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Research Article

Urological Emergencies at the Pr Bocar Sidy SALL University Hospital in Kati: Epidemiological, Clinical, Etiological and Therapeutic Aspects

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Abstract

Objective: To study the epidemiological, clinical, etiological and therapeutic aspects of urological emergencies at the Urology Department of the Pr Bocar Sidy Sall University Hospital in Kati. Materials and Methods: This was a prospective descriptive study conducted from January 1, 2022, to December 31, 2024, a period of 36 months. It included all patients presenting with a urological emergency seen in consultation at the emergency department and patients hospitalized in other departments. Results: We recorded 502 patients with a urological emergency, representing 5.70% of the study population. The most represented age group was 60 years and older, at 57.4%. The male-to-female ratio was 5.97. Complete inability to urinate was the most frequent reason for consultation, accounting for 45.2% of cases. Bladder distension was present in 40.6% of patients. Acute urinary retention was the most frequent type of emergency, accounting for 45.6%. Benign prostatic hyperplasia was the most common etiology, at 32.1%, followed by bladder tumors at 27.9% and prostate cancer at 10.4%. Transurethral catheterization was the most frequent non-surgical emergency procedure, performed in 50.3% of cases. The most frequent surgical procedure was suprapubic catheterization, performed in 78 patients (45.88%), followed by double-J stent placement in 40 patients (23.53%). Transurethral resection of the prostate was the most common etiological treatment, performed in 43.53% of cases. The length of hospital stay was 2 to 3 days in 24.7% of cases. Conclusion: The most frequent urological emergency in the urology department of the Pr Bocar Sidy Sall University Hospital in Kati was urinary retention.

Keywords

Urological Emergencies, Epidemiology, Clinical Presentation, Treatment

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1. Introduction

Urological emergencies encompass pathologies of the male urogenital and female urinary systems that threaten functional and/or vital prognosis if not managed promptly and appropriately. Urological emergencies represent a significant portion of urological practice [1]. These emergencies are numerous and diverse, ranging from urinary retention to urogenital infections, including acute scrotal swelling and urogenital trauma [2]. The risks are generally caused by an obstructive, tumoral, infectious, or traumatic process affecting the urogenital system. Patients must receive rapid relief, and sometimes etiological investigation is performed on an outpatient basis after the acute episode has subsided [2-4]. The objective was to study the epidemiological, clinical, etiological and therapeutic aspects of urological emergencies in the urology department of the Pr Bocar Sidy Sall University Hospital in Kati.

2. Patients and Methods

2.1. Study Setting

This was a retrospective descriptive study of urological emergencies. The study was conducted in the urology department of the Pr Bocar Sidy Sall University Hospital Center in Kati. Samples were collected and information gathered from selected subjects. The study took place from January 1, 2022, to December 31, 2024, a period of three years.

2.2. Study Population and Inclusion Criteria

The study population included all patients seen during urological consultations and hospitalized in the urology department during the study period. Our study sample was exhaustive (all patients hospitalized in the department and seen in outpatient consultations during the study period for urological emergencies). Our study included all patients presenting with one or more clinical manifestations related to urological emergencies seen in consultations, emergency departments, and hospitalized in other departments (all clinical situations involving the urological system requiring emergency intervention).

2.3. Data Collection and Analysis

Data were collected using a survey form from: patient records; consultation registers; hospitalization registers; and operating room registers. The variables studied were sociodemographic data, clinical data, paraclinical data, and treatments. Analysis, word processing, and graphs were performed using Word 2016 and Excel 2016, respectively. Data were entered and analyzed using IBM SPSS version 25.0. We obtained informed consent from patients using individual forms while maintaining anonymity.

3. Results

We recorded 502 patients with urological emergencies, representing 5.70% of cases. The most represented age group was 60 years and older, with 288 cases (57.4%) (Table 1). Males were the most represented sex, accounting for 85.7% of cases. The male-to-female ratio was 5.97. Complete inability to urinate was the most frequent reason for consultation, with 227 cases (45.2%) (Table 2). Bladder distension was present in 204 patients, or 40.6% of patients (Table 3). Acute urinary retention was the most common type of emergency, with 229 cases (45.6%) (Table 4). The most frequently isolated pathogen was E. coli, with 157 cases (44.8%) (Table 5). Benign prostatic hyperplasia was the most common etiology (32.1%), followed by bladder tumor (27.9%) and prostate cancer (161, 10.4%) (Table 6). Transurethral catheterization was the most frequent non-surgical emergency procedure (50.3%). The most frequent surgical procedure was suprapubic catheterization, performed in 78 patients (45.88%), followed by double-J stent placement in 40 patients (23.53%) (Table 7). Transurethral resection of the prostate was the most common etiological treatment (111, 43.53%) (Table 8). The length of hospital stay was 2 to 3 days in the majority of cases (124, 24.7%) (Table 9). Death was observed in 14 patients, or 4.38%.

3.1. Sociodemographic Characteristics

Table 1. Distribution of patients by age group.

Age group	Effective	Percentage
04-20	38	07.6
21-40	79	15.7
41-60	97	19.3
60 and more	288	57.4
Total	502	100

The most represented age group was 60 years and more, at 57.4%.

3.2. Clinical Aspects

Table 2. Distribution of patients according to reason for consultation.

Reason for consultation	Effective	Percentage
Complete inability to urinate	227	45.2
Clotted hematuria	170	33.9
Lower back pain + Fever	28	5.6
Penile swelling	15	3.0

Reason for consultation	Effective	Percentage
Dysuria	13	2.6
Prolonged erection	10	2.0
Testicular pain	8	1.6
Right lower back pain	7	1,4
Pelvic pain and pollakiuria	7	1.4
Lumboabdominal pain + hematuria	5	1.0
Painful and foul-smelling scrotal swelling	4	0.8
Bilateral lower back pain	4	0.8
Other	4	0.8
Total	502	100

The most common reason for consultation was the complete inability to urinate, accounting for 45.2% of cases.
Other: fever or altered general condition (1), genital and perineal wounds (1), left lumbar pain (1), and oliguria/anuria with bilateral lumbar pain (1).

Table 3. Distribution of patients according to physical signs.

Physical signs	Effective	Percentage
Bladder distension	204	40.6
Pelvic pain	167	33.3
Lumbar pain	30	06.0
Bladder distension + urethrorrhagia	24	04.8
Positive Giordano's sign	13	02.6
Bladder distension + overflow incontinence	12	02.4
Painful and prolonged erection	9	01.8
Tunica albuginea defect	8	01.6
Large painful scrotum	8	01.6
Pelvic pain	7	01.4
Swelling of the foreskin and glans	7	01.4
Scrotal and perineal skin necrosis	5	01.0
Hemodynamic instability	4	00.8
Hematuria + lumbar pain	2	00.4
Anuria	1	00.2
Macroscopic hematuria	1	00.2
Total	502	100

Bladder distension was the most represented physical sign, at 40.6%.

Table 4. Distribution of patients according to the type of emergency.

Type of emergency	Effective	Percentage
Acute urinary retention	229	45.6
Hematuria	167	33.3
Renal colic	36	7.2
Chronic urinary retention	11	2.2
Priapism	10	2.0
Penile fracture	8	1.6
Kidney trauma	8	1.6
Acute cystitis	7	1.4
Acute pyelonephritis	7	1.4
Paraphimosis	7	1.4
Gangrene of the external genitalia	5	1.0
Scrotal trauma	4	0.8
Spermatic cord torsion	3	0.6
Total	502	100

Acute bladder urinary retention was the most represented type of emergency, accounting for 45.6%.

3.3. Paraclinical Aspects

Table 5. Distribution of patients according to the germ identified in the urine culture.

Germ identified in the urine culture	Effective	Percentage
Escherichia coli	157	44.8
Klebsiella pneumonia	104	29.7
Staphylococcus aureus	55	15.7
Pseudomonas aeruginosa	22	6.3
Enterobacter cloacae	7	0.2
Enterococcus faecalis	5	0.1
Total	350	100

The most frequently found germ was E. coli, at 44.8%.

3.4. Etiological Aspects

Table 6. Distribution of patients according to the etiologies of urological emergencies.

Etiologies of urological emergencies	Effective	Percentage
Benign prostatic hyperplasia	161	32.1
Bladder tumor	140	27.9
Prostate cancer	52	10.4
Urinary stones	28	5.6
Urethral trauma	21	4.2
Ureteral stricture	17	3.4
Urethral stricture	13	2.6
Bacterial infection	12	2.4
Obstructive renal failure	11	2.2
Sickle cell disease	10	2.0
Penile fracture	8	1.6
Iatrogenic urethral trauma	7	1.4
Urinary schistosomiasis	6	1.2
Scrotal trauma	6	1.2
Pelvic trauma	4	0.8
Kidney trauma	3	0.6
Sperm cord torsion	3	0.6
Total	502	100

Benign prostatic hyperplasia was the most represented etiology, accounting for 32.1%.

3.5. Therapeutic Aspects

Table 7. Distribution of patients according to emergency surgical procedures (n=170).

Emergency surgical procedures	Effective	Percentage
Suprapubic cystocatheterization	78	45,9
Endoscopic JJ stenting	40	23,5
Transurethral resection of the bladder for hemostasis	15	08,8
Puncture of the corpora cavernosa	10	05,9
Albuginorraphy	7	04,1
Orchiectomy	6	03,5
Perinoscrotal debridement	4	02,3
Posthectomy	4	02,3
Nephrectomy	3	01,8
Contralateral orchiectomy and orchidopexy	2	01,2
Detorsion and bilateral orchidopexy	1	00,6
Total	170	100,0

The most represented surgical procedure was suprapubic cystocatheterization, accounting for 45.9%.

Table 8. Distribution of patients according to etiological treatment.

Etiological treatment	Effective	Percentage
Transurethral resection of the prostate (TURP)	111	43.5
TURP + intraurethral ureteroscopy (IUR)	40	15.7
TURP + orchiectomy	40	15.7
Flexible laser ureteroscopy	24	9.4
Endoscopic internal urethrotomy	15	5.9
Urethroplasty	8	3.1
Albuginorraphy	7	2.8
Antibiotic therapy	7	2.8
Ureterovesical reimplantation	6	2.4
Orchidectomy	6	2.4
Semi-rigid laser ureteroscopy	5	2.0
Necrosectomy	4	1.6
Posthectomy	4	1.6
Repeated JJ stenting	4	1.6
Transurethral resection of the bladder	3	1.2
Nephrectomy	3	1.2
Pyeloplasty	3	1.2
Contralateral orchiectomy and orchidopexy	2	0.9
Other	3	1.2
Total	255	100

Transurethral resection of the prostate was the most common etiological treatment, accounting for 43.53% of cases. Other treatments included: hematoma drainage (1), albuginorrhaphy + urethroplasty (1), and bilateral detorsion + orchidopexy (1).

Table 9. *Distribution of patients according to length of hospital stay.*

Length of hospital stay	Effective	Percentage
Less than 1 day	36	07.2
1 to 2 Days	59	11.8
2 to 3 Days	124	24.7
4 to 5 Days	93	18.5
5 to 10 Days	117	23.3
10 to 15 Days	66	13.1
15 to 20 Days	3	0.6
20 to 30 Days	4	0.8
Total	502	100

The length of hospital stay was 2 to 3 days in the majority of cases, i.e. 24.7%.

4. Discussion

Our study revealed that urological emergencies constitute 5.70% of patients seen in the urology department. Admission in an emergency setting is the usual way in which urological pathologies are discovered in hospitals in Africa. Although urological emergencies are less frequent than emergencies in other medical disciplines, they represent a significant portion of the activity in an emergency department [5]. In Guinea, in Conakry, urological emergencies accounted for 22% of admissions to the urology department [6]. In our study, we grouped patients by age and found a peak in the 60+ age range (57.4%), with extremes ranging from 4 to 92 years. Urological emergencies are statistically linked to age, comparable to that reported by Gnakouri et al. [1]. Gnakouri et al. at the Cocody University Hospital in Côte d'Ivoire [1], and Bori M. et al. in Benin [2] reported cases in the following age groups: 60-75 and 60-74, respectively. This increase in the age group (60 years and over) could be explained by the fact that prostatic diseases, which are generally responsible for acute urinary retention, begin after the age of 60.

Male sex represented 85.7% and females 14.3%, with a sex ratio of 5.97. Several similar studies confirm the male predominance of urological emergencies [4, 5, 7]. These results are attributed to the frequency of urethro-prostatic diseases. Complete inability to urinate was the most frequent reason for consultation, accounting for 45.2%. This result is close to that of Epoupa Ngalle et al. in Douala (45.05%) [4] and Tfeil YO et al. in Nouakchott [5], and lower than that of Diabaté et al. (66.13%) [3]. Conversely, our study is higher than those of Boissier et al. in Marseille [7] and Atkins O. in Atlanta [8], which were 20% and 8.5%, respectively. This difference in frequency is explained by the fact that in Western countries, patients consult at an early stage of urethro-prostatic diseases, while in Africa, patients consult at a late stage, hence the acute urinary retention. Acute bladder urinary retention was the most represented, at 45.6%. This result is lower than those of Okeke in Nigeria [9] with 59.6%, of B. Fall et al [10] in Dakar with 53%, close to those of [4] in Douala with 45.05%, and higher than those of Owon'Abessolo et al [11] with 29.9%, and Mondet et al [12] and Emamanuel Chartier-Kastler [13] in France, who noted that acute bladder urinary retention was the second most common condition after lower back pain, accounting for 22% of cases. E. E. coli was the most prevalent isolated organism at 31.3%, followed by Klebsiella pneumoniae at 20.7%. Benign prostatic hyperplasia was the most common etiology at 32.1%, followed by bladder tumor at 27.9%.

In the study by Gnabro and al. [14], urological emergencies were dominated by urinary retention complicating prostate tumors, and their emergency management relied on bladder catheterization [14]. This is a common situation in men, with the main etiologies being prostate tumors and urinary retention. These two pathologies are also the main causes of acute urinary retention in the vast majority of studies [14-18]. The predominance of bladder catheterization was also found in most authors' reports on urological emergencies [18]. Although a simple procedure, transurethral catheterization proved valuable in relieving the bladder outlet obstruction. Therefore, proficiency in inserting a bladder catheter is crucial. In other words, it must be inserted under strict aseptic conditions to avoid infectious complications. Maintaining a closed system throughout the catheterization, without disconnecting the catheter from the collection bag, is recommended. Use a large-bore (≥ 18 Fr) angled catheter in men and a double-lumen catheter in cases of hematuria [19]. When choosing the type and size of catheter, it is preferable to avoid small-bore catheters initially and use an 18 or 20 Fr Foley catheter.

Suprapubic catheterization was performed in 78 patients and was the most common emergency surgical procedure, followed by the insertion of an endoscopic double-J stent in 40 patients and transurethral resection of the bladder for hemostasis in 15 patients, representing 45.9%, 23.5%, and 8.8%, respectively. In the study by Gnabro et al. [14], based on a series of 563 urological emergencies, males predominated, with a mean age of 55.58 years. Urinary emergencies accounted for 47.42% of the reasons for consultation. Bladder catheterization and suprapubic urinary drainage constituted the main emergency therapeutic procedures [14]. In the study by Ndiaye M et al. [20], urological emergencies were mainly due to hematuria and urinary retention.

In our study, benign prostatic hyperplasia (BPH) was the most prevalent etiology (32.1%), followed by bladder tumors (27.9%), prostate cancer (10.4%), and urinary stones (5.6%). Most etiological treatments were planned. Transurethral resection of the prostate (TURP) was the most common (22.1%), followed by flexible laser ureteroscopy (4.8%) and endoscopic internal urethrotomy (3%). Furthermore, most patients had advanced-stage bladder tumors, making radical endoscopic resection of the prostate (EOR) impossible. Patients

lost to follow-up and those who refused surgery and opted for palliative treatment accounted for 41.2%.

5. Conclusion

Urological emergencies occupy a significant place in our daily practice. Acute urinary retention was the most frequent urological emergency, primarily caused by benign prostatic hyperplasia, hematuria, and renal colic. The adult male population was the most represented, suggesting the increased occurrence of urethro-prostatic diseases in men over sixty. The higher frequency of these urological emergencies is due to delayed consultation by individuals with urological diseases.

Abbreviations

BSS	Bocar Sidy Sall
UCBE	Urine Cytobacteriological Examination
RVUG	Retrograde Voiding Urethrography
AUSP	Urinary Tract Without Preparation
Uro-TDM	Uro-CT Scan
TURP	Transurethral Resection of the Prostate
UIE	Endoscopic Internal Urethrotomy

Author Contributions

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Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Gnakouri A, Vodi C, Fofana A, Kramo Nykan F, Drabo A, Coulibaly I and al. Epidemiological, diagnostic and therapeutic aspects of urological emergencies at the Cocody University Hospital. African Journal of Cases Report and Revues 2025; 1(2): 39-46. https://doi.org/10.70065/2512.jaccrSurg.008L012308

[2] Bori M, Fred H, Rene D, Y Magloire Avakoudjo J. Epidemiological, Diagnostic, and Therapeutic Aspects or Urologic Emergencies at Sounon Sero Hospital in Nikki in Benin. European Scientific Institute 2023; 3: 538-546. https://doi.org/10.19044/esipreprint.3.2023.p538

[3] Diabate I, Ondo CZ, Sow I, Ba A, MBoup C. Urological emergencies at the Louga hospital center, Senegal: Epidemiological aspects and evaluation of care. African Journal of Urology 2015; 21: 181–6. https://doi.org/10.1016/j.afju.2015.04.004

[4] Epoupa Ngalle FG, Mbouche LO, Nwaha Makon AS, Fouda JC, Mekeme Mekeme JB, Essomba AQ et al. Urological emergencies in two university hospitals in Douala: a retrospective study (2016-2020). Pan Afr. Med. J 2023; 44: 135. https://doi.org/1011604/pam.2023.44.135.35954

[5] Tfeil YO, Elmoctar CAO, Ca MO, Jdoud CO. Urological emergencies at the Nouakchott National Hospital: epidemiological, clinical and therapeutic aspects. Androl. 2010; 20(2): 144–147. https://doi.org/10.1007/s12610-010-0077-4

[6] Bobo Diallo A, Bah I, Diallo TMO, Bah OR, Amougou B, Bah M, Guirassy S, Diallo MB. The profile urological emergencies at the Conakry University Teaching Hospital, Guinea. Prog. Urol. 2010; 20: 214–8. https://doi.org/10.1016/j.purol.2009.10.008

[7] Boissier R, Savoie PH, Long J-A. Epidemiology of urological emergencies in France. Prog. Urol. 2021; 31: 945–55. https://doi.org/10.1016/j.purol.2021.07.004

[8] Atkins SO. Urological Emergency Admissions to a Community Hospital: A Review. J Natl Med Assoc 1983; 75: 557–9.

[9] Okeke C, Obi A, Odoemene C, and al. Urological Emergencies in a Nigerian Teaching Hospital: Epidemiology and Treatment. Nigerian Journal of Clinical Practice 2021; 24: 400-5. https://doi.org/10.4103/njcp.njcp_393_20

[10] Fall B, Diao B, Fall PA, Diallo Y, Sow Y and al. Urological emergencies at the Dakar university teaching hospital: Epidemiological, clinical and therapeutic features. Prog. Urol. 2008; 18: 650-3. https://doi.org/10.1016/j.purol.2008.04.004

[11] Owon'Abessolo PF, Mayopa CF, Mekeme J, Fouda J and al. Urological emergencies: Epidemiological, clinical and therapeutic profile at the Yaoundé Central Hospital. Health Sciences and Disease 2020; 21(8): 52-55. https://doi.org/10.5281hsd.v21i8.2187

[12] Mondet F, Chartier-Kastler E, Yonneau L, Bohin D, Barrou B, Richard F. Epidemiology of urological emergencies in a teaching hospital. Prog Urol 2002; 12: 437-42.

[13] Chartier-Kastler E. Epidemiology of urological emergencies at the Pitié-Salpêtrière Hospital Group, Paris, France. Prog. Urol. 2002; 12: 437-442.

[14] Gnabro G. A-P, Vodi CC, Fofana A, Kramo NF, Drabo A, Coulibaly I, and al. Epidemiological, diagnostic and therapeutic aspects of urological emergencies at Cocody University honspital. Revue Bio-Africa 2024; 32: 21-28.

[15] Pare AK, Yameogo C, Ky B, Bako A, Rouamba M, Kabore FA, and al. Urological emergencies at the University Hospital of Bobo-Dioulasso (Burkina Faso). Epidemiological aspects and management of 303 cases. J Rech Sci of Lome University 2019; 21(4-1): 236-44.

[16] Diallo TO, Diabate I, Barry M 2, Bah OR. The profile of urological emergencies in a regional hospital in Senegal: a 20-month retrospective study. Pan Afr Med J.; 2022; 42: 302. https://doi.org/10.11604/pamj.2022.42.302.34654

[17] Traore MT, Yameogo CAMKD, Kabore M, Ouedraogo S. Epidemiology of Urological Emergencies at the Regional University Hospital Center of Ouahigouya, Burkina Faso. Open J Urol. 2020; 10: 177-183. https://doi.org/10.4236/oju.2020.106020

[18] Halidou M, Adamou H, Ibrahim A, Roua A, Habou O, Amadou Magagi I, and al. Urological emergencies at the National Hospital of Zinder: Epidemiological, etiological and therapeutic aspects. Annal of Abdou Moumouni University 2017; 22: 136-43.

[19] Baboudjian M, Boissier R. Acute urine retention care pathway. Prog. Urol.; 2022; 32: 875-879. https://doi.org/10.1016/j.purol.2022.08.004

[20] Ndiaye M, Sow O, Sarr A, Ndiath A, Ze Ondo C, Sine B and al. Urological emergency in a University Hospital Setting: Epidemiological, Diagnostic and Therapeutic Aspects. International Journal of Clinical Urology 2020; 4(2): 51-54. https://doi.org/10.11648/j.ijcu.20200402.13