

Management of the Torsion of Spermatic Cord in the Urology-Andrology Department of the Ignace Deen National Hospital in Conakry

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Abstract

Introduction: Torsion of the spermatic cord is an emergency whose delay in treatment conditions the functional prognosis of the testicle. The aim of this study was to analyze the management of spermatic cord torsion in the Urology Andrology Department of the Ignace Deen National Hospital in Conakry. **Material and methods:** This was a ten-year retrospective descriptive study from January 1, 2012 to December 31, 2021. It involved all patients admitted for torsion of the spermatic cord, confirmed at surgical exploration. **Results:** We identified 21 cases of torsion of the spermatic cord. The mean age of the patients was 17.9 ± 4.4 years. The average consultation time was 19.2 ± 21.4 hours with extremes of [2 h and 98 h]. Only 6 patients (28.6%) consulted before the sixth hour. All patients presented with scrotal swelling. At scrototomy, all torsions were intravaginal with two turns of spiral in 13 cases and three turns in 8 cases. Orchiectomy followed by contralateral orchidopexy was performed in 6 cases. In the other cases, bilateral orchidopexy was performed after detorsion. The average hospital stay was 4.5 days. We recorded 4 cases of testicular atrophy after orchidopexy. **Conclusion:** Spermatic cord torsion is an infrequent emergency in our department. The delay in consultation remains the main predictive factor of testicular necrosis. Emergency exploratory scrotomy should be the rule.

Keywords

Spermatic Cord Torsion, Delay in Consultation, Orchidopexy, Orchiectomy, Testicular Atrophy

1. Introduction

Spermatic cord torsion is a frequent surgical emergency with two peaks of frequency: the neonatal period and adolescence [1]. Diagnosis is essentially clinical. No imaging examination should delay its management. Unilateral scrotal pain of sudden onset in a child or adolescent is a torsion of the spermatic cord until proven surgically otherwise [2]. Suspicion of spermatic cord torsion therefore requires immediate surgical intervention [3]. This delay in treatment determines the functional prognosis of the testicle. Indeed, the sudden interruption of the flow blood to the testicles leads to acute ischemia, then testicular necrosis in a few hours if no treatment is undertaken. Many studies report that surgical management within the first six hours can, in most cases, prevent irreversible testicular ischemia [2] [4] [5]. Unfortunately, on scrotal exploration, a third of the testicles will be considered dead and an orchiectomy performed. For preserved testicles, many will atrophy with possible damage to the contralateral testicle and impact on fertility [6] [7].

In view of this observation, torsion of the spermatic cord remains a major concern for practitioners. This is even more marked in our context where patients consult late in the majority of cases [8]. In 2010, a study carried out in our department collected 27 cases of torsion of the spermatic cord over a period of 15 years, leading to orchiectomy in 5 cases [9].

The aim of this study is to analyze the evolution of the management of spermatic cord torsion in the Urology Department of the Ignace Deen National Hospital in Conakry.

2. Material and Methods

This was a retrospective descriptive study conducted at the Urology Department of the Ignace Deen National Hospital in Conakry over a ten-year period from January 1, 2012 to December 31, 2021.

We included all patients admitted for torsion of the spermatic cord, confirmed on surgical exploration. Patients operated on for suspicion of torsion of the spermatic cord without confirmation of the diagnosis on surgical exploration were excluded from the study.

Study variables included: age, mode of admission, reasons for consultation, time to consultation and care, number of turns of the turns, viability of the testicle judged after detorsion and maneuver of recolouring, the procedure performed, the length of hospitalization and the postoperative evolution.

Data were collected from a questionnaire in the patient files found in the hospital archives. We performed a descriptive analysis using Excel software. Quantitative data were described by mean and standard deviation. Qualitative variables were described using proportions.

3. Results

During the study period, 23 patients underwent surgical exploration for sus-

pected spermatic cord torsion. Two patients were excluded for torsion not confirmed on surgical exploration (acute orchiepididymitis). We retained 21 cases of surgically confirmed spermatic cord torsion.

The mean age of the patients was 17.9 ± 4.4 years with extremes of [6 to 27 years]; 47.6% of patients ($n = 10$) were between 15 and 19 years old.

The average consultation time was 19.2 ± 21.4 hours with extremes of [2 h and 98 h]. Only 6 patients (28.6%) consulted before the sixth hour (**Figure 1**).

Concerning the mode of admission, 7 patients (33.3%) consulted directly in the department and 14 patients (66.7%) were referred from a private clinic (9 cases) or from a municipal medical center (5 cases) from Conakry. All patients who consulted before the 6th hour came directly to the service, without passing through another health structure.

The time to management (time between arrival at the service and admission to the operating room) was specified in 15 patients, with an average time of 75 minutes and extremes of [60 to 190 minutes].

All patients had scrotal swelling. Pain was reported in 18 patients (85.7%), vomiting in 2 patients and fever in one case.

Scrotal Doppler ultrasound was performed in 4 patients (19.04%). In all these cases, it made it possible to confirm the diagnosis with images suggestive of testicular necrosis in two cases.

The patients were operated under general anesthesia in 17 cases (80.9%), under spinal anesthesia in 4 cases.

At the exploratory scrototomy, all torsions were intravaginal with two turns in 62% of cases ($n = 13$), three turns in 7 cases and one turn in 1 case.

After detorsion, we found 4 immediately viable testicles (**Figure 2** and **Figure 3**), and after recoloring maneuvers and a maximum waiting time of 15 minutes, 11 viable testicles and 6 necrotic testicles (**Figure 4**).

Orchidectomy followed by contralateral orchidopexy in the same operation was performed in 6 patients (28.6%). In the remaining 15 cases (71.4%), bilateral orchidopexy was performed as a matter of principle.

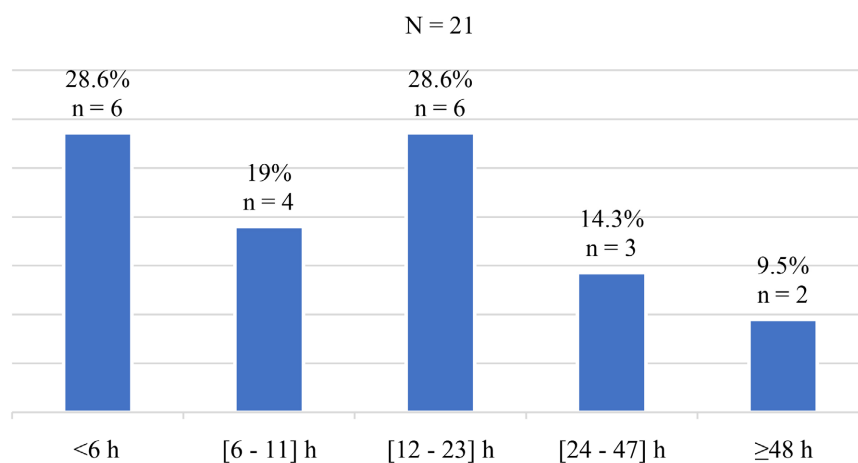


Figure 1. Distribution of patients according to consultation time limit.



Figure 2. Torsion of the spermatic cord with two turns. Blue coloration of the testicle.

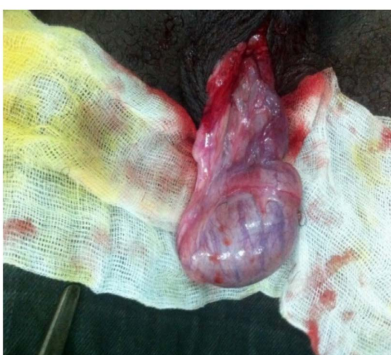


Figure 3. Gradual recoloration of the testicle after detorsion.



Figure 4. Necrotic testicle.

In the group of patients who underwent orchiectomy ($n = 6$), the mean time to consultation was 46.4 ± 12.5 hours. The turns were 2 in number in 2 cases, and 3 in 4 cases. In the orchidopexy group ($n = 15$), the mean consultation time was 22.2 ± 13.7 hours. There were 2 turns in 11 patients, 3 turns in 3 patients and 1 turn in 1 case.

Table 1 presents the procedures performed according to the patient consultation time.

Table 1. Surgical procedures according to the consultation time limit.

Consultation time limit	Surgical procedures	
	Orchidopexy (n = 15)	Orchiectomy (n = 6)
<6 hours (n = 6)	6	-
6 - 12 hours (n = 4)	4	-
12 - 24 hours (n = 6)	4	2
24 - 48 hours (n = 3)	1	2
>48 hours (n = 2)	-	2

The average duration of hospitalization was 4.2 days with extremes of [3 to 6 days]. The postoperative follow-up was favorable in all cases, with first-line healing.

After an average follow-up of 18 months [6 and 30 months], we recorded 4 cases of atrophy of the preserved testicles.

4. Discussion

This study analyzed the management of spermatic cord torsion in the Urology-Andrology Department of the Ignace Deen National Hospital in Conakry.

The incidence of torsion remains low in the department, with approximately 2 cases per year in our study and 1.8 cases per year in that of Bah *et al.* in 2008 [9]. In our hospital, spermatic cord torsion is treated both in our department and in the general surgery department. Our data collection only interested the urology department.

Torsion of the spermatic cord is an absolute emergency. Odzébé AWS [10] reports that the consultation period is often delayed in Africa because of the ignorance of this pathology and its complications by patients and certain health personnel. In our study, less than a third of the patients had consulted before the sixth hour. This delay in consultation could be explained by the therapeutic course of our patients who consulted in 66.7% of cases, firstly the closest structures before being referred to our service. The absence of an emergency medical service in the country pushes patients to use traditional means of transport, which causes a lot of delays.

Unlike our study, some authors in developed countries have reported that distancing patients and transferring them to another establishment have no impact on the outcome of the testicle after torsion [11] [12]. This suggests a better knowledge of the pathology by doctors in the periphery, allowing patients to be identified and transferred in a timely manner.

The diagnosis remains essentially clinical and should be considered in the presence of any large acute purple in children and adolescents [3]. Pain was absent in 3 cases, all of whom presented testicular necrosis. The absence of pain is thus a predictive factor of testicular necrosis. Fever may be present in cases seen late, when testicular necrosis has set in [2]. At this stage, scrotal Doppler ultra-

sound remains useful for the differential diagnosis with orchiepididymitis.

In the acute phase, scrotal Doppler ultrasound could be falsely reassuring because the arterial vascularization may be normal during this phase, the initial ischemia being venous. It cannot in any case replace surgical exploration [2].

Testicular prognosis correlates with the earliness of the operation. The overall rate of testicular preservation after torsion is 100% before 3 hours, 90% before 6 hours, and less than 50% after 10 hours [5]. In our study, the mean time to consultation was twice as high in the group that underwent an orchiectomy than in the group that presented with viable testicles. On the other hand, there was no notable difference in the number of turns of turns between the two groups. Ci-mador *et al.* note that the recovery capacity was independent of the degree of torsion [13].

The patient must be warned of the risk of orchidectomy and subsequent sub-fertility before any treatment, and parental authorization must be obtained for minors [2].

All our patients had intravaginal torsion which occurs regardless of age with a peak frequency at puberty. While the extravaginal form is found in the perinatal period and exceptionally in adults [2].

At exploration, in cases of viable testicles after detorsion, we performed bilateral orchidopexy. Contralateral orchidopexy for preventive purposes is a principle because it is common for both testicles to be affected by the same anatomical anomaly favoring torsion [3] [14].

Faced with testicular necrosis, we performed an orchiectomy followed by a preventive contralateral orchidopexy in the same operation. The orchiectomy rate in our study (28%) is lower than that found by Sarr in Senegal who reported 52% orchiectomy [15]. Some teams recommend postponing contralateral orchidopexy after orchiectomy for testicular necrosis, because of the risk of infection [4] [15]. However, in our context, where we performed the orchidopexy at the same time, we did not record any complications, particularly infectious ones.

There is controversy over the attitude to adopt in cases seen late after 24 hours: detorsion and preservation of the testicle or orchiectomy from the outset in order to preserve the function of the contralateral testicle and fertility [2]. Our attitude was to keep all the testicles that recolored after detorsion, regardless of the time taken for treatment. Orchiectomy from the outset could have a significant psychological impact, especially since we do not have a testicular prosthesis. Moreover, recent studies have shown that hormonal functions and sperm quality were comparable after orchiectomy or orchidopexy [2] [16].

All our patients have progressed well surgically with first-line healing. However, Sarr reported one case of scrotal hematoma and two cases of scrotal sup-puration [15].

Testicular atrophy is an important complication of testicular torsion. We recorded 4 patients out of 15 (26.7%) who presented testicular atrophy. Bah reported approximately 10% testicular atrophy after a median follow-up of 60 months [9]. Grimsby *et al.* [17] identified predictive factors for testicular atrophy after orc-

hidopexy for cord torsion: duration of pain greater than 12 hours, black or hemorrhagic testicle 5 min after detorsion and preoperative ultrasound showing parenchymal heterogeneity.

Our study has limitations due to its retrospective nature and the small sample size.

5. Conclusion

Spermatic cord torsion is an infrequent emergency in our department. Our study emphasizes the delay in consultation of patients who consulted in 2/3 of cases after the sixth hour. This diagnostic delay compromises the functional prognosis of the testicle. We recorded 6 cases of orchietomy for testicular necrosis. Hence, there is the need to intensify the education and information of populations and doctors practicing in the periphery on the consequences of the delay in the management of testicular torsion.

Conflicts of Interest

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

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