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Epidemiological Profile of Urological Emergencies at Zinder National Hospital (HNZ)

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Abstract

Introduction: urological emergencies are frequent and varied, and occupy an important place in the activities of urology departments.

The aim of this study is to present the profile of urological emergencies at Zinder National Hospital.

Patients and Methods: This was a cross-sectional, descriptive study with retrospective and prospective collection on urological emergencies received and managed between over a three-year period from January 1, 2021 to December 31, 2023 in the emergency and urology departments of Zinder National Hospital. Sociodemographic, clinical and therapeutic parameters were studied. Data analysis was performed using Epi info 7.5.2 software.

Results: During the period, 458 urological emergencies were recorded, representing 18.72% of urological consultations (n=2446) and 6.64% of all emergencies admitted to the emergency department (n=6894).

The average age of patients was 58, with extremes of 1 and 97 years. The 60-80 age group (n=174) was the most affected. The majority of patients were male (91%, n=415), with a sex ratio of 9.9. The main emergencies were bladder retention of urine with 52.62% of cases, followed by urogenital infections (pyelonephritis, orchiepididymitis, external genital gangrene) with 20.29% of cases. The etiologies of acute bladder urine retention in men were prostatic tumors with 93.36% (n=225) of cases, urethral strictures with 3.73%(n=9) of cases and bladder tumors with 1.24%(n=3) of cases. Sickle-cell anaemia was the cause of priapism in 66.66% and the other 33.34% by abuse of aphrodisiacs. Renal colic of lithiasic origin with 82.75% of cases (n=24). Traumatic emergencies (61.53%) occurred in road traffic. Therapeutic procedures included transurethral bladder catheterization in 43.45% of cases (n=199). Medication treatment in 20.30% of patients. Exploratory scrototomy, debridement, albuginorraphy, carveno-spongiosa shunting and trimming were the main surgical procedures performed (15.3%). catheterization of the ureter with ¨JJ¨ probe in 4 cases.

Keywords: Urological emergencies; Urine retention; Renal colic; Zinder hospital.

Introduction

In medicine, an emergency is any acute clinical situation affecting a patient's health and requiring rapid management. In urology, these situations, known as urological emergencies, are frequent and varied, and occupy an

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important place in the activities of urologists. They can be classified into five main groups: traumatic, infectious, obstructive, ischemic and hemorrhagic [1]. In Africa, urological emergencies are dominated by acute retention of urine linked to prostatic pathologies, whereas in Europe, renal pain is the main reason for emergency consultation in urology departments [1-4, 5]. Niger is also concerned by the same emergencys, as shown by a study carried out in the same department in 2017 by Halidou et al, who found 59.29% of cases of acute urine retention [6]. It is in this context that we return to this subject in order to study urological emergencies at Zinder National Hospital.

Patients and methods

This was a cross-sectional, descriptive study with retrospective and prospective collection of urological emergencies received and managed over a three-year period from January 1, 2021 to December 31, 2023 in the emergency department (department handling all emergencies) and urology department of Zinder National Hospital. Patients were either seen in the emergency department staffed by a general practitioner and nurses, then referred to the urologist, or received directly in a urological consultation. All urological emergencies admitted and managed in emergency and urology departments were included in this study. All patients referred to us whose urological emergency had been resolved in another care center were excluded from this study. Data were collected using a data collection form based on emergency registers, urology department consultation registers and operating theatre operative report registers. Sociodemographic, clinical and therapeutic parameters were studied. Data analysis was performed using Epi info 7.5.2 software

Results

Frequency

During the study period, we recorded 458 urological emergencies, representing 18.72% of urological consultations (n=2446) and 6.64% of all emergencies admitted to the emergency department (n=6894).

Age

The average age of patients was 58, with extremes of 1 and 97 years. The majority of patients were male, with 91% (n=415) versus only 9% female (n=43), giving a sex ratio of 9.9. The age group most concerned was 60 to 80 (n=174).

Main emergencies: Table 1 lists all urological emergencies by sex and frequency. Urine retention was the most common emergency, accounting for 52.62% of cases, followed by urogenital infections (pyelonephritis, orchiepididymitis, and gangrene of the external genitalia) with 20.29% of cases.

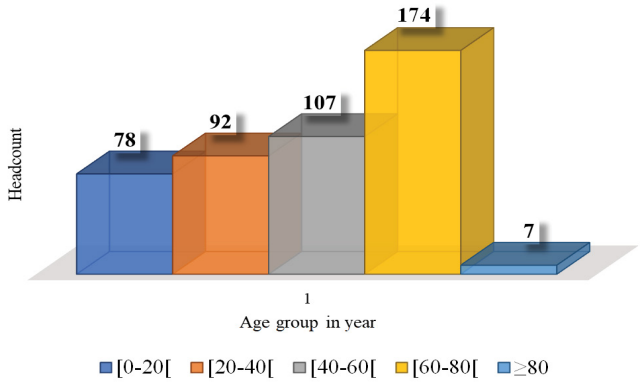

Figure 1: Patient distribution by age group

Table I: Presentation of patients according to urological emergencies

Main emergencies	Headcount		Total	Percentage (%)
	M	F		
Acute vesical urine retention	237	4	241	52.62
Orchi-epididymitis	35	0	32	7.64
Acute pyelonephritis	6	10	16	3.5
E.G.O. Gangrene	42	0	32	9.17
Nephritic colic	14	15	29	6.33
Hématuria	32	14	46	10.04
Torsion of spermatic cord	18	0	18	3.93
E.G.O trauma	9	0	9	1.97
Priapism	6	0	6	1.31
Trauma of lower urinary tract	4	0	4	0.88
Fracture of the penis	7	0	7	1.53
Circumcision accidents	3	0	3	0.65
Paraphimosis	2	0	2	0.43
TOTAL	**415**	**43**	**458**	**100**

Table II: Number of patients according to emergency care

Therapeutic approaches in emergencies	Number of cases	Percentage (%)
Trans-urethral bladder catheterization	199	43.45
Cystostomy	46	10.04
Debriding	32	7
Urine catheterization + bladder cleansing	45	9.82
Scrototomy	22	4.8
Ureteral catheterization with jj probe	4	0.88
Néphrostomy	1	0.21
Caverno-spongiosa shunt	4	0.88
Albuginoraphy	7	1.52
Trimming - Dressing	5	1.1
Observation + medical treatment	93	20.3
Total	**458**	**100**

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Etiological factors

The main etiologies of acute urine retention in men were prostatic tumors with 93.36% (n=225) of cases, urethral strictures with 3.73%(n=9) of cases and bladder tumors with 1.24%(n=3) of cases. Among the 4 women who presented with acute urine retention, there were 3 cases of bladder tumors and one case of compressive fecal impaction. Renal colic was mainly of lithiasis origin in all patients, accounting for 82.75% of cases (n=24). There were also 3 cases of pyeloureteral junction syndrome and 2 cases of ureteral compression by gravid uterus. Tumour pathologies (bladder and prostate) were found in 80% (n=36) of haematuria cases, compared with 15.56% (n=7) of urinary lithiasis cases (bladder and kidney) and 2 cases of bilharzian cystitis (4.44%). Fournier's gangrene was idiopathic in 19 patients (59.37%) and 13 patients had either a urogenital infection (periurethral phlegmon), urethral stricture or proctological disorder (18.75%) and (12.5%) and (9.38%). Sickle cell disease was the etiology of priapism in 66.66% of patients, and 2 (33.34%) cases excessive aphrodisiac abuse 2 cases (33.34%) of excessive aphrodisiac abuse. Traumatic emergencies occurred mainly after road traffic accidents (61.53%). There were 7 cases of scrotal injury versus 2 cases of penile injury, and 4 cases of urethral injury versus bladder injury.

Therapeutic procedures: Emergency procedures are listed in Table 2. Transurethral bladder catheterization was the most common procedure, accounting for 43.45% (n=199). This catheterization was combined with bladder lavage in 45 patients (9.82%). In 46 patients (10.04%), catheterization was impossible or contraindicated, so cystostomy was performed. Drug treatment was indicated in 20.30% of patients. Exploratory scrototomies, debridements, albuginorraphy, carveno-spongiosa shunts and trimmings were the main surgical procedures performed on an emergency basis (15.3%). ureteral catheterization with ¨JJ¨ probe was performed for 2 pregnant women for hyperalgesic renal colic, and 2 men with pyeloureteral junction syndromes.

Discussion

The study of urological emergencies in Africa reveals a number of common patient characteristics. Indeed, as in our series, a clear predominance of males has been reported in almost all African series, old and new alike. This male predominance is due to the high frequency of emergencies caused by urethro-prostatic pathologies. In our study, the sex ratio was 9.9, with 91% of patients being male. Halidou et al [6] found a male predominance of 93.7% in a study carried out in 2017 in the same department. In Mauritania, the sex ratio was 20.32 in favor of men [7]. Men also represented 92%, 97.62% and 100% of patients respectively in Cameroon, Senegal and Benin [2, 1, 4]. The mean age of patients was 58 years, with extremes of 1 to 97 years, and the age group most affected was 60 to 80 years with 38% (n=174). This mean age in our series is higher than those reported by Tengué et al [8] in Togo and Bobo et al [9] in Guinea, who reported mean ages of 49.15 and 56 respectively. However, despite the difference in mean age found in our three series, we note a concordance of data on the predominance of the 60 and over age bracket across studies. In Togo, for example, the 60 to 69 age group was the most represented (18.4%), and over 54.9% of patients were over 50 [8]. In Guinea and Cameroon, patients aged 60 and over accounted for 61.38% and 44% of cases respectively. [9, 2]. The overall frequency of urological emergencies was 18.72% of urological consultations (n=2446) and 6.64% of all emergencies admitted to the emergency department (n=6894). This prevalence is higher than those of Mougougou et al [10] in Gabon and Diabaté et al [1] in Senegal, who reported frequencies of 10.9% and 15.8% respectively in their series. This is significantly higher than those of Boissier et al [11] in France, and Raherinantenaina et al [12] in Madagascar, who reported 4.2% and 0.9% respectively. This difference in prevalence could be explained by the fact that the national hospital in Zinder is the only referral center in the entire south-eastern strip of our country, comprising 4 regions, and also receives patients from neighbouring countries such as Nigeria and Chad. However, the present prevalence in our study is lower than that found by Halidou et al [7] in the same hospital, which was 24%. This difference is probably due to our country's health policy witch assign general practitioners to take care of some emergencys, acute urine retention was the leading urological emergency in our study, accounting for 52.62% of cases. This observation had also been made by many African authors. Bobo Diallo et al [9] at Conakry University Hospital and Tengué et al [8] at Sylvanus Olympyo University Hospital in Lomé reported 73.9% and 64% respectively of acute urinary retention.

Similarly, in Senegal and Cameroon, acute retention of urine was the primary emergency, accounting for 53% and 29.9% of cases [13, 2]. But, in France, where patients consult a doctor as soon as the first urinary symptoms appear, it ranks second after renal pain [5]. In our study, low-back pain (renal colic and pyelonephritis) accounted for 9.83% of cases.

Hematuria was the second most common urological emergency in our series, accounting for 10.04% of cases. The same observation was made in Guinea and Cameroon by Bobo Diallo et al and Owen'Abessolo et al, who found it in 9.6% and 18.7% of cases respectively [9, 2]. However, for some authors, notably in Senegal and Togo, it ranks only sixth and fourth respectively, with 1.18% and 1.4% [8, 13]. Some authors explain this situation by the fact that certain intermittent minimal haematuria without bladder clot is not recorded as an emergency [14]. Nevertheless, the etiology most frequently found remains the same in the various series,

namely bladder and prostate tumors. Their management requires emergency decalcification and bladder irrigation with a Dual flow uretral catheter [14]. Urogenital trauma accounted for only 0.88% of urological emergencies in our study. This rate is lower than those found in the studies by Owen'Abessolo et al, in Cameroon, and Bobo Diallo et al, in Guinea, which were 14.2% and 7% of cases respectively. [9, 2]. These traumas were dominated by scrotal and urethral injuries in our series. Halidou et al had reported a similar rate of 0.99% of urethral injuries in their study carried out in the same hospital in 2017 [6]. Public road accidents were the dominant circumstances of occurrence of these traumas in our series (61.53%) and in other series. [2,16]. Urogenital infections remain diverse and varied in all studies. They are dominated by orchi-epididymitis (7.64%) and gangrene of the external genitalia (9.17%) in our study. This observation was also made by Owen'Abessolo et al and Diabaté et al, who found a respective predominance of Fournier's gangrene and acute orchi-epididymitis. [1, 2] In our series, the majority of Fournier gangrene cases were idiopathic, whereas for Rimtebaye K et al in Chad in 2009 [17] perineal abscess was the main etiology, with diabetes as the comorbidity found in the majority of his patients. Emergency management was dominated by bladder catheterization (43, 45%) and 46 cystostomies (10.04% of cases). This therapeutic approach was used by almost all African authors, due to the high frequency of obstructive emergencies [1-4, 6]. The surgical procedure most frequently performed in our center was the debridement of gangrene of the external genitalia. The same was done by Fall [13], Bobo Diallo [9] and Tengué [8]. Treatment of urogenital infections was based on antibiotic therapy, antipyretic drugs and analgesics. We performed 4 JJ ureteral catheter for 2 pregnant women for hyperalgesic renal colic and in 2 men with pyeloureteral junction syndromes. This upper urinary diversion was also performed by Fall in 2008 [13], as an emergency treatment for obstructive pyelonephritis. The same applies to the work of Mondet et al in 2002 in France [5], where pyelonephritis accounted for 31% of cases. However, in Tengué's study [8], JJ catheter insertion was not performed on an emergency basis, due to the limited technical resources available. This lack of technical resources, particularly endoscopic resources, probably explains why this procedure is not performed in the majority of early African series. [6, 8, 9]. In our context, endoscopy began in 2022. In Gabon, Mougougou et al [3] performed an emergency endoscopic procedure in 30% of cases.

Conclusion

Urological emergencies are still dominated by bladder urine retention and, in our African context, are frequent in elderly. They are an important part of the activities in most urology departments. Their management sometimes requires a modern technical equipement, particulary, endoscopy, to face obstructive emergencies of the upper urinary tract.

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