

Epidemiological, Clinical, and Therapeutic Aspects of Injuries to the Male External Genitalia at the Abeche University Hospital

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Abstract

Introduction: Trauma to the male external genitalia (EG) refers to all injuries resulting from physical assault targeting the male external genitalia. Such injuries are relatively common and generally occur in young individuals. The objective of this study was to improve the management of trauma to the male external genitalia. **Patients and Methods:** This was a retrospective, descriptive study conducted over a three-year period from January 2021 to December 2023. It took place in the Emergency and Urology Departments of the Abéché University Hospital. The study population consisted of patients admitted and treated for trauma to the external genitalia. **Results:** Injuries to the external genitalia accounted for 0.4% of admissions. The mean age was 29 years, ranging from 10 to 68 years. Sixty-four percent (n = 16) of the patients were married, and 60% (n = 15) were from rural areas. The circumstances of injury were criminal torture (strangulation of the external genitalia), specifically targeting the external genitalia in 28% of cases, followed by traffic accidents, kicks from animals (donkeys, horses, and oxen), and fights, which accounted for 24%, 20%, and 16% of cases, respectively. The impact was direct in all cases. The time to admission ranged from 24 to 72 hours in 52% of patients. A scrotal wound was found in 32%, and a penile wound in 24%. Emergency procedures performed included wound debridement and scrototomy in 24% and 20% of cases, respectively. Transurethral bladder catheterisation accounted for 20%. In the emergency department, 64% (n = 16) were discharged with a referral to urology, compared to 36% who were hospitalized. The average length of hospital stay was 7 days, ranging from 1 to 17 days. **Conclusion:** Injuries to the

male external genitalia account for a significant proportion of emergency department admissions and are more common among younger individuals. Assaults are the most common cause of these injuries.

Keywords

Injuries, External Genitalia, Epidemiology

1. Introduction

Trauma to the male external genitalia (EG) refers to all open or closed injuries resulting from physical assault targeting the EG. Such injuries are relatively common, typically occur in young individuals, and may initially go unnoticed when they occur in the context of multiple traumas [1]. The circumstances of occurrence are numerous and varied and may include traffic accidents, workplace or domestic accidents involving impact to the EGI, or a misstep during intercourse [2] [3]. These injuries can compromise the functional prognosis of the affected organs and may even be life-threatening. Management requires specialist consultation.

2. Patients and Methods

We conducted a retrospective and descriptive study covering a three (3)-year period from January 2021 to December 2023 in the A&E and Urology departments of the Abéché University Hospital. The study focused on the complete medical records of male patients of all ages who were admitted for genital trauma and treated during this period. Patients with incomplete records were excluded. Sociodemographic, clinical, therapeutic and outcome data were analysed. The data were collected and analysed using SPSS 19.0 software. Calculations were performed using proportions and the mean.

3. Results

During the study, we identified 25 cases of male genital trauma out of a total of 6037 trauma cases admitted to the emergency department, representing an incidence of 0.4%. The median age was 29 years, with ages ranging from 10 to 68 years (Table 1).

Table 1. Distribution of patients by age.

Age	N	%
<15	7	28
16 - 30	10	40
31 - 45	5	20
>45	3	12
Total	25	100

The most common age group was 16 to 30 years old. Farmers accounted for 44% ($n = 11$) of admissions. Patients were married in 64% ($n = 16$) of cases. They came from rural areas in 60% of cases (**Figure 1**).

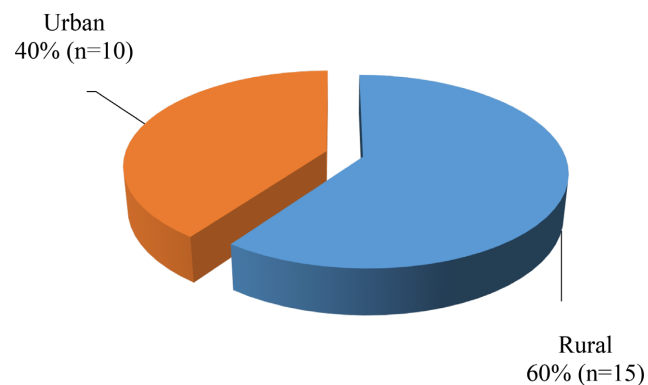


Figure 1. Distribution of patients by place of origin.

The circumstances of the injuries included criminal acts of torture (strangulation of the external genitalia) specifically targeting the external genitalia in 28% of cases, followed by kicks from animals (donkeys, horses, and cattle), traffic accidents, and fights, which accounted for 24%, 20%, and 16% of cases, respectively (**Table 2**).

Table 2. Distribution of patients by circumstances of onset.

Nature	N	%
Criminal acts of torture	7	28
Kick from an animal	5	20
Road accident	6	24
Rix	4	16
Sexual blunder	3	12
Total	25	100

The injury was direct in all cases. The time from injury to admission ranged from 24 to 72 hours in 52% of patients. A scrotal wound was found in 32% of patients, and a penile wound in 24% (**Figure 2**).

Associated injuries included abdominal contusion, pelvic trauma, and fracture of a pelvic limb in 20%, 12%, and 8% of cases, respectively. In the emergency department, the procedures performed were wound debridement and scrototomy in 24% and 20% of cases, respectively. Transurethral bladder catheterisation accounted for 20% (**Table 3**).

In the emergency department, 64% ($n = 16$) were discharged with a referral to urology, compared with 36% who were admitted. The average length of hospital stay was 7 days, ranging from 1 to 17 days. After 6 months, outcomes included urethral stricture in 12% of cases and testicular atrophy in 4% of cases; no deaths were reported.

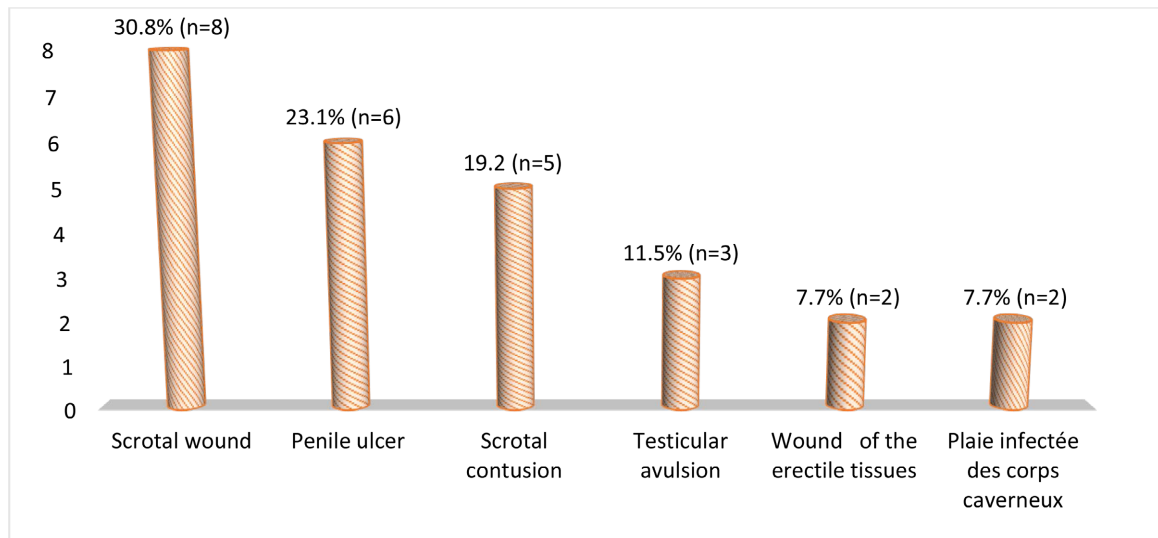


Figure 2. Distribution of patients by type of injury.

Table 3. Distribution of patients by emergency procedure.

Emergency procedures	n	%
Albuginorrhea	4	10
Bypass cystostomy	3	7.5
Relief incision	2	5
Hoof trimming	12	30
Medical treatment alone	5	12.5
Testicular amputation stump regularization	3	7.5
Scrotoplasty	3	7.5
Transurethral bladder catheterization	8	20
Total	40	100

4. Discussion

During the study, injuries to the upper extremities accounted for 0.4% of admissions (25/6037). This relatively low prevalence may be attributed to various socioeconomic and cultural factors, as well as to the nature of the activities in which the patients were engaged. It was reported at 0.2% in the Kambou series in Burkina Faso [3]. The mean age was 29 years, with a predominance of individuals aged 16 to 30 years. This suggests that young adults, often involved in risky activities such as fights or reckless behavior, are particularly vulnerable to this type of trauma. Urogenital trauma is characteristic of young individuals, and nearly all authors agree on this feature [3] [4]. In Mali, Touré [4] reports a mean age of 42.9 years. The fact that farmers account for 44% of admissions may indicate a correlation between agricultural activities and urogenital injuries, often due to farmer-herder conflicts or proximity to draft animals (donkeys, horses, and oxen).

These findings underscore the importance of improving safety measures in these settings to prevent accidents. In a study conducted in Ouagadougou, Burkina Faso [3], the occupational group most affected by urogenital injuries accounted for 40% of cases.

Furthermore, the fact that 60% of patients came from rural areas may indicate that limited access to medical care in these regions could influence the length of hospital stay, as evidenced by the admission delay of between 24 and 72 hours in 52% of cases.

The circumstances surrounding the injuries reveal acts of violence, particularly assaults primarily targeting female genitalia and criminal torture, accounting for 28% and 24% of cases, respectively. Road traffic accidents and animal bites, which were frequent in our series, underscore the importance of increased vigilance during transportation and when interacting with animals.

A similar finding was reported by Rimtebaye [5] at the Ndjamena University Hospital in Chad, where cases of total penile amputation were also documented. These types of assaults are by no means culturally specific, but are widespread in Chad and, if left unchecked, could pose a public health problem.

The circumstances of discovery are dominated by sexual intercourse-related injuries, accounting for 58.3% of cases in Kambou and Amadou, Mali, while in Mali, traffic accidents account for 70% of cases, followed by falls from heights at 10.3% [3] [6].

However, scrotal and penile wounds were the most common injuries, found in 32% and 24% of cases, respectively. These injuries represent a significant clinical problem requiring prompt urological care to prevent the development of complications. In Coulibaly's study [1], open scrotal trauma was the most common reason for consultation, accounting for 34.6%. In a study conducted by Fouelifact [7] in Yaoundé, Cameroon, traumatic injuries to the male external genitalia were dominated by penile swelling in 19.3% of cases and testicular avulsion in 15.5%.

The surgical procedures performed, particularly wound debridement (24%) and scrototomy (20%), highlight the complexity of the care required in such cases and underscore the fact that appropriate emergency treatment is crucial for preventing serious complications such as urinary dysfunction. Amadou [6] in Mali and Ouattara [2] in Benin report cystotomy as the most commonly performed emergency procedure, with respective percentages of 20.8% and 50%.

The outcome was favorable in 84%, with 64% of patients discharged and 36% hospitalized. In Rimtebaye's [5] study in Chad, no deaths were recorded. Furthermore, urinary complications (strictures) and genital complications (testicular atrophy) occurred in 12% and 4% of cases, respectively. However, psychological complications were not taken into account. Nevertheless, Ouattara [2] reports two deaths, representing 6.25%. Indeed, the outcome of trauma to the external genitalia depends on the severity of associated extragenital injuries and, above all, on the time elapsed before the injured patient seeks medical attention.

5. Conclusion

It appears that injuries to the male external genitalia are relatively rare in our setting but can be potentially serious due to urinary or sexual complications, as well as psychological consequences. They primarily affect young, rural individuals, with criminal torture and kicks from farm animals being the leading causes; hence the need to implement adequate preventive measures. Diagnosis is primarily clinical. Urethral injury must be systematically investigated. Management of these injuries is twofold: initial emergency care followed by follow-up care.

Author Contributions

- 1) The first author took the lead on the study's topic and objectives, the methodology and data collection, and oversaw the drafting of the article.
- 2) The second author contributed to the drafting of the article.
- 3) The third author contributed to the data collection.
- 4) The fourth and fifth authors contributed to overseeing the data collection and ensuring the text was entered correctly.
- 5) The sixth author and the other authors contributed to the revision and proofreading of the article.

Conflicts of Interest

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

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