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## Twisted Fate of a Teen – A Case Report on Testicular Torsion



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### ABSTRACT

Testicular torsion is a critical urological emergency characterized by the twisting of the spermatic cord, resulting in compromised blood flow to the testicle. This case study presents a 15-year-old male who presented with acute left testicular and inguinal pain following an abdominal impact during sports. Despite initial relief from ice application, he developed severe pain accompanied by nausea and vomiting, prompting hospital admission. Clinical examination revealed an enlarged, tender left testicle with diminished cremasteric reflex and a high TWIST score of 7, indicative of a high likelihood of torsion. Diagnostic imaging via scrotal ultrasonography confirmed absent vascularity in the left testis, corroborating the diagnosis. Prompt surgical intervention was crucial due to the rapid decline in testicular viability, with the patient undergoing left orchiectomy and right orchidopexy. Intraoperative findings of complete ischemic necrosis necessitated the removal of the left testis. Postoperatively, the patient received antibiotics, analgesics, and antiemetics, facilitating a smooth recovery and discharge within three days. Overall, this study underscores the importance of a comprehensive approach involving early diagnosis, surgical expertise, and vigilant postoperative care in managing this time-sensitive condition effectively.



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## INTRODUCTION

Scrotal emergencies, particularly testicular torsion, pose significant challenges in the emergency department, accounting for a notable fraction of all visits.<sup>[1]</sup> Testicular torsion represents a critical condition where the spermatic cord twists, compromising blood flow to the testicle.<sup>[2]</sup> This ischemic event leads to the rapid onset of severe scrotal pain, necessitating urgent medical attention. The condition predominantly affects younger males, often under 25 years, and can occur spontaneously or be triggered by physical exertion or trauma.<sup>[3]</sup> Early diagnosis is paramount as testicular viability declines rapidly within six hours of symptom onset, underscoring the urgent need for swift evaluation and intervention to prevent irreversible testicular damage.<sup>[4]</sup> Testicular torsion is a twisting of the spermatic cord and its contents and is a surgical emergency, with an annual incidence of 3.8 per 100,000 males younger than 18 years. Historically, the annual incidence has been closer to one per 4,000. It accounts for approximately 10% to 15% of acute scrotal disease in children, and results in an orchiectomy rate of 42% in boys undergoing surgery for testicular torsion.<sup>[5]</sup>

Understanding the etiology and pathophysiology of testicular torsion reveals insights into its clinical management and outcomes. The condition typically arises from anatomical anomalies like the bell clapper deformity, where inadequate fixation of the tunica vaginalis predisposes the spermatic cord to torsion. Neonates, too, are susceptible due to insufficient adherence of tunica vaginalis to the gubernaculum, leading to extra vaginal torsion. Diagnosis hinges on clinical presentation—acute unilateral scrotal pain with associated symptoms such as nausea, vomiting, and occasionally lower abdominal discomfort.<sup>[6,7]</sup>

Physical examination may reveal a high-riding testicle, erythema, swelling, and absence of the cremasteric reflex.<sup>[6]</sup> Diagnostic tools like ultrasound, despite their high specificity, require expert interpretation to confirm the diagnosis and guide timely surgical intervention crucial within the narrow window of salvageability, ideally within six hours of symptom onset.<sup>[6]</sup> The TWIST scoring system assesses the likelihood of testicular torsion based on specific history and physical examination parameters, assigning points as follows: testis swelling (2 points), hard testis (2 points), absent cremasteric reflex (1 point), nausea/vomiting (1 point), and high-riding testis (1 point). Studies have validated this system, showing that a TWIST score over 5 predicts testicular torsion with 100% positive predictive value (PPV), while a score under 2 predicts its absence with 100% negative predictive value (NPV). Initially developed and validated for the pediatric population, the TWIST scoring system helps

prioritize patients for urgent surgical intervention, especially when imaging resources are limited or delayed. [6,8,9,10]

Diagnostic imaging, specifically scrotal ultrasonography, is essential in confirming the diagnosis of testicular torsion. The ultrasound findings in this case were definitive, showing no vascularity in the left testis and characteristic changes in the epididymis, consistent with torsion. The use of color Doppler ultrasound is particularly valuable as it provides real-time assessment of blood flow, helping to distinguish between torsion and other conditions like epididymitis or orchitis. However, the high specificity and sensitivity of ultrasound must be interpreted by experienced clinicians to ensure accurate diagnosis and timely surgical intervention. [11,12,13]

The management of testicular torsion involves urgent surgical exploration and detorsion. In this case, the patient underwent left orchiectomy and right orchidopexy. The decision for orchiectomy was based on the intraoperative findings of complete ischemic necrosis of the left testis, which indicated that the testicle was non-viable. This underscores the importance of rapid intervention; delays can result in testicular loss and subsequent complications such as infertility and endocrine dysfunction. Right, orchidopexy was performed as a prophylactic measure to prevent future torsion in the contralateral testis, a standard practice given the anatomical predisposition for bilateral torsion. [14,15] We are reporting a case of a 15-year-old teenager who came to the emergency department with complaints of scrotal pain and delay in hospitalization resulting in the loss of one of his testes.

## **CASE REPORT**

A 15-year-old male presented to the emergency department with left testicular and inguinal pain, which began after being hit in the lower abdominal region by a ball the previous day. Initially, applying ice reduced the pain for a few hours, but he then experienced a sudden increase in pain. He also reported nausea and had four episodes of vomiting. The patient had no comorbidities, was not on any medications, had no drug allergies, and had no prior surgical history. His family medical history was unremarkable, and he did not smoke or drink alcohol. He had a history of typhoid five years prior.

On general and systemic examination, no significant abnormalities were found. The patient denied any chills, fever, or recent trauma. The skin covering the scrotum appeared smooth, normal, and congested, with no noticeable increase in temperature. The left epididymis and

testicle were enlarged and tender, with a negative Prehn's test and diminished cremasteric reflex. The TWIST score was determined to be 7. The right testicle showed normal findings, and the remainder of the systemic examination was essentially normal.

## DISCUSSION

This case report details the presentation, diagnosis, and treatment of a 15-year-old male who was admitted to the hospital with complaints of pain in the left testicle and groin area following an injury the previous day. The patient also experienced nausea and vomiting after the initial injury. Initial examination revealed the skin over the scrotum appeared smooth and normal, though congested, with no apparent increase in temperature. The left epididymis and testicle were enlarged and tender, and both the Prehn's test and cremasteric reflex were negative, resulting in a TWIST score of 7. The right testicle showed normal findings, and the rest of the systemic examination was unremarkable.

Laboratory tests indicated a B-positive blood picture with leucocytosis ( $15.2/\mu\text{L}$ ), thrombocytosis ( $5.02$  lakhs/ $\mu\text{L}$ ), and erythrocytosis ( $6.1 \times 10^{12}/\text{L}$ ), with predominantly neutrophilia, eosinophilia, lymphocytosis, and elevated MCV, MCH, and MCHC values. Midstream urinalysis revealed 2+ leukocytes, and the prothrombin time was prolonged. Liver and kidney function tests were normal, and HIV and HBsAg tests were negative. An emergency scrotal ultrasound showed the right testis as normal with homogeneous parenchymal echoes and no signs of orchitis. However, the left testis had no blood flow on colour Doppler imaging, and the left epididymis exhibited a snail shell-shaped curl.

The diagnosis of left testicular torsion was confirmed by scrotal ultrasonography, which showed no vascularity in the left testis and characteristic epididymal changes consistent with torsion. Consent was obtained for a left orchiectomy and right orchidopexy, and the patient was promptly taken to the emergency department for a scrotal exploration. During the procedure, the senior urologist performed a left orchiectomy due to complete ischemic necrosis of the seminiferous tubules and interstitial haemorrhage observed in the dark-coloured left testis. A simultaneous right orchidopexy was performed. Intraoperatively, the left testis appeared black, and upon capsulotomy, dark blood was observed with no viable tissue present.

The patient's clinical presentation aligns with the diagnostic criteria for left testicular torsion, leading to a provisional diagnosis of Left Torsion tests.

Post-operatively, the patient received intravenous antibiotics (IV Augmentin Duo 1.2 gm BD), pain management (IV Paracetamol 1 gm TID), and an antiemetic (IV Zofen 4 mg OD). The patient recovered well after surgery and was discharged on the third postoperative day with the following medications: Augmentin Duo 625 mg twice a day after food for 5 days, Pan-D capsule 40 mg once a day before breakfast for 5 days, and Ultracet tablet thrice a day after food for 3 days. He was advised to follow up at the urology department after five days.

## CONCLUSION

This case of a 15-year-old male with testicular torsion underscores the critical importance of prompt diagnosis and intervention. Early recognition, swift evaluation, and immediate surgical management are vital in preserving testicular function and preventing complications. The patient's successful recovery and discharge within three days demonstrate the effectiveness of timely surgery and appropriate postoperative care. Follow-up is essential to monitor for complications and ensure the health of the contralateral testis. This case also highlights the importance of educating adolescents and their caregivers about the signs and urgency of testicular torsion, as early presentation to the emergency department can significantly improve outcomes.

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