



EXPLORING GENITOURINARY TRAUMA: A CASE STUDY OF POST-TRAUMATIC NONVIALE ECTOPIC TESTIS

Radiology

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ABSTRACT

This case report describes the clinical course of a young male patient who presented with an empty left hemiscrotum following a motor vehicle accident. Initial ultrasonography (USG) revealed a nonviable ectopic left testis located in the left inguinal region, characterized by an oedematous spermatic cord and absent vascularity. Subsequent magnetic resonance imaging (MRI) confirmed the diagnosis, which was further correlated with intraoperative findings during surgical exploration. This case underscores the diagnostic utility of imaging modalities in assessing genitourinary trauma and highlights the importance of a multidisciplinary approach in managing such cases.

KEYWORDS

Genitourinary trauma, ectopic testis, ultrasonography, magnetic resonance imaging, intraoperative findings, surgical exploration.

INTRODUCTION:

Traumatic injuries to the genitourinary system can lead to a spectrum of complications, including testicular injuries and ectopic testes(1). Ectopic testes, especially when nonviable, present unique diagnostic and management challenges(1,2). Imaging modalities such as ultrasonography (USG) and magnetic resonance imaging (MRI) play a pivotal role in accurately diagnosing these abnormalities and guiding appropriate treatment strategies(1).

This case highlights the significance of comprehensive radiological assessment in genitourinary trauma cases, particularly those involving ectopic testes. The correlation between imaging findings and intraoperative observations underscores the diagnostic accuracy and clinical relevance of imaging modalities in such scenarios. A multidisciplinary approach involving radiologists, urologists, and surgeons is essential for optimal patient care and outcomes in genitourinary trauma cases.

Case Presentation:

A young male presented to the emergency department following a motor vehicle accident. The patient complained of severe pain in the lower abdomen and left groin area. Clinical examination revealed an empty left hemiscrotum, with no palpable testis. There were no signs of external genital trauma. Initial vital signs were stable, and there were no other associated injuries noted on physical examination.

Radiological Assessment:

Given the suspicious clinical findings, an urgent ultrasonography (USG) of the scrotum and left inguinal region was performed. The USG revealed the absence of the left testis within the scrotal sac. Instead, the left testis was identified in the left inguinal region, showing features suggestive of nonviability, including an oedematous spermatic cord and absent testicular vascularity on colour doppler flow imaging (Figure 1). No other abnormalities were noted in the scrotal contents or surrounding structures on USG.

Based on the USG findings, a provisional diagnosis of post-traumatic nonviable ectopic left testis was made. Further imaging with magnetic resonance imaging (MRI) was recommended to confirm the diagnosis and assess the surrounding anatomy in more detail. The patient was admitted for close monitoring and preparation for MRI evaluation.

MRI of the pelvis and scrotum was performed to further characterize

the ectopic left testis (Figure 2) and evaluate any associated abnormalities. The MRI findings were consistent with the initial USG assessment, confirming the presence of a nonviable ectopic left testis located in the left inguinal region. The testis appeared to be in left inguinal region with spermatic cord showed oedema

Additionally, the MRI provided detailed anatomical information regarding the surrounding structures, including the seminal vesicles, vas deferens, epididymis, and adjacent blood vessels. No evidence of intra-abdominal injuries or abnormalities was noted on the MRI scan. The combined findings from USG and MRI were crucial in guiding the management plan for the patient.

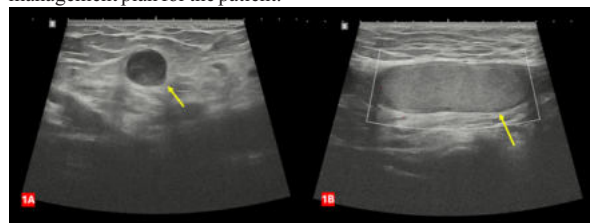


Figure 1: 1A shows diffuse hypoechoic Edematous spermatic cord. 1B figure shows left testis with altered echotexture while on colour doppler shows absent colour flow.

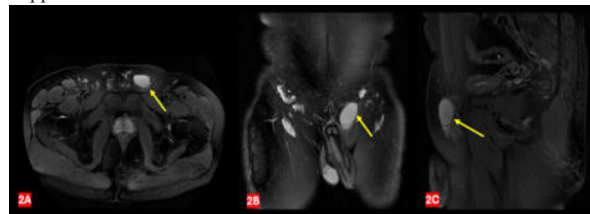


Figure B: MRI Axial (2A), Coronal (2B), Sagittal (2C) shows left testis in the region of left inguinal region with minimal adjacent T2 hyperintense fluid collection.

DISCUSSION:

Ectopic testes are a rare but significant complication of genitourinary trauma, particularly in cases of blunt trauma or pelvic fractures(1–4). The displacement of the testis from its normal scrotal position can lead

to vascular compromise and subsequent ischemic changes, rendering the testis nonviable(3,5). Prompt and accurate diagnosis is essential for determining the appropriate management approach(3,5).

In this case, the initial USG provided valuable information regarding the location and viability of the left testis, prompting further evaluation with MRI for confirmation and detailed assessment. The MRI findings corroborated the USG findings, confirming the nonviability of the ectopic testis and ruling out associated intra-abdominal injuries or abnormalities.

Surgical intervention was planned based on the imaging findings, aiming to remove the nonviable ectopic testis and prevent potential complications such as infection or torsion. The multidisciplinary approach involving radiologists and urologists was instrumental in coordinating the patient's care and ensuring optimal outcomes.

This case highlights the importance of comprehensive radiological assessment, including USG and MRI, in diagnosing and managing post-traumatic ectopic testes. The integration of imaging findings into clinical decision-making allows for timely intervention and improved patient outcomes in genitourinary trauma cases.

CONCLUSION:

In conclusion, this case report highlights the pivotal role of ultrasonography (USG) and magnetic resonance imaging (MRI) in accurately diagnosing and characterizing post-traumatic nonviable ectopic testes. The correlation between imaging findings and intraoperative observations facilitated precise surgical planning, leading to timely intervention and optimal patient outcomes. This underscores the importance of a multidisciplinary approach and the integration of advanced imaging modalities in managing genitourinary trauma-related complications, ensuring comprehensive patient care and treatment efficacy.

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Conflict of Interest: The authors declare no conflict of interest regarding this case report.

Ethical Clearance: This case report was conducted in accordance with ethical guidelines and received approval from the institutional review board.

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