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Epidemiological And Therapeutic Aspects of Spermatic Cord Torsion in The Pediatric Surgery Department of the mother and Child University Hospital of Libreville from January 2019 to October 2022

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Abstract: Introduction: Testicular torsion is a surgical emergency, a twisting of the spermatic cord leading to acute testicular ischemia, associated with a very high risk of necrosis if treatment is not initiated within 6 hours. The incidence is 1 in 4,000 boys. The clinical presentation is dominated by sudden scrotal pain. Early treatment is essential. We report the epidemiological and therapeutic aspects of spermatic cord torsion in the pediatric surgery department of the Libreville Mother and Child University Hospital from January 2019 to October 2022. **Materials and Methods:** This was a retrospective descriptive study, conducted from January 2019 to October 2022, which systematically included all children diagnosed with spermatic cord torsion at the Libreville Mother and Child University Hospital during the study period. Results We collected 13 cases of spermatic cord torsion out of 2950 hospitalizations, representing a frequency of 0.4% of hospitalizations in the department. The mean age was 11.6 years (±4.2). All children presented with testicular pain on clinical examination. Patient management was exclusively surgical. Postoperative outcomes were favorable for 12 of the 13 patients. **Conclusion:** Spermatic cord torsion is infrequent but nonetheless significant. Its prognosis was improved thanks to rapid intervention in our setting, thus limiting complications.

Keywords: Spermatic Cord Torsion, Child, Libreville

INTRODUCTION

Testicular torsion is a major surgical emergency in pediatrics, the diagnosis and management of which determine the survival and function of the affected testicle [1]. It is a rotation of the spermatic cord on itself, leading to acute testicular ischemia, associated with a very high risk of necrosis if treatment is not initiated within 6 hours. The incidence may be as high as 1 in 4,000 boys per year before the age of 25, and this diagnosis is made in 15 to 35% of children presenting with acute scrotal pain [1-3]. The clinical presentation is dominated by sudden scrotal pain, sometimes associated with nausea, vomiting, or atypical abdominal pain, making caution all the more necessary [1-2]. Testicular torsion in children remains a daily challenge for the pediatric surgeon: its treatment must be early, systematic and adapted because every minute that passes reduces testicular survival as well as long-term quality of life.

Any delay in treatment carries a risk of orchiectomy and permanent sequelae affecting the child's future fertility. This necessitates optimal organization to ensure these children are referred as quickly as possible for appropriate surgery. Currently in Gabon, very little data exists on this subject. Therefore, we set ourselves the objective of determining the epidemiological and therapeutic aspects of spermatic cord torsion in the pediatric surgery department of the Libreville Mother and Child University Hospital from January 2019 to October 2022.

MATERIALS AND METHODS

The study took place in Libreville, the political and administrative capital of Gabon, the country's largest city in terms of population, and the capital of the Estuary Province. Its population is estimated at 846,090 in 2025 and represents nearly half of the country's population [4]. Patients were recruited from the Jeanne-Ebori Foundation Mother-Child University Hospital (CHUME FJE), the only public facility with a pediatric surgery department.

This was a retrospective descriptive study, conducted from January 2019 to October 2022, which systematically included all children diagnosed with spermatic cord torsion at CHUME FJE during the study period.

Data were collected using individual patient data collection forms containing questions about the patients. On these forms, we grouped the measured variables into different categories: patient and parental identity, personal and family history, clinical aspects, paraclinical aspects, and finally, therapeutic and outcome aspects.

Diagnostic elements were assessed based on the following criteria: pain, fever, scrotal swelling, and testicular torsion. Each criterion was marked "yes" or "no." "Yes" if present and "no" if absent. The proportion or relative frequency was calculated for each variable.

Treatment was assessed based on the following elements: time to treatment, time to diagnosis, type of treatment (surgical, non-surgical), surgical procedure performed, and outcome. The proportion was calculated for all these variables.

Data were collected using a standardized individual data collection form and digitized using Microsoft Excel. The final database was exported to R software version 4.2.4 for statistical analysis. Quantitative variables were summarized using the mean and standard deviation (SD). Proportions were used to summarize qualitative data.

RESULTS

During the study period, 13 cases of spermatic cord torsion were recorded in the pediatric surgery department of the CHUME FJE out of 2950 hospitalizations. Spermatic cord torsion represented 0.4% of hospitalizations in the department. The 13 children included in our analysis had a mean age of 11.6 years (±4.2) (Table 1). Our results show that the majority of patients (9 out of 13) were between 11 and 17 years old, while 4 patients were between 2 and 11 years old (Table 1). Regarding clinical signs, all children (13/13) presented with testicular pain on clinical examination. All patients underwent scrotal ultrasound, which confirmed the diagnosis. Patient management was exclusively surgical. The surgical procedures performed included detorsion combined with orchidopexy for 10 patients and orchiectomy for 3 patients (Table 2). The postoperative course was favorable for 12 of the 13 patients, while one patient experienced an unfavorable outcome (Table 2). The mean time to treatment was 0.2 days (±0.4).

Table 1: Sociodemographic Characteristics of the 13 Children with Testicular Torsion

Parameters	N
Age (average, ± ET)	(11.6, ± 4.2)
Age group	
2 – 11	4/13
11 – 17	9/13
Sex	
Masculine	13/13

Table 2: Clinical Signs, Management and Outcomes of 13 Children with Testicular Torsion

Parameters	n
Testicular pain	13/13
Management	
Surgical	13/13
Surgicals Acts	
Detorsion orchidopexy	10/13
Orchidectomy	3/13
Evolution/Issue	
Favorable	12/13
Unfavorable	1/13

DISCUSSION

The main objective of this analysis was to study the epidemiological and therapeutic aspects of testicular torsion in the pediatric surgery department of the Libreville Mother and Child University Hospital from January 2019 to October 2022.

The hospital incidence was 0.4%, a relatively low rate comparable to that found in Conakry by Bah *et al.* [5]. This finding highlights a significant and feared pathology, not because of its recurrence, but because of the severe physiological dysfunction it can cause.

Our series reported a mean age of 11.6 years, lower than those found in other African series (Conakry = 19.5 years; Dakar = 20 years) [5-6]. This disparity underscores an important fact: testicular torsion can occur at any age; however, peak incidences are observed in the neonatal and pubertal periods [3].

Our results are consistent with the literature on the predominance of acute testicular pain as a cardinal sign [5], present in 100% of cases in our setting. However, nearly 15% of children presenting with acute scrotal pain have testicular torsion, illustrating the need to maintain a high level of suspicion to avoid any diagnostic delay [7].

Testicular torsion in children, as our series shows, remains a true urological emergency. The orchiectomy rate of 3/13 cases that we describe is consistent with what is reported in the literature: a retrospective analysis of 104 patients indicated that this rate depends primarily on the time between the onset of symptoms and treatment [1]. The report of the study conducted by Yi et al. in 2023 demonstrated that only 23.8% of children with spermatic cord torsion are treated within 6 hours of the onset of pain [8]. Similarly, Sarr et al indicated in their study that 19% of patients had been received before the 6th hour [6].

Orchiectomy can be reduced by 9% if surgical treatment is performed within the first 6 hours, while the rate exceeds 56% when the delay is longer [8]. Similarly, Howe et al. reported in 2017 that the testicular salvage rate exceeds 90% if surgery is performed within 6 hours, 50% between 12 and 24 hours, and less than 10% after 24 hours [9]. The average treatment in our cohort (0.2 days

≈ 5 hours) was extremely early and was responsible for testicular preservation in the majority of cases.

CONCLUSION

In conclusion, the prevalence of spermatic cord torsion is low but not negligible. In our cohort, the prognosis was improved thanks to prompt surgery, in a context where time elapsed is a key determinant of the orchiectomy rate and therefore of testicular salvage. Any strategy aimed at reducing the time between the onset of symptoms and treatment should be encouraged to avoid the risk of necrosis and long-term fertility consequences.

REFERENCE

[1] Shunmugam, M. *et al.* "Torsion testiculaire chez l'enfant." Canadian Family Physician, vol. 67, no. 9, September 2021, pp. 672–674.

[2] Estremadoyro, D.V. *et al.* "Diagnostic et prise en charge de la torsion testiculaire chez l'enfant." Revue Médicale Suisse, 2017.

[3] Sauvat, F. *et al.* "Un âge pour la torsion testiculaire?" Archives de Pédiatrie, vol. 9, no. 12, December 2002, pp. 1226–1229.

[4] Worldometer. "Démographie du Gabon 2025 (Population, Âge, Sexe, Tendances)." Accessed September 2025. https://www.worldometers.info/fr/demographie/gabon-demographie/.

[5] Bah, O.R. *et al.* "Aspects cliniques et thérapeutiques de la torsion du cordon spermatique: étude de 27 cas." Progrès en Urologie, vol. 20, no. 7, July 2010, pp. 527–531.

[6] Sarr, A. *et al.* "Aspects diagnostiques et thérapeutiques de la torsion du cordon spermatique au CHU Aristide-Le-Dantec de Dakar." Basic Clinical Andrology, vol. 20, no. 3, September 2010, pp. 203–208.

[7] Mao, C.K. *et al.* "The Diagnosis and Treatment of Testicular Torsion in Children with Non-Scrotal Initial Symptoms." Frontiers in Pediatrics, vol. 11, June 2023. Accessed October 2025. https://www.frontiersin.org/journals/pediatrics/articles/10.3389/fped.2023.1176345/full.

[8] Yi, H. *et al.* "Analysis of Factors Associated with Delayed Diagnosis and Treatment of Testicular Torsion in 1005 Cases from Chongqing City, China: A Cross-Sectional Study." Scientific Reports, vol. 13, no. 1, December 2023, pp. 22765.

[9] Howe, A.S. *et al.* "Degree of Twisting and Duration of Symptoms Are Prognostic Factors of Testis Salvage during Episodes of Testicular Torsion." Translational Andrology and Urology, vol. 6, no. 6, December 2017, pp. 1159166–1151166.