

# Epidemiological Aspect and Evaluation of the Management of Urologic Emergencies at the Urology Unit of Labe Regional Hospital

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## Abstract

**Aim:** To contribute to improving the management of urological emergencies at Labé Regional Hospital. **Patients and Method:** This was a dynamic, descriptive study lasting six months from July 1 to December 31, 2017. **Results:** Urological emergencies represented 45.14% (n = 218) of all admissions to the urology unit. The mean age of our patients was 56.60 years with extremes of fifteen days and 93 years. The 71 - 80 age group was the most represented with 28.03% (n = 61) followed by 61 - 70 years with 24.31% (n = 53). Our patients' activities were dominated by agriculture, with 35.77% (n = 88), and the city center was most affected by urological emergencies, with 39.44% of cases (n = 86). 70.18% (n = 153) of our patients had bladder retention on admission, and 53.21% (n = 116) underwent urethral catheterization, including 3 women. The etiology of bladder retention in these 3 women was dominated by two cases of bladder lithiasis and one case of neurological bladder. **Conclusion:** The management of urological emergencies requires specific material and human resources. Their knowledge will enable us to better understand this problem and could serve as a basis for a broad reflection on the organization of the management of urological emergencies in our region.

## Keywords

Urological Emergencies, Epidemiology, Labé Regional Hospital

## 1. Introduction

Urological emergencies are critical situations or suffering that require immediate

and appropriate care.

They account for a significant proportion of consultations and hospitalizations in emergency departments [1].

In France, there are an average of five emergency urology consultations a day, and emergency hospitalization accounts for 8% of hospital admissions [2].

In sub-Saharan Africa, the inadequate equipment of most emergency services and the lack of qualified nursing staff in peripheral areas, combined with epidemiological contexts marked by endemo-epidemic diseases, have led health authorities to prioritize preventive medicine and put curative medicine on the back burner. The management of urological emergencies is still in its infancy. Real emergency services only exist in large hospitals [3].

A study carried out in Mauritania by Ould Tfeil Y. *et al.* [4] in 2009 reported 1200 urological emergencies, 31% of which were hospitalized in the urology department of the Nouackchott national hospital. Fifty-three percent (53%) of these urological emergencies were dominated by bladder retention, with urogenital infections accounting for 16.8% of urological emergencies. Emergency placement of a cystocatheter was the most frequently performed emergency procedure (59.7%).

In Togo, Tengue K. *et al.* [5] in 2017 reported 442 urological emergencies over 3 years. Acute retention of vesical urine accounted for 64% of cases, with infectious pathologies taking second place in 22.2% of cases. Urethral and suprapubic catheterization were the most common emergency procedures, respectively 58.8% and 41.2%.

In a study of 508 patients carried out by Diabate I *et al.* in Louga, the hospital incidence rate was 15.80% for all urological consultations in the department, and 6.52% for all emergencies received in the emergency department [1]. The only study carried out in Guinea, Diallo A. B. *et al.* in 2009 on medical-surgical emergencies in the urology department, reported 22% of all urological emergency admissions, dominated by UVR (73.9%). Therapeutically, urethral catheterization and suprapubic catheterization were the most frequently performed emergency procedures (55.25% and 24.14% respectively) [6]. The aim of this study was to contribute to improving the management of urological emergencies at Labé Regional Hospital.

## 2. Patients and Methods

This was a retrospective, descriptive-type study lasting six months from July 1 to December 31, 2017. We included in this study, all patients received and treated in emergencies for urogenital affections with all clinical, paraclinical and therapeutical data in the emergency department and the urology unit of the regional hospital of Labé. This is the only urology unit in mid-Guinea, with an estimated 30-minute turnaround time. This urology unit covers five prefectures and the urban center of Labé. We did not include the hospital's other non-urological emergencies. The variables studied were epidemiological (frequency, age, sex,

origin, profession), clinical (history, terrain, reasons for consultation and pathologies diagnosed) and therapeutic (patient management and outcome). We proceeded to an exhaustive recruitment of all the files of the patients received for the urological urgencies during the period of study, the data were collected using a form of pre-established survey. Data analysis was performed using Epi.info 7.2 statistical software.

The number of patients who met the selection criteria constituted our sample size.

Under-reporting of urological emergencies, lack of emergency care kits and unavailability of emergency medical imaging were the main difficulties encountered in this study.

### 3. Results

The Urological emergencies accounted for 45.14% of all admissions to the department (**Figure 1**), or 218/483 patients seen during our study period. The mean age of our patients was 56.60 years, with extremes of 15 days and 93 years. The 71 - 80 age group was the most represented with 28.03% (n = 61), followed by the 61 - 70 age group with 24.31% (n = 53) (**Table 1**). Thirty-nine percent of our patients (**Figure 2**) lived in the urban center of Labé, where the urology unit of the middle Guinean region is located. The other urological emergencies were referred by other health facilities in the administrative region, which comprises 05 prefectures. In terms of occupation, farmers were the most represented, at 35.78% (n = 78), followed by shopkeepers and workers at 24.77% and 18.35% respectively (**Table 2**). Urinary bladder retention was the most common urological emergency in our patients, accounting for 70.18% of cases (n = 153), followed by urogenital infections in 16.05% (n = 35) of cases (**Table 3**). Urogenital trauma accounted for 3.67% (n = 8) of cases, half of which were urethral trauma (n = 4), followed by external genital trauma (n = 4) (**Table 3**). In the emergency department, 97.25% had received early treatment within 30 minutes of admission, and 78.44% (n = 171) had been admitted for observation within 24 hours of emergency treatment. Hematuria with vesical caittotage was observed in 08 cases, and management consisted in placing an indwelling transurethral vesical catheter with a vesical irrigation system (**Table 3**). Three cases of hematuria had benefited from etiological treatment, and the other hematuric patients were referred to CHU Ignace Deen for further management.

Urethral trauma associated with massive uretrorrhage, surgical cystostomy was performed in the operating room with the urology unit's on-call team.

A case of trauma to the urethra occurred in the context of polytrauma associated with a pelvic fracture. Prostatic tumors (benign hyertrophy and prostate cancer) were the main cause of urine retention, accounting for 43.78% of cases, followed by prolonged use of a transurethral bladder catheter with calcification in 22.82% of cases (**Table 4**). Transurethral bladder catheterization was performed most frequently in emergencies, accounting for 53.21% of cases (n = 116), and 21.55% of patients had undergone minimal cystostomy (**Table 5**). We

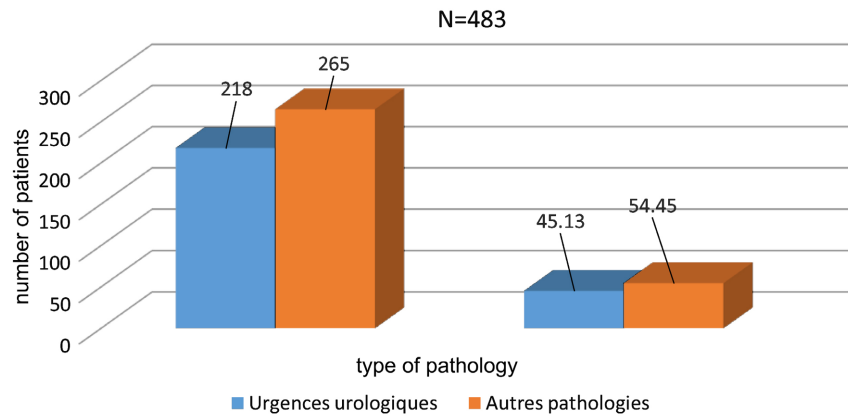


Figure 1. Distribution of patients by type of reception.

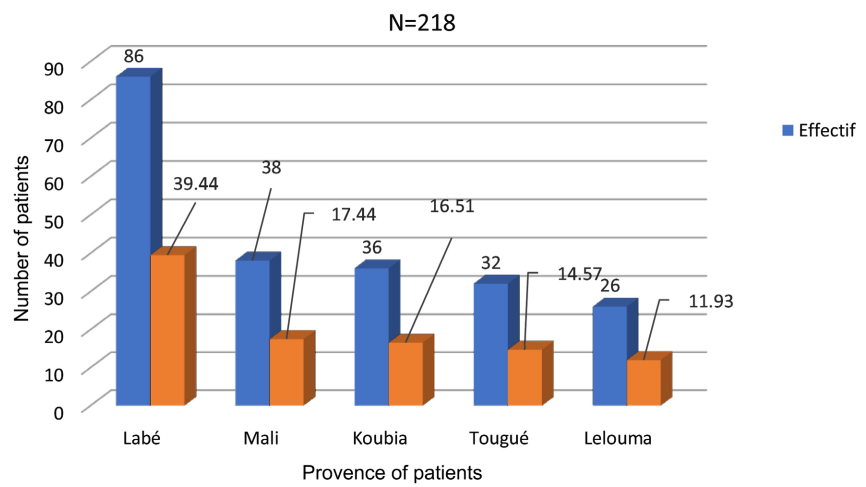


Figure 2. Distribution of patients by origin.

Table 1. Répartition des patients selon la tranche d'âge.

Tranche d'âge	Effectif	Pourcentage
0 - 10	11	5.04
11 - 20	9	4.13
21 - 30	11	5.04
31 - 40	12	5.50
41 - 50	13	5.90
51 - 60	17	7.80
61 - 70	53	24.31
71 - 80	61	28.03
>à 80	31	14.21
<b>TOTAL</b>	<b>218</b>	<b>100.00</b>

Average age: 56.60 ans extremes: 15 jours et 93 ans.

**Table 2.** Distribution of patients by socio-professional category.

Profession	Effectif	Pourcentage (%)
Farmer	78	35.78
Shopkeeper	54	24.77
Worker	40	18.35
Civil servant	32	14.68
Student	14	6.42
<b>TOTAL</b>	<b>218</b>	<b>100</b>

**Table 3.** Distribution of patients by type of emergency.

Type d'urgence	Effectif	Pourcentage
Urinary retention	153	70.18
<b>Infectious pathology</b>		
Orchiepididymitis	23	10.55
Acute prostatitis	07	3.21
OGE Gangrene	05	2.21
Nephritic colic	10	4.59
Hematuria	08	3.67
Genital trauma	08	3.67
Spermatic cord torsion	03	1.38
Priapism	01	0.46
<b>Total</b>	<b>218</b>	<b>100.00</b>

**Table 4.** Distribution of patients by etiology of bladder retention.

Etiologie	Effectif	Pourcentage (%)
Prostate tumors	67	43.78
Calcification of the indwelling catheter	35	22.87
Urethral stricture	30	19.6
Neurogenic bladder	10	6.53
Cervical sclerosis	4	2.61
Urethral trauma	4	2.61
Prostatitis	2	1.30
Tumor of the penis	1	0.65
<b>TOTAL</b>	<b>153</b>	<b>100</b>

**Table 5.** Summary of emergency patient management.

<b>Geste en urgence</b>	<b>Effectif</b>	<b>Pourcentage</b>
<b>Transurethral bladder drainage</b>		
Indwelling urethral catheter	75	34.4
Bladder detachment	02	0.91
Urethral catheter + Prostatic adenomectomy	03	1.37
Urethral tube renewal	35	16.05
Urethral tube + ultrasound + referral to hospital	01	0.45
<b>Suprapubic bladder drainage</b>		
Cysto-catheter	47	21.55
Surgical cystostomy + debridement of necrotic tissue	05	2.29
<b>Medical treatment</b>	45	20.64
<b>OGE Surgery</b>		
Distal cavernospongiosus shunt	01	0.45
Detorsion + Orchidopexy	03	1.37
Hemostasis + dressing	01	0.45
<b>TOTAL</b>	<b>218</b>	<b>100</b>

performed three emergency hemostasis adenomectomies in the operating room. Urological emergencies required hospitalization due to their severity, such as gangrene of the external genitalia, chronic urine retention requiring progressive drainage and vascular filling to avoid complications, notably obstruction leaver syndrome and vacuo hematuria. Overall, 171 patients (78.44%) had been under observation for 48 hours after admission, compared with 16.06% (n = 35) who had been hospitalized in our department. Five point fifty percent of patients were referred to other departments for management.

#### 4. Discussion

The management of urological emergencies is a major part of the activity of our urology unit, accounting for 45.14% of all admissions to the department. Our results are superior to several studies, notably by Tengue K *et al.* [5] Halidou M *et al.* [7] and Diallo TO at the Kolda regional hospital [8], who reported only 147.3 urological emergencies per year, 506 cases of emergencies with 24% of all admissions to the department in 42 months and 20.40% of all admissions to the department. Our results can be explained by the fact that our department was unique in the Middle Guinea region, which was made up of five prefectures, and all urological emergencies were referred directly to our department. The average age of our patients was 56.60 years, with extremes of 15 days and 93 years. This shows that the majority of urological emergencies in our region occurred in people over 50 years of age. Farmers were the most represented in our series

35.78% (n = 78) followed by traders). Our results were identical to those found by Diallo A. B. *et al.* who, in their study, observed that farmers were dominant, 40.6% (n = 307) followed by workers and civil servants with 21% (n = 159) and 12.9% (n = 98) [6]. This predominance of farmers and merchants could be explained by the geographical location of the Labé region, where agriculture and commerce are the most common professions. Prostatic tumors were the most frequently diagnosed pathologies on admission, and most patients had consulted a specialist for complications (bladder retention). The same observation was made by Diallo A. B. *et al.* [6] and Tengué K *et al.* [5]. The sex ratio favored men (Figure 3). We found that our sex ratio was higher than the sex ratios found in sub-Saharan Africa, notably Senegal and Mauritania [7] [8]. In European series, the sex ratio was even lower, at 1.5, 3.19 and 3.55 [2] [9] [10]. This male predominance in our series can be explained by the fact that certain urological emergencies concern men exclusively (orchiepidymitis, priapism, prostate tumours, cord torsion, bladder retention). The city center and surrounding areas were the most frequent source of urological emergencies, with 39.44% (n = 86). This frequency can be explained by the region's demographic explosion, and by the fact that the prefecture is home to the only referral urology service in the Middle Guinea region. Only urological emergencies beyond the competence of the on-call team are referred to CHU Ignace Deen, five hundred and twenty km from the capital. Urinary retention was the most frequent urological emergency. Our results were similar to those of Tengué K *et al.* in Togo [5] and Ould T Feil Y *et al.* [4], who reported 64% and 53% of cases respectively. This may be explained by the fact that it is one of the main circumstances for the discovery of obstructive sub-bladder pathologies (prostate tumours and urethral stricture). Prostatic tumors were the leading cause of bladder retention, accounting for 43.78% of cases. In a similar study carried out in Togo by Tengué K *et al.* [5], the main etiologies of bladder retention were prostate tumours, responsible for bladder retention in 74% of cases. Calcification of the indwelling catheter was

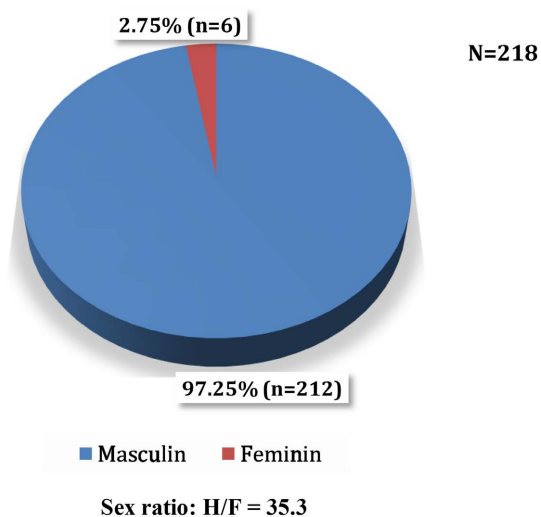


Figure 3. Distribution of patients by sex.

the second most common cause of bladder retention in our study, accounting for 22.87% (n = 35). This latter situation can be explained by the poverty of the patients on the one hand, and on the other by the negligence of certain patients to come to the department or to a medical center to change their indwelling catheter. Urogenital infections were relatively high (16.08% of cases) in our series, in contrast to the studies by Halidou M. *et al.* [7] in Niger and A. B. *et al.* [6] in Guinea, who reported an incidence of nine cases per year and 4.5% respectively. They were dominated by orchiepididymitis, acute prostatitis and bursal necrosis, with 60.71% (n = 17), 39.28% (n = 11) and 25% (n = 7) respectively. Bursal necrosis was less frequent, accounting for 20% (n = 7) of urogenital infections in our series. In the Labé region, disorders of the urogenital sphere are perceived as a shameful and sometimes mysterious pathology, leading patients to consult a traditional practitioner or a healer, before later consulting a hospital at the stage of complications. Urogenital trauma accounted for 3.67% (n = 8) of cases, dominated by urethral and OGE trauma with 50% (n = 4) and 25% (n = 2) of cases respectively. In one case of closed trauma to the right kidney, grade II according to the AAST classification, with stable hemodynamic parameters, the patient was admitted for observation with vascular filling with physiological serum. In our series, we recorded a case of post-circumcision hemorrhage. This circumcision was performed by a paramedic in a room set up in the patient's home, where he provided medical care (dressings, infusion of solutions, injections, etc.). This is a common accident, most often benign, but can sometimes be severe due to profuse bleeding, and remains frequent in countries where these rituals are widespread [11] [12]. Spermatic cord torsion accounted for 1.38% (n = 3) of all urological emergencies received in our department. Urogenital infections were relatively high (16.08% of cases) in our series, in contrast to studies by Halidou M. *et al.* [7] in Niger and A. B. *et al.* [6] in Guinea, who reported an incidence of nine cases per year and 4.5% respectively. They were dominated by orchiepididymitis, acute prostatitis and bursal necrosis, with 60.71% (n = 17), 39.28% (n = 11) and 25% (n = 7) respectively. Bursal necrosis was less frequent, accounting for 20% (n = 7) of urogenital infections in our series. In the Labé region, disorders of the urogenital sphere are perceived as a shameful and sometimes mysterious pathology, leading patients to consult a traditional practitioner or a healer, before later consulting a hospital at the stage of complications. Urogenital trauma accounted for 3.67% (n = 8) of cases, dominated by urethral and OGE trauma, with 50% (n = 4) and 25% (n = 2) of cases respectively. In one case of closed trauma to the right kidney, grade II according to the AAST classification, with stable hemodynamic parameters, the patient was admitted for observation with vascular filling with physiological serum. In our series, we recorded a case of post-circumcision hemorrhage. This circumcision was performed by a paramedic in a room set up in the patient's home, where he provided medical care (dressings, infusion of solutions, injections, etc.). This is a common accident, most often benign, but can sometimes be severe due to profuse bleeding, and remains frequent in countries where these rituals are widespread [11] [12].



Spermatic cord torsion accounted for 1.38% (n = 3) of all urological emergencies received in our department. All these torsions of the spermatic cord were managed immediately after admission, enabling us to save the testicles and avoid orchiectomy. Hematuria was present in eight cases (3.67% of cases). None of our patients had benefited from ureterocystoscopy, as our department did not have a cystoscope, and all hematuria patients had been referred to Conakry University Hospital for treatment. All profuse hematuria had been treated with a bladder irrigation system before referral. Regardless of the nature and type of emergency, 97.25% of patients were managed early, 30 minutes after admission. Tengue K *et al.* found a management time of two hours, and six patients (2.75%) were managed late. Urethral catheterization was the most frequently performed emergency procedure, with 34.4% (n = 75). Tengue K. *et al.* [4] similarly found that urethral catheterization was the most frequently performed procedure for the management of bladder retention (58.8%). The remaining 26.60% of patients required surgical management in the operating theatre. The same observation was made by d'Ould T Feil *et al.* in Mauritania and Fall B. in Senegal, who reported that 25% and 26.75% [4] [13] of their urological emergencies were managed in the emergency operating room. Suspensory derivation was the most common surgical procedure performed on an emergency basis, accounting for 83.93% of cases. The opposite result was reported by Fall B. *et al.* in Senegal and Ould T Feil *et al.* in Mauritania, with 59.7% and 59.67% respectively [4] [13]. Togo's Tengue K *et al.* [5] found that debridement of external genital gangrene was the most common surgical procedure, accounting for 46.8% of cases. The majority of our patients, 78.44%, had been under observation for less than 24 hours after their emergency management. After emergency management, some patients were discharged for subsequent etiological treatment.

## 5. Conclusion

The management of urological emergencies is a common activity in our practice, and requires specific material and human resources. Urological emergencies can have both functional and vital consequences if they are not attended to promptly and by specified personnel.

## Conflicts of Interest

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

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## Annexe: Fiche Survey Sheet

### 1) General information

Name.....

First name.....

Age.....

Sex.....

Profession.....

Background: Labé:                      Periphery:

Nationality: Guinean:                Other:

### 2) Complaint

- Urine retention: Acute Chronic: complete incomplete

- Urinary Burning:

Yes..... No.....

- Dysuria:

Yes..... No.....

- Pollakiuria:

Yes..... No.....

- Fever:

Yes..... No.....

- Urethralgia:

Yes..... No.....

- Haematuria:

Yes..... No.....

- Low back pain:

Yes..... siege..... type..... irradiation.....

soothing factor..... factor..... aggravating intensity

No.....

- Anuria:

Yes..... No.....

- Other: .....

Evolution: .....

History

- Medical: .....

- Surgical: .....

- Gynecological: .....

Field: HTA Diabetes Sickle Cell Disease Neurological Gout

Diagnostic:

### 3) Conduct

Emergency procedures

a) Bladder drainage: transurethral bladder catheterisation

b) Medical:

Antibiotic: .....

Analgesic: .....

Other: .....

c) Surgical:

Route of first: .....

Gestures: .....

Progressive follow-up

Favorable: Yes ..... No .....

Unfavourable: .....