Case Report

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Case report: testicular ischemia secondary to missed epididymal torsion: a diagnostic pitfall

Abstract

Epididymal torsion is a critical surgical emergency where salvage rates are highly time dependent. We present the case of a 15-year-old male with acute scrotal pain, initially misdiagnosed as epididymitis at a private facility. Subsequent evaluation at Saidu Group of Teaching Hospital using Color Doppler Ultrasound (CDU) revealed the pathognomonic "whirlpool sign" and total absence of testicular perfusion. Despite surgical intervention, the delay resulted in testicular gangrene requiring orchidectomy. This case emphasizes the clinical necessity of recognizing specific sonographic markers to differentiate mechanical torsion from inflammatory conditions.

Keywords: Ultrasound, epididymis, Doppler, testis, ischemia

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Introduction

"Acute scrotum" in adolescents presents a significant diagnostic challenge.[1] While epididymo-orchitis is a common inflammatory cause, mechanical torsion of the spermatic cord or epididymis must be considered immediately to prevent permanent organ loss. This study examines the role of advanced radiological findings, specifically the "whirlpool sign,"[2,3] in identifying epididymal torsion when initial clinical presentations are ambiguous or mismanaged.

Case Presentation

A 15-year-old male presented to the Emergency Room (ER) at Saidu Group of Teaching Hospital (SGTH) with severe, localized left testicular pain.

Initial Assessment: Urine Routine Examination (RE) was normal.

Prior Misdiagnosis: The patient had an initial ultrasound in a private setup that suggested epididymitis, leading to 24 hours of conservative treatment.

Secondary Presentation: Due to persistent pain, the patient presented to the Surgical OPD the following morning.

Radiological Evaluation at SGTH

Repeat Color Doppler Ultrasound (CDU) was performed by the radiology team, revealing:

The Whirlpool Sign: A spiral, twisted configuration of the epididymis and spermatic cord was clearly visualized, confirming torsion.

Vascularity: Total absence of blood flow in the left testis was documented on Doppler.

Parenchymal Texture: The testis appeared heterogeneous, indicating advanced, irreversible ischemia (Figure 1 & 2).

Surgical findings and outcome

Based on the radiological confirmation of epididymal torsion and testicular ischemia, the patient underwent immediate surgical exploration.

Figure 1 Color Doppler showing "whirlpool sign" in the epididymis.

Figure 2 Grayscale ultrasound showing heterogeneous echo texture of ischemic testis.

Intra operative observation: Intraoperative findings confirmed epididymal torsion which was twisted. The left testis was found to be completely gangrenous and non-viable.

Procedure: A left-sided orchidectomy was performed to prevent further complications (Figure 3 & 4).[4]

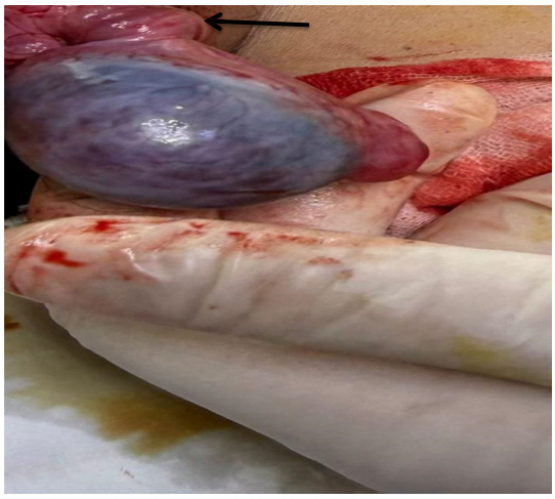

Figure 3 Intraoperative view showing a gangrenous testis owing to twisted epididymis pointed with arrow.

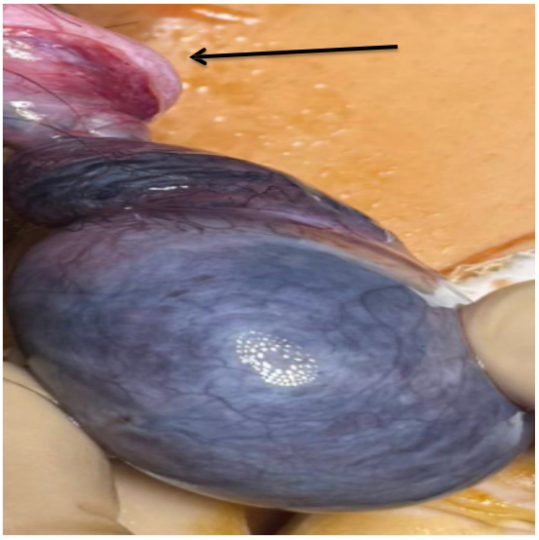

Figure 4 Post-surgical specimen confirming total necrosis and gangrenous change. We can see twisted epididymis pointed with arrow.

Discussion

The salvage rate for ischemic testis drops significantly after 6 to 12 hours. Testicle survival after torsion relies entirely on how fast the blood supply is restored, with overall salvage data ranging from \(41.5\%\) to \(70.9\%\) across various studies [4]. If the testicle is torsed, survival time drops.

0–6 hours: \(\approx 90\%\) to \(100\%\) salvage rate 6–12 hours: \(\approx 50\%\) to \(79\%\) salvage rate 12–24 hours: \(\approx 20\%\) to \(54\%\) salvage rate Over 24 hours: \(<10\%\) to \(18\%\) salvage

In this case, the normal urine RE and the initial misdiagnosis of "epididymitis" at a general facility led to a critical delay. The "whirlpool sign" is a highly specific marker for torsion[2,3] that, if identified early, can prevent organ loss. This study highlights that radiological expertise in a teaching hospital setting like SGTH is vital for identifying these subtle but definitive signs that general setups may overlook.[5]

Conclusion

Epididymal torsion is a devastating variant of acute scrotum. This case underscores that a diagnosis of epididymitis in an adolescent should be questioned if there is no laboratory evidence of infection and if specialized Doppler findings like the whirlpool sign are present.

Acknowledgements

None.

Conflicts of interest

The authors declare that there are no conflicts of interest.

References

1. Kalfa N, Veyrac C, Lopez M, et al. Multicenter assessment of ultrasound of the spermatic cord in children with acute scrotum: the whirlpool sign. *J Urol.* 2007;177(1):297–301.
2. Baud C, Veyrac C, Couture A, et al. Spiral twist of the spermatic cord: a reliable secondary extra-testicular sonographic sign of testicular torsion. *Pediatr Radiol.* 1998;28(12):950–952.
3. Vijayaraghavan SB. Sonographic differential diagnosis of acute scrotum: real-time whirlpool sign as a reliable indicator of testicular torsion. *J Ultrasound Med.* 2006;25(5):563–571.
4. Sharp VJ, Kieran K, Arlen AM. Testicular torsion: diagnosis, evaluation, and management. *Am Fam Physician.* 2013;88(12):835–840.
5. Mellick LB, Sinex JE, Gibson RW, et al. A systematic review of testicular torsion in the emergency department. *J Emerg Med.* 2017;53(3):318–324.