Jambura Medical and Health Science Journal, Vol.2 No.2 (August 2023)
p-ISSN 2830-0580 | e-ISSN 2830-4608

CASE REPORT **Open Access**

Delayed Management of Pediatric Testicular Torsion with Absence of Severe Pain: An Evidance-Based Case Report

Pramudita Angga Kartika[1]*, Riza Mazidu Sholihin[2]
[1]General Practitioner, Muslimat General Hospital, Ponorogo, Indonesia
[2]Urology Specialist, Muslimat General Hospital, Ponorogo, Indonesia

*Corresponding author. Email : anggakrtk@gmail.com, Telp: +6281239814557

ABSTRACT

Testicular torsion is a surgical emergency. To protect the affected gonad, early diagnosis and surgical therapy are essential. The pediatrician's difficulty in communicating his complaints is one of the potential patient-specific causes for a delayed diagnosis related to any of these symptoms. We describe a case of unilateral testicular torsion in a 13-year-old child who had complained of swelling but hadn't experienced intense scrotal discomfort in six days. His right testicle was completely shattered. When the right testicle was discovered to have a 360-degree torsion and to be detorted but not viable in the operating room, it had an orchidectomy, and the left testis underwent an orchidopexy. Three internet databases—PubMed, Google Scholar, and Science Direct—were used to search the literature. An English journal that discusses pediatric testicular torsion has inclusion criteria. There is insufficient research on testicular torsion that manifests with painless symptoms. Treatment could be postponed if this phenomenon isn't considered appropriately.

Keywords : Delayed management, painless, pediatrics, testicular torsion

JMHSJ Jambura Medical and Health Science Journal

Published by:
Universitas Negeri Gorontalo

Address:
Jl. Jend. Sudirman No.6, Gorontalo City, Gorontalo, Indonesia

Mobile number:
+62852 3321 5280

Email:
jmhsj@ung.ac.id

Article History:
Received 27 August 2023
Accepted 31 August 2023
Published 31 August 2023

DOI:
https://doi.org/10.37905/jmhsj.v2i2.21818

Introduction

Scrotal issues account for at least 0.5% of all emergency room visits, making them relatively prevalent. Testicular torsion, a time-dependent diagnosis that is a true urologic emergency, can result in testicular loss; early examination can assist with urologic care to prevent this.[1] Since testicular viability substantially decreases six hours following the onset of symptoms, early diagnosis is crucial. Young people are most frequently affected by testicular torsion; however, older persons are rarely affected. Surgery is the only feasible course available in this case.[2]

The vast majority of cases, which often result from a processus vaginalis abnormality at birth, affect people who are younger (less than 25 years old). The initial manifestation could have been spontaneous, brought on by an effort, or, less frequently, by trauma. Testicular torsion accounts for about one-fourth of scrotal issues seen in emergency rooms.[3] The twisted spermatic cord and blood supply cause testicular torsion. Because it is frequently securely related to the posterolateral portion of the testis, the spermatic cord is immobile inside the tunica vaginalis. If the point of attachment of the tunica vaginalis is high, the spermatic cord may internally twist and result in intravaginal torsion. The bell clapper deformity, bilateral in at least 40% of cases, is the name attributed to this condition.[4]

Surgery is required immediately for testicular torsion. Early identification and surgical intervention are crucial for the gonad that is ill to be preserved.[5] The pediatrician may have trouble communicating his issues, which could be a patient-specific reason for a delayed recognition of any of these signs. Although 4-10% of torsions are detected after a testicular trauma, most torsions cannot be attributed to a specific incident.[6] Testicular ischemia and venous congestion result from the testicle interrupting venous blood flow as it coils around the spermatic cord. The testicle will become painful, swollen, and even erythematous. As the testicle rotates, the arterial blood supply is cut off, leading to acute ischemia and necrosis of the testis.[7] It is generally accepted that testicular torsion is characterized by one or more of the symptoms or clinical signs listed below, including sudden, severe, persistent, unilateral scrotal pain, vegetative symptoms like nausea and emesis, visible displacement of the testicle, either in rotation or height, swelling and/or tenderness of the scrotal sac, and decline of cremasteric reflex.[8]

Although the majority of patients do not arrive at the emergency room promptly, these symptoms are typically presented to the primary care physician.[9] Fear, shame among pubescent children, decreased pain sensitivity, or limited communication skills, particularly

among very young or neurological patients, are potential patient-specific reasons for delayed presentation with any of these symptoms. Lack of clinical experience, inadequate health system infrastructure, and incorrect identification of the illnesses by the examining health experts are external causes for delayed diagnosis or treatment. The differential diagnosis accounts for tumor markers, duplex sonography, urine analysis, blood analysis, and more diagnostic tests.[10] To prevent testicular necrosis, detorsion of the testicle should be accomplished within 6 to 8 hours.[11] One explanation for this could suggest that older kids can express their symptoms more easily. Although 4-10% of torsions are detected after a testicular trauma, most torsions cannot be attributed to a specific incident.[12]

Ultrasound can be difficult to diagnose with tumor torsion, particularly in young patients. For instance, 40% of newborn testicles may not show any color flow Doppler. Consult with a urologic surgeon right away if the clinical issue is significant. Any treatment delay could cause testicular necrosis and loss. Six hours after the first signs of pain are the normal cutoff for surgical intervention and testicular salvage. Therefore, prompt consultation with a urologist following the presentation may be crucial even without confirming tests.[13] Manual detorsion should be used if rapid urological intervention is not available. Before determining whether pain relief has occurred, the aberrant testicle should be rotated 180 degrees (open book) from medial to lateral. If the pain worsens, oppositely rotating the testicle may be considered. The restoration of blood flow can also be monitored at the bedside using ultrasound serially. The testicle may twist 180 degrees, so it can be tried again if manual detorsion doesn't work.[14]

The outcome of testicular torsion depends on the patient's arrival time at the emergency department (ED) as well as how quickly the diagnosis is made and treatment is initiated. Delays in diagnosis and treatment always bring on testicular atrophy. Orchiectomy is required in about 20–40% of cases of testicular torsion. African Americans and younger males are substantially more likely to lose a testis. If therapy is attempted within the first six hours of the onset of symptoms, the salvage rate is over 100%; however, if more than 12 to 24 hours pass, it quickly drops to less than 50%. More importantly, when the testis is healed using orchiopexy, future torsion is also possible.[15]

Case

A 13-year-old boy complained to the emergency room with a swollen and painless scrotum for six days. The patient had already gone to the paramedics on the third day for a checkup. Antibiotics had been administered to the patient. The patient is currently

enrolled in school, there is no history of prior massages, and daily activities are unremarkable. There was no past medical history, trauma, or disease. No complaints of fever, nausea, emesis, or other vegetative symptoms existed. The right scrotum was swollen and showed a minor redness. Still, according to the physical examination findings, there was no noticeably elevated local temperature, which also revealed edema in the scrotum and mild pain (three points on the visual analog scale). Figure 1 illustrates the clinical examination results, which showed that the right testicle was larger and slightly raised relative to the left testicle.

Figure 1. Initial clinical presentation of the case showed an enlarged and slightly elevated right testicle compared to the left testicle.

Orchitis was diagnosed in the emergency room, and test findings revealed a 14,000 L rise in leukocytes. He had full torsion of the right testicle, as shown in Figure 2, following scrotal ultrasonography. An orchidectomy was performed on the right testicle and an orchidopexy on the left testis, as shown in Figure 3, after the right testicle was discovered to have a 360° torsion and to be detorted but not viable in the operating room. The patient received outpatient treatment in the form of antibiotics and painkillers for two days following surgery, and no fever was present. The patient was then instructed to visit urologists five days later for control.

Figure 2. Testicular ultrasound of the case showed complete torsion of the right testicle.

Figure 3. Intraoperation finding of the case.

Discussion

An operational and clinical diagnosis of testicular torsion is made. According to the literature and medical and surgical textbooks, it is characterized by abrupt, acute, unremitting pain that frequently results in vegetative symptoms. This combination of symptoms should cause the patient to look for medical attention. This is not always the case, as our case presentation makes very evident. There was no reason to believe that the patient was in serious pain. He was only mildly to moderately uncomfortable even accounting for interpersonal variations in pain perception. More than the pain, the scrotal edema was his main concern. The patient-specific causes for delayed presentation with any of these symptoms, particularly among very young patients, may include fear, pubertal children's shame, diminished pain sensitivity, or weak communication skills. External factors contributing to delayed diagnosis or treatment include inadequate health system infrastructure, insufficient clinical experience, or a misinterpretation of the illness by the

examining health professionals.

There is a limited report on painless testicular torsion. A similar example without considerable discomfort was presented in the case report by Kapp et al. They describe a case of unilateral testicular torsion in a 14-year-old kid who did not experience excruciating pain at the time of presentation. Even though the gonad wasn't brought to the emergency room (ER) right away, it could still be saved. While this phenomenon may not always go unreported, it is uncommon.[6] In contrast, one of the testicles in our case could not be preserved, and an orchidectomy was ultimately necessary.

In retrospective research, 50 patients with torsion testis were observed when they arrived at the hospital. 90% of patients had an orchidectomy because their testicles were gangrenous. This demonstrates how conducting an orchidectomy, like in this case report, will increase if cases of testicular torsion are handled slowly. An increase in testicular examination of 14% (p=0.032) was observed in Cheng et al.'s observational study between before and after intervention periods. Examination quality improved after the intervention, rising from an average of 0.85 documented domains to 2.29 ($p < 0.001$). Because the patient arrived at the ER after hours and the history and physical examination results were vague, the diagnosis was delayed in this case, resulting in testicular torsion and a patient misdiagnosis.[16]

The case's main strength is discovering a rare instance of testicular torsion without painful symptoms. Naturally, we as clinicians must be vigilant while treating patients who may have testicular torsion, even if there is no pain. These uncommon examples teach medical professionals in the emergency room how to conduct an accurate anamnesis, physical examination, and determination of supporting examinations. This case report's limitation is the paucity of literature on testicular torsion without painful symptoms, which results in a relatively constrained discussion. Although cases like this have never been reported, testicular torsion without pain appears rare, even though cases like this may be discovered frequently. More testicular torsion cases, particularly those that are painless, are desired to be published in cases similar to this one. This may be an introduction to discuss a wider range of related topics.

Conclusion

Underestimating the risk of painless testicular torsion can cause treatment delays. Continuous education targeted at improving awareness of testicular torsion in the emergency room and reducing the chance of missed or delayed diagnosis will improve the quality of clinical examinations.

Conflict of interest

Nothing to declare

Fundig Sources

Nothing to declare

Acknowledgnments

The authors acknowledge the Farhmna Academic for assisting the manuscript preparation, including formatting, translating, proofreading, and paraphrasing.

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