

Testicular Torsion due to Epididymo-orchitis in an Adolescent: A Case Report

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Introduction. Acute scrotum in children requires rapid and accurate evaluation due to the time dependency of certain potentially dangerous conditions, such as testicular torsion. Prompt diagnosis and intervention are crucial, as delayed treatment can result in significant morbidity. In our case, the patient presented with severe pain in the left testis that occurred suddenly, with a history of pain and swelling in the left testis accompanied by fever 2 weeks prior. After examinations, it was decided to perform scrotal exploration, revealing a necrotic left testis, leading to an orchiectomy.

Case. A 16-year-old boy presented with sudden left testicular pain that radiates to the left abdomen. He reported experiencing pain accompanied by fever two weeks prior, which had resolved after treatment at a community health center. Physical examination revealed that the left testis was hard and tender with severe pain on the left side of the scrotum, which was positioned higher than the right side, along with the absence of the cremasteric reflex. Laboratory results showed elevated leukocyte counts, and ultrasound imaging revealed hypoechoic areas. The patient was diagnosed with testicular torsion, and scrotal exploration was performed, revealing a necrotic testis with 360-degree rotation of the spermatic cord. Left orchiectomy and right orchidopexy were subsequently performed.

Conclusion. The diagnosis of testicular torsion must be established promptly based on detailed history, physical examination, and supporting modalities such as ultrasonography. Early diagnosis is essential for initiating appropriate management, which can prevent testicular loss and other serious complications.

Keywords: acute scrotum, orchiectomy, testicular torsion

Introduction

Acute scrotum in children is a condition that requires rapid evaluation and appropriate management to prevent undesirable complications. The most common causes of acute scrotal pain are epididymitis/epididymo-orchitis and testicular torsion [1]. Testicular torsion is an urological emergency that demands immediate diagnosis to enable early intervention and prevent testicular damage. The majority of cases occur in younger patients under 25 years old, with prevalence between the ages of 12 and 18 [2].

Patients with testicular torsion typically experience acute scrotal pain, with the absence of the cremasteric reflex and the affected testicle positioned higher in the scrotum. Diagnostic evaluation combines clinical findings and radiological imaging using ultrasonography, which has a high ability to identify abnormalities in

testicular blood flow, as well as high sensitivity and specificity, making it the preferred choice for detecting this condition [3]. However, delays in diagnosis can lead to complications such as testicular damage or loss, often necessitating an orchiectomy [4].

Orchiectomy, especially in younger patients, can impact the patient psychologically and affect testicular function and fertility [5]. In this case, we discuss a patient with testicular torsion who has a history of testicular pain accompanied by swelling and fever 2 weeks prior, emphasizing the importance of early diagnosis and prompt intervention. This case is intended to serve as a reminder to remain vigilant in handling emergencies like this to improve patient outcomes.

Case Report

A 16-year-old boy presented to the Emergency Department with sudden severe pain in the left testis 2 hours before admitted to the hospital, which he felt while resting at home. The pain was described as sharp, stabbing, and radiating from the left testis to the left side of the abdomen, and was continuous. The patient also reported nausea without vomiting. Two weeks ago, he had complained of pain and swelling in the scrotum with fever, but the pain was not as intense, so he sought treatment at a primary health center, and the symptoms had improved. At this time, he did not report any fever. The patient is a student who actively exercises in rock climbing.

Vital signs were within normal limits. Local examination showed a circumcised penis with no erythema or swelling of the scrotum. On palpation, the left testis was hard and tender, with severe pain on the left side of the scrotum, which was positioned higher than the right side. The cremasteric reflex was absent, and the pain did not reduce with the Prehn's maneuver, indicating a negative Prehn's sign (Fig. 1). Testicular Workup for Ischemia and Suspected Torsion (TWIST) score for the patient was 5, placing him in the moderate risk category.

Laboratory blood tests showed an elevated leukocyte count of $10,200/\mu\text{L}$, a platelet count of $247,000/\mu\text{L}$, and hemoglobin level of 15.3g/dL . Routine urine tests and kidney function were normal. Scrotal ultrasound revealed left testicular torsion with features of orchitis and hydrocele (Fig. 2).



Figure 1. High riding position of left testis with negative cremasteric reflex



Figure 2. USG of scrotum showed left testicular torsion with features of orchitis and hydrocele

The patient was diagnosed with left testicular torsion. After obtaining informed consent from the patient's parents, including an explanation that removal of the testis may be necessary if necrosis had occurred and could impact the patient's psychological well-being and fertility, the patient was scheduled for an urgent surgical procedure involving scrotal exploration.

The patient underwent surgery with spinal anesthesia, and an incision was made in the left scrotum. Scrotal exploration revealed a 360-degree twisted spermatic cord and necrotic tissue in the left testis (Fig. 3). As the left testis was no longer viable, an orchiectomy was performed (Fig. 4) along with an orchidopexy of the right testis.

The patient's recovery after surgery was good, and he was informed about the procedure performed due to the emergency condition. It is recommended that the patient be monitored to assess fertility status and quality of life, as he feels insecure about having only one testis.

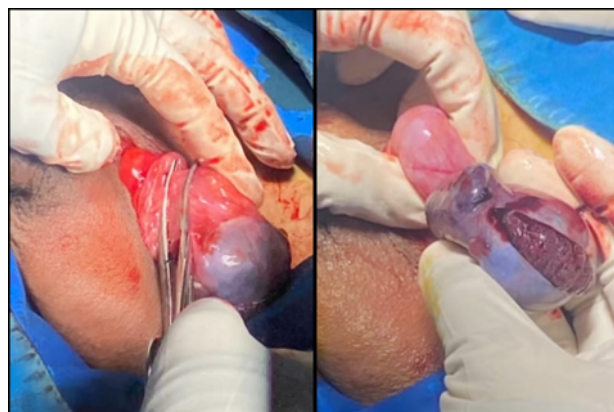


Figure 3. Scrotal exploration, necrotic tissue of left testicle



Figure 4. After orchiectomy of left testis

Discussion

Acute scrotum is a relatively common presentation in the emergency department, accounting for approximately 0.5-2.5% of all emergency department visits. It is characterized by acute symptoms such as pain, swelling, and/or tenderness in the scrotal contents [6]. Testicular torsion is one of the acute scrotal conditions that requires prompt diagnosis and immediate management to prevent testicular loss, as testicular viability significantly decreases within 6 hours of symptom onset. Therefore, early diagnosis is critical for preserving the testis [7].

In this case, the patient presented to the emergency department with left scrotal pain that began 2 hours prior to admission. Based on the history, physical examination, and assessment of the TWIST score, which placed the patient in the moderate risk category, we concluded that the patient was likely experiencing testicular torsion. The TWIST score can be a useful tool in managing the timing of testicular torsion diagnosis [8]. Patients with a high-risk TWIST score can be managed promptly without the need for additional imaging such as ultrasound [9].

From the anamnesis, the patient reported a history of left testicular pain accompanied by swelling and fever 2 weeks prior, which had resolved after treatment. However, the patient now experienced more intense pain that was different from the previous episode. We suspected the patient had epididymo-orchitis. According to a report by Zehri et al., testicular torsion occurred in a patient who was treated for epididymo-orchitis 3 days earlier¹⁰. The exact relationship between epididymo-orchitis and the development of

testicular torsion is not fully understood, but it is known that epididymo-orchitis is usually caused by bacterial infections, although non-infectious causes such as trauma, autoimmunity, and vasculitis may also contribute [11].

Diagnosing testicular torsion based on physical examination alone can sometimes be challenging and may lead to misdiagnosis [12]. As noted by Yu et al. (2012), although there are several potential causes of acute testicular pain, distinguishing between testicular torsion and acute epididymo-orchitis is crucial yet difficult. This differentiation proves challenging in up to 50% of cases [13]. Accurate diagnosis is essential, as conservative treatment without surgery is employed for acute epididymo-orchitis, whereas testicular torsion requires surgical intervention [4].

The timing of surgical intervention plays a crucial role in determining the outcome of testicular torsion [14]. In our case, the patient reported left testicular pain 2 hours prior to admission to the emergency department. After undergoing several examinations, the patient was promptly prepared for surgery due to the emergency nature of the case. The duration from admission to the operating room was approximately 2 hours. Upon scrotal exploration, a 360-degree rotation was found on the left testis, resulting in necrosis, making the testis non-viable. According to the literature, if surgical exploration is delayed, testicular atrophy may occur within 6-8 hours, and necrosis within 8-10 hours from the initial presentation. If the testis appears necrotic, orchiectomy must be performed immediately. If the testis is still viable, orchiopexy is usually performed to prevent recurrent torsion [15]. If the rotation exceeds 360 degrees during scrotal exploration, the likelihood of testicular salvage is minimal [16].

Predisposing factors for testicular torsion include congenital abnormalities in processus vaginalis, bell clapper deformity, horizontal testicular position, increased testicular volume, and trauma [4]. The decision to perform orchiectomy is influenced by the severity of torsion and the duration of symptoms, as prolonged torsion can adversely affect fertility [17]. Gajbhiye et al. observed that approximately 80% of cases of testicular torsion were diagnosed at an advanced stage, making testicular salvage impossible in many cases [18].

In our case, despite prompt intervention, the testis appeared necrotic at the time of surgical exploration due to the prolonged duration of symptoms, which had surpassed the critical time window for preserving the testis. As a result, the decision was made to proceed with orchiectomy. If

a non-viable testis is not promptly removed, it can lead to testicular dysfunction and increase the risk of complications such as infection or abscess formation [19]. This case emphasizes the importance of timely detection and intervention, as well as thorough exploration of the patient's symptom history, to prevent undesirable complications and optimize patient outcomes.

Conclusion

In conclusion, testicular torsion is a time-sensitive emergency that requires prompt diagnosis and surgical intervention to preserve testicular viability. In this case, despite timely treatment, prolonged symptoms led to testicular necrosis and necessitated orchiectomy. This emphasizes the importance of early recognition, timely intervention, and thorough assessment to differentiate torsion from other conditions like epididymo-orchitis, ultimately optimizing patient outcomes.

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