

Ambulatory Uretrocystoscopy in the Urology Andrology Department of Grand Mbour Hospital

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Abstract

Background: Urethrocystoscopy is a method of endoscopic exploration that allows direct visualization of the urethra and bladder for diagnosis or treatment of diseases of the lower urinary tract. **Purpose:** To determine the epidemiological profile of patients who underwent urethrocystoscopy and to present the indications and the results of this endoscopic examination. **Patients and Methods:** This is a retrospective, descriptive study of all patients who underwent outpatient urethrocystoscopy in the Urology and Andrology department of Grand Mbour hospital. The epidemiological data of the patients, the indications, the results of the endoscopic exploration and the additional procedures performed were entered and analyzed with Excel 2016. We performed descriptive statistics. **Results:** Of the 216 patients who underwent outpatient urethrocystoscopy, we counted 179 men (82.87%) and 37 women (17.13%). The sex ratio was 4.84. The mean age of the patients was 53.71 ± 18.76 years (age range 17 to 91 years). The main indications were lower urinary tract disorders (60.18%) and hematuria (28.70%). Endoscopic exploration revealed prostatic tumor in 69 patients (31.9%), 29 cases of bladder tumors (13.4%) and 19 cases of bilharzia cystitis (8.8%). The urethrocystoscopy was normal in 32 patients (14.8%). **Conclusion:** Urethrostoscopy is an endoscopic exploration examination that can be performed on an outpatient basis. Lower tract urinary disorders and hematuria were the main indications.

Keywords

Urethrocystoscopy, Outpatient, Indications, Diagnosis, Mbour

1. Introduction

Uretrocystoscopy is an intracavitary exploration under visual control of the lower urinary tract [1]. It allows direct visualization of the urethra, the prostate, the bladder neck, the bladder trigone, the ureteral orifices and the different walls of the bladder. It is one of the common procedures performed by urological surgeons. It can be performed on an outpatient basis under local anesthesia. It can be performed using a flexible or rigid cystoscope in the operating room or outpatient, in an office. There are several indications for urethrocytostcopy which are mainly hematuria and lower urinary tract symptoms (LUTS) [1] [2] [3]. Urethrocytostcopy plays an important role in the diagnosis of bladder tumors often revealed by hematuria but also in the monitoring of non-infiltrating bladder tumors. It is also an initial step in endoscopic resection of the prostate or bladder. The use of these endoscopes has transformed the diagnosis and treatment of urological diseases. In sub-Saharan Africa, particularly in Senegal, very few urological services have endoscopic equipment despite the burden of urological diseases [3] [4] [5] [6].

The use of this endoscopy in urology can cause complications which may include pain, infections and bleeding [1].

We undertook a retrospective study with the aim of evaluating the indications for urethrocytostcopy and presenting the results and complications of outpatient urethrocytostcopy in department of urology of Grand Mbour Hospital.

2. Patients and Method

This was a retrospective and descriptive study carried out in the Urology department of the Mbour hospital including all patients who underwent urethrocytostcopy from January 1st, 2018 to December 31st 2021. The data were collected from patient files kept in the archives and care registers from the endoscopy practice. All patients who underwent outpatient urethrocytostcopy and whose medical report was available during the study period were included. Patients whose procedure were incomplete and those with incomplete records were excluded.

The rigid cystoscope components used include: a monitor, a camera and a light source, a 12 and 30 degree telescope, a 22G sheath (for adults), a bridge connector. And for flexible cystoscopy, include the flexible cystoscope with camera; light source and monitor. Two towers of this equipment were available, the second serving as a backup in the event of a breakdown of one of the equipment.

The patients were all prepared to undergo an outpatient urethrocytostcopy. They received information regarding the performance of the endoscopic procedure. All patients in the study had a sterile urine culture before performing the procedure. All patients underwent a quinolone-based antibiophylaxy and then a prescription for painkillers and/or non-steroidal anti-inflammatory drugs was prescribed at the end of the examination. After installation, patients were prepared with antiseptic scrup and draped and local anesthesia was performed

with intra urethral instillation of lidocain gel. A waiting period of 15 to 30 minutes between the anesthesia and the start of the examination was observed. For patients with a permanent transurethral urinary catheter, this was removed before placing the patient on the examination table.

The examination consisted of carrying out a careful and systematic exploration of the bladder in the different areas: the trigone, the lateral walls, the dome and finally the anterior wall. This examination ended with the exploration of the bladder neck, the prostate in men and the urethra as the endoscope exits. Post-examination monitoring was systematically carried out in all our patients.

The parameters studied were age, sex, indications, type of endoscopic equipment used, results of urethroscopy, additional procedures and complications.

The generated data was entered into excel sheets and analyzed using statistical package Origin Pro system and results presented text figures and tables.

3. Results

3.1. Epidemiological Result

3.1.1. Annual Frequency of Urethroscopy

In total, we reported 216 cases of urethroscopy performed on an outpatient basis over a period of 4 years (54 cases per year). The greatest number of cases was noted in 2019 ($n = 68$). **Figure 1** illustrates the distribution of patients according to the year of procedures.

3.1.2. Gender and Type of Urethroscope Used

The mean age was 53.71 ± 18.76 years (age range: 17 to 91 years). The age group of 60 to 75 was the most represented (32.98%).

We noted a male predominance (82.87%) and the sex ratio was 4.84. The mean age of women was 53.69 ± 17.18 years and that of men was 53.71 ± 19.12 years.

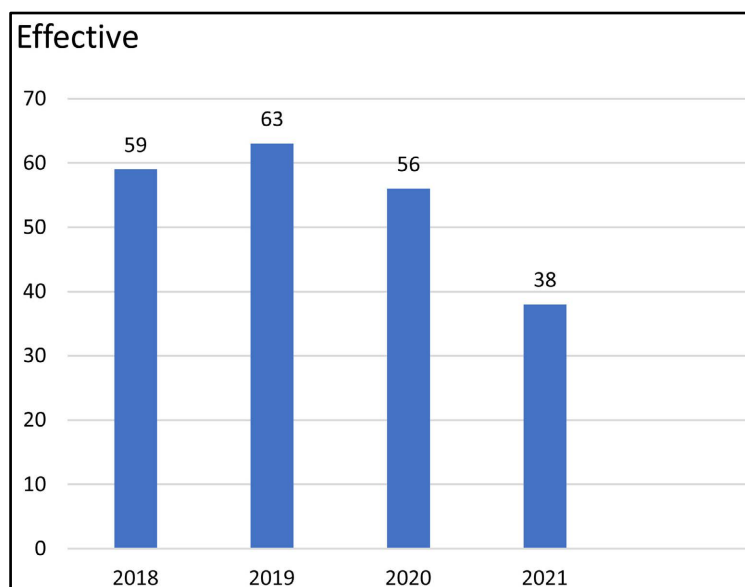


Figure 1. Distribution of patients according to year.

All urethrocytostomy procedures under local anesthesia by intraurethral instillation of 2% (100%) lidocaine gel. The majority of procedures were performed with a rigid urethrocytostomy (84.72%) while the remaining 12.96% had a flexible urethrocytostomy. Both procedures were used at 2.32% of patients.

Table 1 shows the epidemiological characteristics and the number of patients according to type of equipment used.

3.2. Indications for Urethrocytostomy

Lower urinary tract symptoms (LUTS) and hematuria were the main indications accounting respectively for 60.18% (n = 130) and 28.70% (n = 68) of patients. **Table 2** describes the distribution of patients according to the indications for urethrocytostomy.

Table 1. Distribution of patients according the gender and type of urethrocytostome used.

Variables	Effective	Frequency (%)
Mean Age = 53.71 ± 18.76 years (age range 17 to 91 years)		
Gender		
Male	179	82.87
Female	37	17.13
Type of urethrocytostome used		
Rigid cystostomy	183	84.72
Flexible cystostomy	28	12.96
Rigid cystostomy and Flexible cystostomy	5	2.32

Table 2. Clinical indications for urethrocytostomy according to age.

Variables	15 - 30 years	30 - 45 years	45 - 60 years	60 - 75 years	75 - 90 years	Total
Lower urinary tract symptoms (LUTS)	20	15	24	39	32	130
Haematuria	3	13	14	27	5	62
Bladder urinary retention	0	1	3	3	3	10
JJ Stent Removal	2	1	1	1	0	5
Assessment of gynecological tumor extension	0	0	2	1	0	3
Schistosomiasis monitoring	3	0	0	0	0	3
Assessment of urethral tumor extension	1	0	0	1	0	2
Total	29	30	44	72	40	216

In men the primary indication was LUTS with 118 cases (65.92%). The association of dysuria and pollakiuria dominated in 56 patients (47.46%) followed by 48 cases of dysuria alone (40.68%). In women, hematuria was the most frequent indication with 17 patients (45.95%) followed by LUTS in 12 patients (32.43%) and assessment of extension of a uterine tumor (8.11%).

3.3. Distribution of Urethroscopy by Findings

The examination revealed prostatic hypertrophy in 31.9% (n = 59) of cases, a bladder tumor in 13.4% (n = 29) of cases, a urethral stenosis in 13.4% (n = 29) of cases and bilharzial cystitis in 8.8% (n = 19) of cases. Urethroscopy was normal for 32 patients (14.8%). **Table 2** shows the distribution of urethroscopy results according to male and female gender. In men, the lesions found were prostatic hypertrophy in 69 patients (38.55%), urethral strictures in 29 patients (16.2%), bilharzial cystitis in 16 patients (8.9%). and bladder tumors in 14 patients (7.9%), while in women bladder tumors were diagnosed in 15 patients (40.54%) followed by schistosomiasis lesions in 3 patients (8.11%) and struggle bladder (8.11%). **Table 3** describes the distribution of patients by urethroscopy findings and gender.

Among the 130 indications for LUTS, the diagnosis established at urethroscopy was a prostate tumor in 58 patients, urethral stenosis in 22 patients and bilharzial cystitis in 8 patients (**Figure 2**).

Out of 62 cases indicating hematuria, the diagnosis established at urethroscopy was bladder tumor in 27 cases (43.5%), prostate tumors in 10 cases (16.12%), cystopathy lesions (in 10 cases (16.12%), bilharzial cystitis in 8 cases

Table 3. Distribution by urethroscopy findings and gender.

Variables	Males	Females	Total
Prostate tumor	69	-	69
Urethral stenosis	29	-	29
Bilharzial cystitis	16	3	19
Bladder tumor	14	15	29
Nonspecific cystitis	9	2	11
Wrestling bladder	5	3	8
Bladder lithiasis	5	1	6
Bladder neck disease	4	1	5
Hypertrophy of the Montanum verus	4	-	4
Invasion of the bladder from a cervical tumor	-	1	1
Urethral tumor	0	1	1
Normal Findings	23	11	34

(12.90%), bladder lithiasis in 1 case (1.6%) and urethral tumor in 1 case (1.6%). **Figure 3** distribution of diagnoses obtained at urethrocytostcopy according to the indication of hematuria.

Three patients (1.38%) underwent biopsy of the bladder tumor and we performed 3 JJ catheter ablations. Three patients (1.38%) had hematuria that resolved spontaneously before 24 hours after performing urethrocytostcopy.

4. Discussion

4.1. Epidemiology

During the study period, we reported 216 cases of urethrocytostcopy performed in our department of urology. This number was smaller than that of Takure *et al.* [2] who reported 599 patients over a period of 5 years and Jalloh *et al.* [3] who

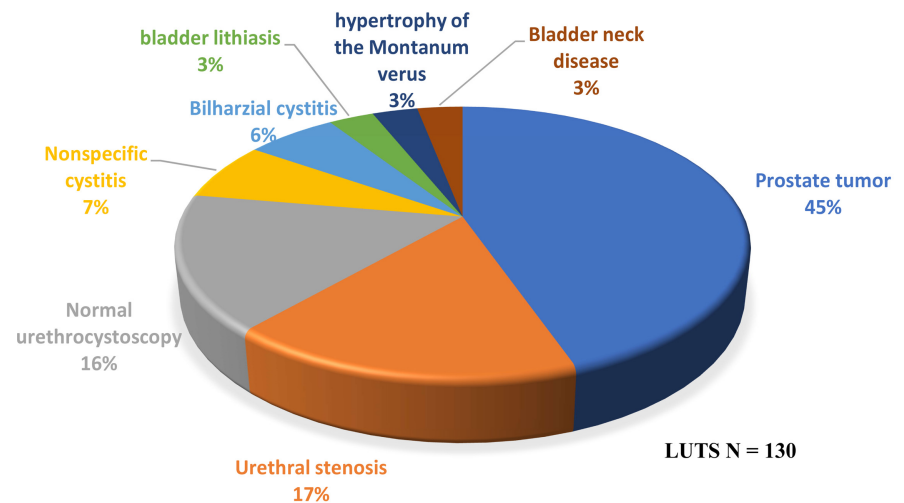


Figure 2. Distribution of diagnoses obtained at urethrocytostcopy according to the indication of LUTS.

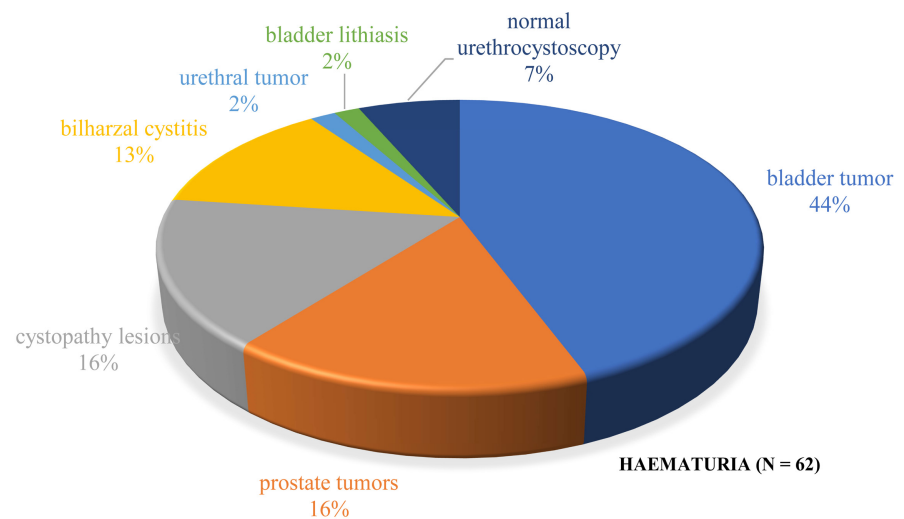


Figure 3. Distribution of diagnoses obtained at urethrocytostcopy according to the indication of hematuria.

reported 655 cases over a period of 5 years. On the other hand, it was greater than that of Ouattara *et al.* [4] who performed 165 urethroscopies over a period of 4 years. This difference is explained by the fact that our urology department is the only one in the Mbour department and the third in the Thiès region, in Senegal. Urethroscopy is also performed in these hospitals.

The highest number of cases was reported during the years 2018 and 2019 with 27.31% and 29.17% respectively compared to 17.59% for the year 2021. This drop in activity is partly due to the Covid-19 pandemic.

In our series the average age was 53.71 ± 18.76 years. This average age is similar to that of Takure *et al.* [2] who reported an average age of 52.1 years. In the studies of Ouattara *et al.* [4], in Benin and Jalloh *et al.* [3] in Senegal, the mean age was 47.29 ± 16.80 years and 47.44 years respectively. This variability in average ages would be linked to the indication for urethroscopy due to the fact that subjects over 50 years of age often present with LUTS. In fact, patients aged 60 to 75 were more numerous and were predominantly men.

We noted a male predominance with a sex ratio (M/F) of 4.84. This predominance is clearer for Popoola *et al.* [7] who reported a ratio of 36 men for 3 women. It is less accentuated for Jalloh *et al.* [3] with a sex ratio of 1.60 and for Sow *et al.* [5] the sex ratio was 1.49.

4.2. The Indications

Lower urinary tract symptoms (LUTS) and hematuria were the main indications constituting 60.8% and 28.70% of our cohort, respectively. This trend was observed by the majority of African and European series where urethroscopy is systematically performed as a first-line examination for hematuria [3] [5] [6] [8].

In men, the main indications were lower urinary tract symptoms (LUTS) with 65.92% unlike in women where the main indications included haematuria (45.94%). These results are in agreement with those of Takure *et al.* [2] who reported hematuria as an indication in the group of women where it accounted for 47.8% of cases ($n = 57$). In the series of Jalloh *et al.* [3], carried out in Senegal, haematuria was the most frequent indication 28.13%, followed by lower urinary tract urinary disorders 23.61%. For Jalloh *et al.* [3] the diagnosis of extension of cervical tumors represented the first indication in women with 59 patients (29.9%). In men, urinary disorders linked to prostate pathology were the first indication. The findings are similar to the reports from other studies across West Africa [3] [5] [6] [8].

4.3. Urethroscopy Findings

Urethroscopy is an examination which contributes to the initial diagnosis of tumor, inflammation and other stenosing urethro-cervico-prostatic conditions by allowing a direct vision of urethra, the prostate and endocavitary lesions. It also contributes to the diagnosis of extension of pelvic tumors to the

bladder and/or urethra. In our series, prostatic hypertrophy was the most common lesion (31.9%) followed by urethral strictures (13.4%) and bladder tumors (13.4%).

In men, we noted 14 cases (7.9%) of bladder tumor while in women, bladder tumors came first with 15 patients (40.54%) followed by bilharzial lesions with 3 patients (8.3%) and the features of bladder outlet obstruction in the same proportions. On the other hand, in the study by Jalloh *et al.* [3] bladder tumors were the most frequent lesions, observed in 135 cases (18.2%), followed by prostatic hypertrophy in 92 cases (12.4%). The high rate of bladder tumors in our regions could be explained by the prevalence of urogenital bilharziasis and smoking explaining the high frequency of hematuria.

We reported schistosomiasis associated cystitis lesions. For Ndour *et al.* [9], schistosomiasis lesions were reported in 47.3% cases. This confirms the high prevalence of urogenital bilharziasis in our regions.

Cystoscopy contributes to the monitoring of tumor recurrence after transurethral bladder resections of bladder tumors (TURBT) [3] [8]. During our study period, we did not have any patients to monitor because none of them had benefited from TURBT.

4.4. Associated Procedures

Three patients (1.39%) with bladder tumors underwent tumor biopsy. In cases of invasive tumor occupying almost the entire bladder, tumor biopsy remains indicated. Sow *et al.* [5] reported bladder biopsy indicated for 2.6% of bladder tumors. During cystoscopies, double JJ stent can be removed.

4.5. Complications

In the literature, some authors [5] [9] [10] [11] have reported complications and incidents after performing an urethroscopy. Ouatarra *et al.* [4] reported 4% of complications while Ndour *et al.* [9] noted a single infectious complication; hence the need to train urologists in the practice of endoscopy and to prepare patients before the procedure [10].

Sow *et al.* [5] reported a higher proportion of pain in men (63%) compared to women (41%). Flexible cystoscopy considerably reduces pain compared to rigid cystoscopy [5] [7]. Some authors prescribe a urine culture before performing urethroscopy in order to avoid the spread of a possible infection [3] [5].

Our work, as preliminary as it may be, has some limitations because it should be able to:

- assess pain tolerance using a simple binary questionnaire or other,
- and even carry out a cost-effectiveness analysis for the possible performance of single-use urethroscopy.

5. Conclusion

Urethroscopy is an endoscopic examination that allows the diagnosis of

urethro-cervico-prostatic pathologies. It must be carried out as first intention, on an outpatient basis, for any hematuria and obstructive urinary disorders of the lower urinary tract.

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Contributions of the Authors

Each of the co-authors read the text beforehand and their orientations and amendments were taken into account in this work.

Declaration of Interests

The authors declare that they have no conflict interest for this article.

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