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Original Research Article

Lower Urinary Tract Obstructions in Men: Epidemiological, Aetiological and Therapeutic Aspects in the Urology Department of the Gavardo Hospital

Ongoiba, S[1*], Malle, K[2], Berthe, A[3], Sissoko, I[4], Sissoko, B[4], Kone, O[5], Kanthe, D[5], Fomba, D[5], Diarra, T[5], Diarra, S[5], Samaké, B[6], Keita, M[6], Singuepiré, A[6], Yoroté, A[7], Ouattara, Y[7], Kone, M[8], Sogoba, S[9], Berthe, H[9], Diakité, M. L[9]

[1]Urologist, Gavardo Hospital Bamako, Mali
[2]Direction Régionale de la Sante de Ségou, Mali
[3]Commune I Reference Health Centre Bamako, Mali
[4]Kati University Hospital, Mali
[5]Markala Reference Health Centre, Mali
[6]Nianankoro Fomba Hospital in Ségou, Mali
[7]Commune V Health Centre, Mali
[8]Mopti Hospital, Mali
[9]Point G University Hospital, Mali

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Abstract: This is a 48-month prospective descriptive study of male patients hospitalised for BAU obstruction in our urology department at the Gavardo Hospital in Bamako. At the end of the study, 1230 cases were counted. Over a 12-month period from 01 January 2020 to 31 December 2023, we recorded 1,230 patients, including five hundred and fifty-four cases (554cases) of TBAU in our department. The average age of our patients was 51.6 years, and the age group most affected was 66-76 years. Among the pathologies identified, 148 cases of prostate adenoma ranked first in our urology department's surgical activity, with a frequency of 12.03%, followed by urinary lithiasis with 8.78% over a period of 48 months. During the same period, we recorded 74 cases of cancer confirmed by anatomo-histopathological examination, with a frequency of 6.03%. ***Conclusion***: Lower urinary tract disorders are polymorphous and vary according to age. Their mechanism is not unequivocal; the disorders are either primitive due to alteration in the function of the bladder muscle known as the detrusor, of myogenic or neurogenic origin, or secondary to a sub-bladder lesion.

Keywords: Obstruction of the lower urinary tract; urology department at Gavardo Hospital, Bamako.

INTRODUCTION

Lower urinary tract obstruction is defined as a set of morphological and functional signs resulting from an obstacle to the flow of urine during urination in men. The lower urinary tract can be the target of multiple pathologies leading to ubiquitous urinary dysfunctions and symptoms. Whether it involves damage to the detrusor itself, the peripheral somatic or autonomic nervous system, or the central nervous system, the multiplicity of possible lesion sites makes the interpretation and study of the physiopathology of mictional disorders, in general, complex.

This obstruction is characterised urodynamically by the combination of an increase in detrusor pressure and a decrease in urine flow. It is usually diagnosed by simultaneous study of urine flow and detrusor pressure.

In most cases, this is dysuria or acute retention of urine, which are two entities of different values that make up the obstructive syndrome of the lower urinary tract.

The aetiologies involved are prostatic hypertrophy, urethral stricture lithiasis, bladder lithiasis and congenital malformations.

In Mali, subvesical obstruction is one of the most frequent reasons for consulting a urologist.

***Corresponding Author:** Ongoiba, S
Urologist, Gavardo Hospital Bamako, Mali

Ouattara *et al*., reported a frequency of 80.9% for the reason for consultation.

A study carried out by the Association Nationale de Formation Urologique Continue (ANFUC) [10] on a panel of 159 patients found that 55% of their patients presented with dysuria. Furthermore, a study of lithiasis of the lower urinary tract carried out in Guinea found a rate of 44% of dysuria by Bah *et al*., [57].

This rate was 68.2% in a study of acute urine retention at the Hubert Koutoukou Maga University Hospital in Cotonou *by* Diakité Ml et al., [58].

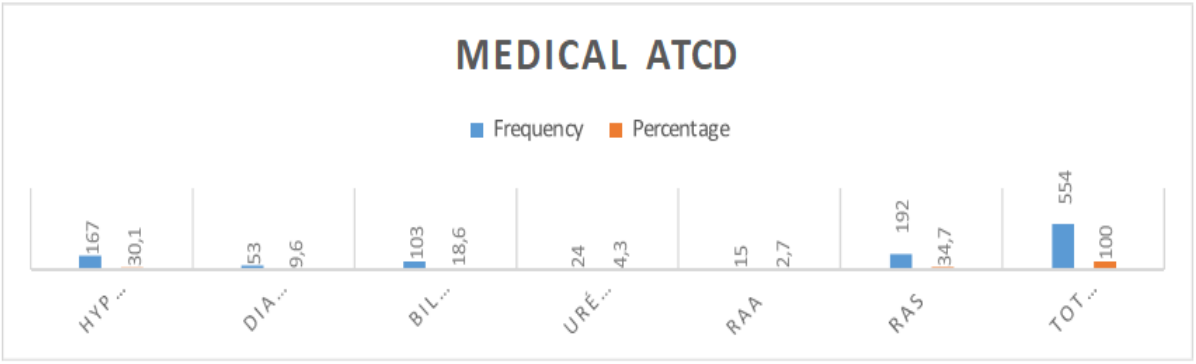
A study carried out on prostate adenomas in the hospital of Ségou Koné et al [41] estimated the frequency of dysuria at 71.5%.

Similar studies have been carried out on obstructions of the lower apparatus in men; our study proposes to use our diagnostic resources to determine the frequency of these obstructive disorders in the urology department of the Point G University Hospital, to list their different aetiologies in men and to evaluate our treatment.

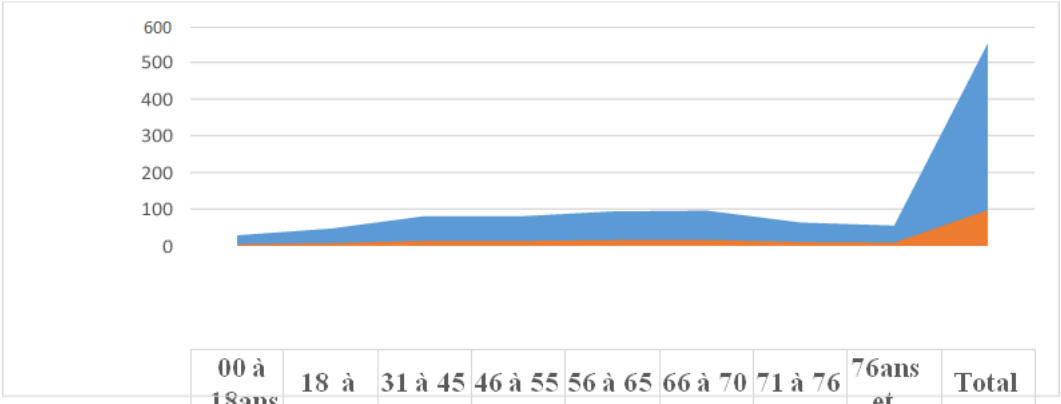
RESULT

Table I: Patient frequencies by type of pathology

Pathology	Frequency	Percentage
Prostate adenoma	148	12,03
Adenocarcinoma of the prostate gland	74	06,03
Bladder tumour	64	05,20
Narrowing of the urethra	62	05,04
Urinary lithiasis	108	08,78
Vesico-vaginal fistula (VVF)	94	07,64
Hydrocele/ Hernia	14	01,14
Kidney tumour	32	02,60
Pyo nephrosis	22	01,79
Trauma to the lower urinary tract	6	00,48
Gangrene of fournier	12	00,98
Bladder extrophy	1	00,08
Testicular tumour	6	00,48
Pyelocecal junction syndrome	20	01,63
varicocele	14	01,14
Posterior urethral valve	8	00,65
Endoscopic resection	31	02,52
Other	514	41,78
Total	**1230**	**100**

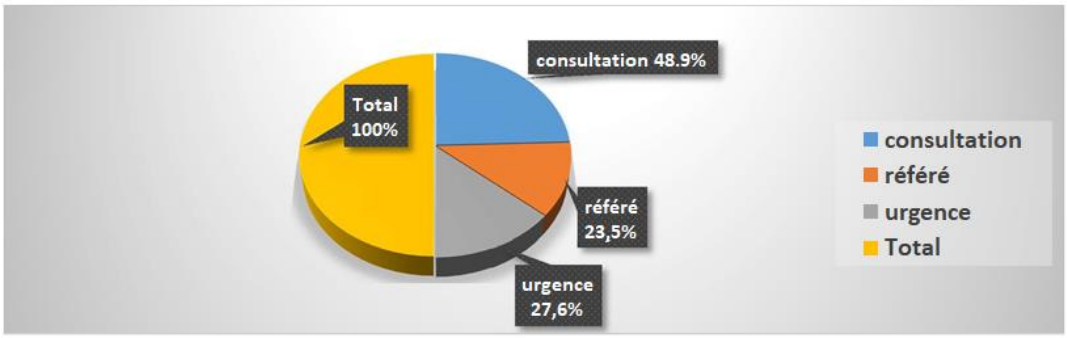


Graph 1: Breakdown of patients by medical history



	00 à 18ans	18 à 30	31 à 45	46 à 55	56 à 65	66 à 70	71 à 76	76ans et plus	Total
Frequency	30	48	82	81	95	97	65	56	554
Percentage	5,4	8,7	14,8	14,6	17,1	17,5	11,8	10,1	100

Graph 2: Breakdown of patients by age



Graph 3: Breakdown of patients by mode of recruitment

Table 2: Breakdown of patients by reason for consultation

Reason for consultation	Frequency	Percentage
RCU	147	26,5
hypogastric dx	8	01,4
dysuria	228	41,2
Haematuria	42	07,6
urinary urgency	44	07,9
urinary incontinence	9	01,6
pollakiuria	14	02,6
RAU	62	11,2
Total	554	100

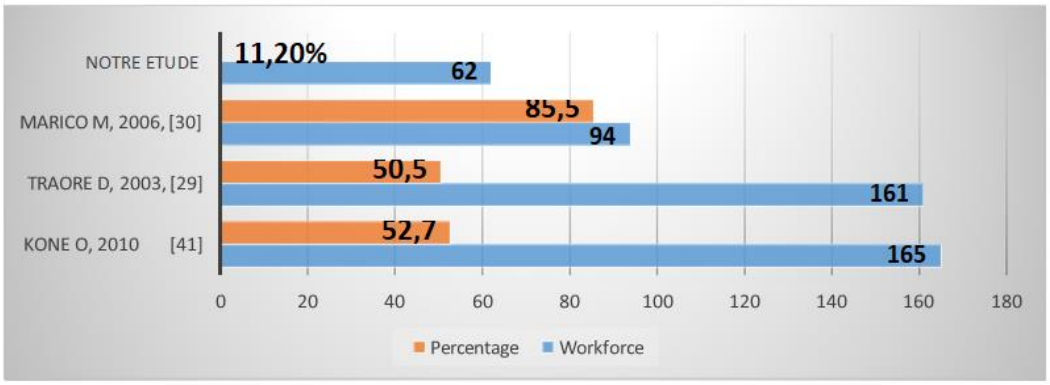


Chart 4: Frequency of UOR according to authors

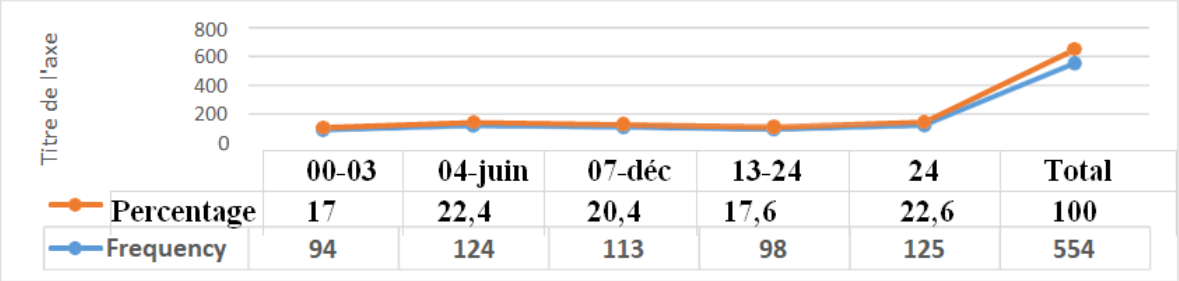
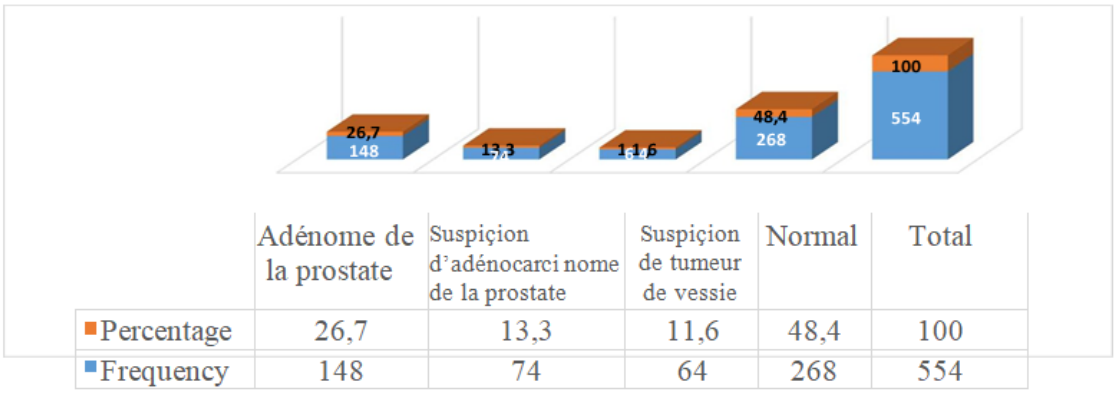


Chart 5: Breakdown of patients by delay in consultation

Table 3: Distribution of patients by urogenital examination

Urogenital examination	Frequency	Percentage
peri-urethral gangue	8	2,95
perineal fistula	3	1,11
perineo-scrotal fistula	3	1,11
hydrocele	15	5,54
epidydimo-testicular cyst	4	1,48
orchi-epidydimite	12	4,42
urethral meatus stenosis	1	0,37



Graph 6: Distribution of patients by digital rectal examination (DRE)

Table 4: Distribution of patients by PSA level

PSA	Frequency	Percentage
High	65	32,83%
Normal	133	67,17%
Total	**198**	**100,0%**

Table 5: Distribution of patients by ECBU result

ECBU	Frequency	Percentage
Urinary tract infection	193	34,8
Sterile	361	65,2
Total	554	100

Table 6: Distribution of patients according to UCR result

UCR	Frequency	Percentage
prostatic hypertrophy	11	10,2
Lithiasis embedded in the urethra	3	02,8
bladder lithiasis	6	05,6
urethral stricture	68	63
Sclerosis of the bladder neck	12	11
posterior urethral valve	8	07,4
Total	**108**	**100**

Table 7: Distribution of patients according to cystoscopy results

CYSTOSCOPY	Frequency	Percentage
Bleeding BPH	36	23,7
bladder lithiasis	15	09,9
urethral stricture	14	09,2
sclerosis of the neck of the bladder	13	08,5
bladder tumour	74	48,7
Total	**152**	**100**

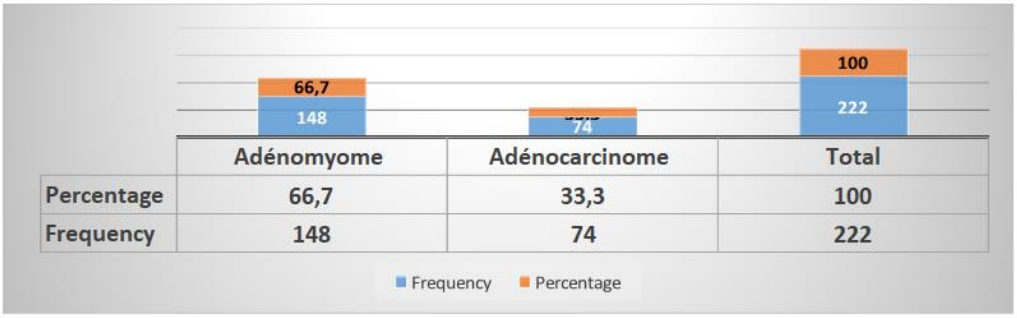


Chart 7: Pathology results

Table 8: According to results

Results	Frequency	Percentage
not satisfied	16	02,9
satisfied	538	97,1
Total	554	100

Table 9: Distribution of patients according to surgical treatment received

Surgical treatment	Frequency	Percentage
end-to-end anastomosis	62	11,2
cervicotomy	128	22,1
Cystolithotomy	7	01,3
retrograde dilatation	36	09,4
Prostatic effusion	14	02,5
cervico-prostatic incision	4	00,7
pulpectomy	15	02,7
RTUP	200	36,1
stripping	8	01,4
UIE	17	03,1
Uretrolithotomy	3	00,5
Uretroplasty	60	10
Total	554	100

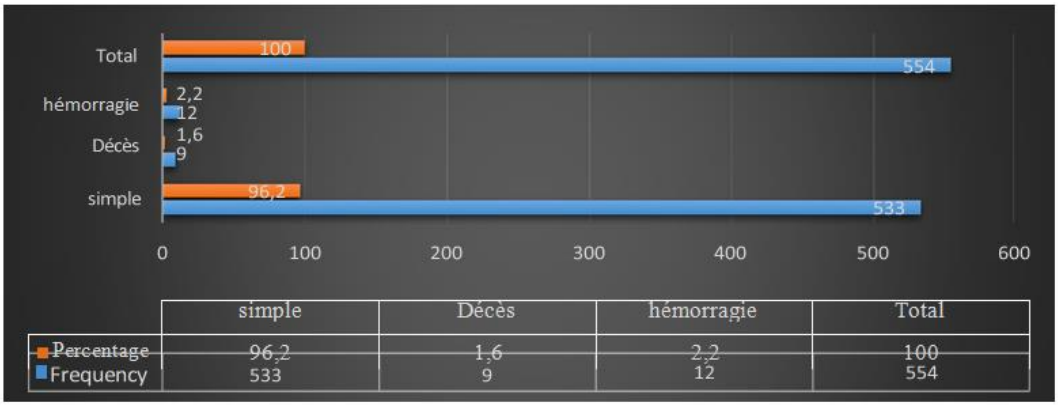


Chart 8: By immediate complications

Table 10: Distribution of patients according to secondary complications

Secondary complications	Frequency	Percentage
no	504	91
vesico-cutaneous fistula	13	02,3
sclerosis of the prostate gland	12	02,2
Parietal suppuration	25	04,5
Total	554	100

Table 11: Distribution of patients according to late complications

Late Complications	frequency	Percentage
No	516	93,1
Erectile dysfunction	3	00,5
dysuria	23	04,2
urinary incontinence	10	01,8
Sclerosis of the lodge	2	00,3
Total	554	100

COMMENTS AND DISCUSSIONS

This is a 48-month prospective descriptive study of male patients hospitalised for BAU obstruction in our urology department at the end of the study, 1230 cases were counted.

Over a period of 12 months from 01 January 2020 to 31 December 2023, we recorded 1,230 patients, including five hundred and fifty-four cases (554cases) of TBAU in our department. The pathologies recorded were 148 cases of prostate adenoma, which ranked first in our urology department's surgical activity with a frequency of 12.03%, followed by urinary lithiasis with 8.78% over a period of 48 months.

During the same period, we recorded 74 cases of cancer confirmed by anatomo-histopathological examination, with a frequency of 6.03%.

In a study carried out on prostate adenoma at Ségou hospital by Guisse *et al*., who recorded 100 cases of adenomectomy in 15 months, found a frequency of 19.7%.

Prostate adenoma still ranks 1st in the department's surgical activity. In France Debre B *et al*., [2] have pointed out that the ageing of the population and the performance of screening and diagnostic methods explain the increase in the frequency of prostate tumours.

2.1. Age of patients:

Prostate tumours are common in mature adult men. In our series, the average age of our patients was 51.6 years, and the age group most affected was 66-76 years.

We found the same results in the studies carried out by Marico M [3] at Sikasso Hospital (Mali).

The average age (71.5 years) in the series by Koblavi [4] at the CHU de Cocody in Ab idjan (Côte D'Ivoire) is slightly higher than in our series.

Nonetheless, prostate adenoma remains the pathology of the elderly, with a frequency that increases with age.

In the course of our study, the majority of our patients (48.9%) were seen in an ordinary consultation (271 cases), 23.5% of our patients were referred (130 cases) and 27.6% (153 cases) were seen as emergencies. As shown by the studies carried out by BA M.

This could be because disorders of the lower urinary tract are a pathology that requires treatment in a specialised setting and a good referral at the right time.

Lower urinary tract disorders were frequent: 41.2% (228) consulted for dysuria, 26.6% (147) for complete retention of urine, 11.2% (62) for acute retention of urine, 7.9% (44) for urinary urgency, 7.6% (42) for haematuria, 2.6% (14) for pollakiuria; 1.6% (9) for urinary incontinence.

According to a study carried out by the Association Nationale de Formation Urologique Continue (ANFUC) [10] on a panel of 159 patients, 87% had nocturnal pollakiuria (frequent urination) and 55% dysuria, which could be explained by the small size of their study.

A number of scientific studies show that dysuria and AUR remain the main symptoms of lower urinary tract disorders [6].

The results of this study are consistent with those of a recent American study [6] of 115 men with BPH, 63% of whom complained mainly of obstructive signs.

In the course of our survey, however, we noted that irritative signs (urinary urgency and burning) were also present with significant frequency.

Table 12: Frequency of UAR according to authors

Authors	Workforce	Percentage
KONE O 2021, [8]	165	52,7
TRAORE D, 20019, [7]	161	50,5
MARICO M, 2017, [0]	94	85,5
OUR STUDY	62	11,2%

As shown by reference studies carried out in Sikasso [30] and Bamako [29, 41], UTR alone accounts for 52.1% of the symptoms considered most disabling by patients. This is a medical emergency caused by problems emptying the bladder due to complete compression of the urethra. This result can be explained by the fact that these patients consult us late.

The time taken to consult a doctor varied considerably: 17% (94 patients) consulted a doctor between 0 and 3 months after the onset of mictional disorders, 22.4% (124 patients) between 4 and 6 months, 20.4% (113) between 7 and 12 months. 17.6% (98) between 13 and 24 months, 22.6% (125) more than 24 months endured the problems for more than 24 months.

The reasons for this delay lie both in the embarrassment they feel about broaching the subject with doctors, and in their great passivity towards symptoms that they come to regard as inevitable, as an inescapable and normal manifestation of old age.

***Rectal examination:**

The rectal examination (palpation of the prostate through the rectum) is used to assess the volume of the gland, whether its contours are clear or irregular, whether its surface is regular or irregular, whether its consistency is firm, elastic or hard, whether there is pain and the state of the rectal ampulla.

Far from taking the place of pathological anatomical examination, RT is a valuable aid and enabled the diagnosis of BPH to be made in 26.7% (148), prostate adenocarcinoma in 13.3% (74) and suspected bladder tumour in 11.6% (4). These results are in line with those of Waligora J [49] who also states that BPH is the most common prostate tumour.

Anatomopathology confirmed 90.9% BPH compared with 89.7% diagnosed by RT.

We can say that the digital rectal exam can be considered a high-performance examination if it is applied correctly.

The teaching of the RT technique should therefore become a primary objective for the screening and diagnosis of prostate tumours.

However, it is not easy to distinguish chronic prostatitis from BPH when the two conditions are associated. An elevated level of prostate-specific antigen (PSA) combined with a digital rectal examination (DRE) indicates suspected prostate cancer in men aged 50 and over, confirmed by anatomopathology of the surgical specimen.

Thus, 32.83% (65) of the 198 patients who underwent this biological examination, which is specific to prostate tissue, were high.

Non-invasive ultrasound, which costs less, has become the benchmark examination for diagnosing disorders of the lower urinary tract.

In our study, 26.7% (148) of cases of BPH had a homogeneous structure compared with 13.3% (74) of cases of prostatic hypertrophy with a heterogeneous structure. Our results are in line with those of Utzmann O *et al*., [42] who found all these characteristics.

In all cases, the role of ultrasound, like that of RT, is to suggest the diagnosis.

Retrograde and mictional urethrocystography of hypertrophy

Retrograde micturition urethrocystography (RMUC) is useful for determining the size and location of a urethral obstruction, detecting vesico-ureteral reflux and measuring any post-micturition residue. Thus, 108 of our patients underwent this examination, of whom 63% (68) were diagnosed with urethral stricture, 11% (12) with sclerosis of the bladder neck and 10.2% and 11 with prostatic hypertrophy.

Adenomyoma was the most frequent histological type (66.7%) of cases, found in varying proportions compared with previous studies carried out in Benin [1] and Mali [10].

Table 13: Pathology results by author

Authors	Adenomyoma	Adenocarcinoma
KONE, O [8]	90,9	9,10
AKINDES OLC [9]	89,	10,9
BOLEZOGOLA, [10]	94,2	5,8
OUR STUDY	**66,7**	**33,3**

The aim of the treatment was above all to improve patient comfort, and only then to prevent complications, with as few undesirable effects as possible.

Patients' therapeutic expectations were essentially represented by the prescription of medical treatment, additional tests or both.

In general, surgical treatment is only recommended when drug treatments fail to improve the condition, and symptoms persist and cause discomfort to the patient.

In the literature, from the age of 60 onwards, between 10% and 30% of patients will undergo surgical treatment to reduce the difficulty of urination caused by an enlarged prostate. The median subumbilical route was used in all our patients.

Haemostasis using a catheter with an inflated balloon in the prostatic cavity + an X-stitch on the two posterior commissures was carried out in 100% of cases in our patients, compared with 49.5% in the others.

All our patients received a 5-day course of antibiotics adapted to the antibiogram of the postoperative ECBU. The number of dressings used depended on the progress of the wound.

The advantage of surgical treatment is the significant reduction in symptoms. On the other hand, there is a risk of temporary or permanent complications.

Follow-up was straightforward in 96.2% (533) of cases. 12 patients (2.2%) suffered complications such as bladder haemorrhage with clot formation.

Postoperative vesico-cutaneous fistula was found in 2.3% (13) of patients; the occurrence of this complication was due to parietal superinfection resulting in suture loosening. Parietal suppuration was found in 25 patients, i.e. 4.5% of cases.

A study carried out by Bolezogola F [10] revealed 73 cases of parietal suppuration in 760 patients, i.e. 9.6% of cases.

Although our frequency is relatively low compared with previous studies, certain habits continue to contribute to postoperative infection, such as aseptic conditions in the operating theatre (few materials for an extensive programme) and working conditions in the hospital ward (few dressing materials).

Despite the diversity of pathologies of the lower urinary tract, we recorded a mortality rate of 1.6% (9), including 3 cases of death at 72 hours post-operatively following strokes of haemorrhagic origin.

3 patients died between 5^{ième} and 7^{ième} days post-op as a result of pulmonary embolism, despite the doses of anticoagulants administered 12 hours after the operation.

Three (3) others died around the 8th and 11th day after the operation as a result of heart disease known to their parents and monitored by the cardiology department.

In the literature, the death rate varies from 0.5% to 3%, with an age-related increase [3].

Treatment failure is defined as a combined criterion combining death, acute urinary retention, significant post-void residual, permanent incontinence and sexual impotence, all of which are risks of surgical treatment [6].

In our series, urinary incontinence was found in 10 patients (1.8%), persistent dysuria in 4.2% [23] and erectile dysfunction in 0.5% (3).

In the literature, permanent incontinence is reported in 0.7 to 14% of cases [6]. The rate of permanent impotence varies from 2 to 40% [6].

CONCLUSION

Lower urinary tract disorders are polymorphous and vary according to age. Their mechanism is not unequivocal; the disorders are either primitive due to alteration in the function of the bladder muscle known as the detrusor, of myogenic or neurogenic origin, or secondary to a sub-bladder lesion. The aetiologies are unknown. The most common symptoms are dysuria and urine retention, which may progress to renal failure. We encountered delays in consultations, and patients with precarious socio- economic conditions.

A urodynamic assessment is extremely useful before proposing a disobstruction procedure for a patient with lower urinary tract disorders whose associated pathologies are likely to modify their vesico-sphincter behaviour, as it can modify the therapeutic decision.

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