7. Types of Treatments

- Transvesical adenomectomy of the prostate: is the surgical removal of the adenoma of the prostate by the transvesical route.
- Trans-urethral resection of the prostate: Consists of removing the prostate adenoma in small shavings through a resector equipped with a camera under a stream of water and a cold light.
- Millin (Retro pubic adenomectomy): this is the removal of the prostate via the retro pubic route.

The Results were Favorable or unfavorable (complications).

3.8. Complications

The complications were classified as follow: Compartment hemorrhage, obstructive renal failure, parietal suppuration, urinary infection, epididymitis orchid, retention of urine after removal of the probe, vesicocutaneous fistula, death.

3.9. Ethical Considerations

- the information was collected anonymously and confidentiality was required;
- We declare no conflict of interest for the production and dissemination of the results.

4. Results

Text 1: The proportion: it is the ratio between the number of HBP with comorbidities (49) and the total number of HBP (155) in the department which is 29% (**Tables 1-4**).

Text 2: Distribution of patients according to serum creatinine value (**Table 5**).

The serum creatinine was between 0.6 - 1.4 mg/dl in 38 patients (77.56%); it was greater than 1.4 mg/dl in 11 patients (22.44%).

Mean serum creatinine: 1.4 ± 0.90 with extremes of 0.70 and 6.68 mg/dl.

Text 3: Histological diagnosis.

We had 42 cases of benign adenomatous hyperplasia of the prostate (85.71%) and 07 cases of prostatic adenomyoma (14.29%) (**Tables 6-8**).

Table 1. Distribution of patients according to age group.

Years	Effectifs	Pourcentage
50 - 59 years	6	12.2
60 - 69 years	14	28.6
70 - 79 years	19	38.8
≥80 years	10	20.4
TOTAL	49	100

Middle age: 70.43 years \pm 8.74, Extreme: 50 and 85 years.

Table 2. Breakdown of patients by reason for consultation.

Reason for consultation	Number	Percentage
Nocturnal pollakiuria	38	77.55
Diurnal pollakiuria	23	46.94
Post void volume	42	85.71
Dysuria	42	85.6
Urgenturia	33	67.3
Chronic incomplete urinary retention	23	46.9
Chronic complete urinary retention	15	30.6
Urinary burning	15	30.6
Hematuria	1	2.0

Table 3. Distribution of patients by comorbidity.

Comorbidity	Numbers	Percentage
High blood pressure	41	83.7
Diabetes	9	18.4
Chronic renal failure	3	6.1
Stroke	2	4.1
Obesity	1	2.0
HIV	1	2.0

Table 4. Distribution of patients by comorbidity association.

Association of comorbidities	Numbers	Percentage
High blood pressure + Diabetes	5	10.2
High blood pressure + stroke	2	4.08
HIV + Obesity	1	2.04

Table 5. Distribution of patients according to the germ isolated at ECBU.

ECBU result	Number	Percentage
Culture sterile	21	42.9
<i>E. coli</i>	11	22.4
<i>Staphylococcus aureus</i>	6	12.2
<i>Staphylococcus lentus</i>	4	8.2
<i>Klebsiella pneumoniae</i>	2	4.1
<i>Pneumococcus</i>	1	2.0
<i>Enterobacter aerogens</i>	1	2.0
<i>Proteus microbilis</i>	1	2.0
<i>Pseudomonas aeruginosa</i>	1	2.0
<i>Staphylococcus capitis</i>	1	2.0
TOTAL	49	100

Table 6. Distribution of patients according to surgical treatment.

Surgical treatment	Number	Percentage
Transvesical adenomectomy	24	48.98
TURP	20	40.8
Retropubic adenomectomy	5	10.2
TOTAL	49	100

Table 7. Distribution of patients according to complications.

Complications	Numbers	Percentage
Surgical site infection	6	12.2
Urine retention after catheter removal	5	10.2
Vesico-cutaneous fistula	4	8.2
Acute epididymitis	3	6.1
Urinary tract infection	2	4.1

Table 8. Correlation between comorbidities and age groups.

Comorbidities		Age groups				P
		Age ≤ 70 ans		Age > 70 ans		
		n	%	n	%	
Diabetes	Oui	7	77.8	17	42.5	0.060
	Non	2	22.2	23	57.5	
HTA	Oui	19	46.3	22	53.7	0.327
	Non	5	62.5	3	37.5	
Renal failure	Oui	2	66.7	22	47.8	0.484
	No	1	33.3	24	52.2	
HIV	Yes	0	0.0	24	50.0	0.510
	No	1	100	24	50.0	
Stroke	Yes	1	50.0	23	48.9	0.745
	No	1	50.0	24	51.1	
Obesity	Yes	1	50.0	23	48.9	0.745
	No	1	50.0	24	51.1	

5. Discussion

From July 1 to December 31, 2022, we carried out a prospective descriptive study in 49 patients hospitalized and operated for benign prostatic hypertrophy with comorbidity in the Urology-Andrology department of the Ignace Deen National

Hospital.

The high cost of the pathological examination did not allow us to have a larger number of patients.

5.1. AGE

The average age of our patients was 70.43 years \pm 8.74. The most represented age group was 70 - 79 years. This result is comparable to those of Bagayogo *et al.* [10] in Senegal in 2018 at the Aristide Le Dantec University Hospital who reported that the average age of patients was 70.9 \pm 9.2 years with a predominance in the 70 to 79 age group.

On the other hand, close to that of Botcho G *et al.* [9] in Togo in 2018 at the Kara University Hospital who reported that patients aged 60 to 69 years were the most affected with an average of 69.3 years and extremes of 42 to 98 years. The occurrence of prostate pathologies over the ages of 50 would explain this predominance.

5.2. Reasons for Consultations

The reasons for consultations were dominated by nocturnal urinary frequency followed respectively by day time urinary frequency and incomplete bladder emptying. This result is comparable to that of Robert G *et al.* [2] in France in 2018 which showed that the most frequently reported symptoms were respectively nocturnal urinary frequency (present in 48.6% of patients), the presence of terminal drops (14.2%), and the sensation of emptying incomplete bladder (13.5%). This could be explained by the fact that lower urinary tract symptoms occur more often in men in their fifties.

5.3. Comorbidities

Regarding comorbidities, high blood pressure was the most common, followed by diabetes. Our results are in the same direction as those of Botcho G *et al.* [9] in Togo in 2018 who reported in their study carried out on 73 patients, 55 patients (72.37%) had at least one comorbidity factor with a predominance of arterial hypertension (hypertension) in 33 cases (43, 42%). Other comorbidity factors were diabetes in 19 cases (25%). This relatively high hypertension rate would explain the increasing incidence of cardiovascular diseases occurring with age after fifty.

5.4. PSA Rate

Regarding the PSA level, almost half of our patients had a level between 4 and 10 ng/ml. Our study contrasts with that of Bagayogo *et al.* [10] in Senegal in 2018 who found that the PSA level was greater than 10 ng/ml in the majority of their patients, *i.e.* 61.1%. The acute and chronic retention of urine and in addition a large prostate volume encountered in most of our patients would explain the elevation in the total PSA level.

5.5. Prostatic Volume

Ultrasound was systematic in all our patients. We found that prostate volume varied from 31 ml to 223 ml with an average of 84.141. Our data is close to that of Botcho G *et al.* [9] in Togo in 2018 who showed that prostate ultrasound had found a prostate volume which varied from 35 ml to 285 ml with an average of 104.7 ml. Our ultrasound results on prostate volume suggested that the majority of our patients had a fairly high prostate volume.

5.6. ECBU Result

Compared to the isolation of *Escherichia Coli*, our study is inferior to that of Adakal O *et al.* [3] in Niger in 2021 who reported in their series that *Escherichia Coli* was isolated in 65.5% of urine cultures. Bagayogo *et al.* [10] in Senegal in 2018 showed that the cytobacteriological examination of urine (ECBU) revealed a urinary infection in half of the patients, *i.e.* 50%. *Escherichia coli* and *Cytrobacter freundii* were the most incriminated germs. It would be beneficial for these infections to benefit from early diagnosis and effective management to avoid associated infectious complications.

5.7. Support

Speaking of the management, trans-bladder adenomectomy of the prostate took first place followed by trans-urethral resection of the prostate. Our data can be superimposed on that of Debbagh A *et al.* [11] in Morocco in 2002 who showed in their series that transvesical adenomectomy was first (50.4%) followed by endoscopic resection (49.6%). The presentation of large prostate volumes and the high cost of equipment would explain this result.

5.8. Complications

In our study, complications were dominated by surgical site infection and urine retention after removal of the catheter. Our result is contrary to that of MB Diallo *et al.* [12] in Guinea in 2001 who showed in their study that the first complication was vesicocutaneous fistula 15.6%, followed by epididymitis orchitis 11.5%.

5.9. Duration of Hospitalization

In our study the average length of hospitalization was 9 days with extremes of 5 and 20 days. Our result is superimposable to that of Botcho G *et al.* [9] in Togo in 2018 who showed in their study that the average duration of hospitalization was 9 days with extremes of 5 to 21 days.

Infection of surgical wounds associated with diabetes contributed to the prolongation of the duration of hospitalization days.

5.10. Correlation between Comorbidities and Complications

Diabetes was statistically associated with the occurrence of surgical site infection

with a p-value of 0.003. This association could be explained by the fact that diabetes promotes infections.

6. Conclusions

Benign prostatic hypertrophy and comorbidities are a frequent association in urology. Comorbidities should be noted when choosing treatment, as their presence may affect long-term effectiveness and/or tolerability.

Comorbidities were dominated by high blood pressure and diabetes. The main complications were surgical site infection and bladder urine retention after removal of the urethral catheter. Diabetes was statistically associated with the occurrence of surgical site infection.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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