

Traumatic testicular torsion: A call to look beyond the obvious

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Abstract

Blunt scrotal trauma results in different forms of injuries such as hematoma, rupture of the testis, and testicular torsion. The diagnosis of trauma-induced testicular torsion in patients with blunt scrotal trauma requires a high index of suspicion. As early diagnosis and management of traumatic testicular torsion obviate testicular losses, an urgent testicular scan is necessary in cases of suspected traumatic torsion, and if not readily available or indeterminate, scrotal exploration is promptly indicated. Reported herein is a case of traumatic testicular torsion which was managed as a straightforward blunt scrotal trauma in a private health facility. He eventually had an orchidectomy when he presented to us 4 months later on account of a marked reduction in testicular volume. This case report reiterates the need to look beyond the obvious in patients with blunt scrotal trauma and the necessity of testicular scan and scrotal exploration in testicular salvage in suspected trauma-induced testicular torsion.

Keywords: Blunt scrotal trauma, orchidectomy, testicular loss, testicular torsion

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INTRODUCTION

Traumatic testicular torsion is rare with a reported incidence of about 4%–8% of all testicular torsion.^[1,2] With early diagnosis, testicular salvage may be guaranteed and untoward complications mitigated.^[3] The traumatized scrotum is usually swollen and tender making it difficult to carry out a thorough scrotal examination.^[4] Ultrasonography assesses the integrity of the traumatized scrotal contents and helps in early diagnosis of trauma-induced testicular torsion.^[4]

This case report highlights the need to look beyond only clinical examination and the role of ultrasonography and

urgent scrotal exploration in the prompt diagnosis and management of trauma-induced testicular torsion.

CASE REPORT

The patient was a 14-year-old male student who had a kick on his scrotum while playing in school 4 months before presentation. He immediately developed a severe and continuous scrotal pain. He had no significant scrotal swelling and no difficulty with voiding. Following this, he was immediately taken to a private health facility where he was examined and given some analgesics and no investigation was done. Two months later, he noticed a gradual and progressive reduction in the volume of the right testis necessitating his presentation to our clinic.

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Examination revealed a nontender right testis which was markedly smaller and hanging higher than the left testis. The epididymis was thickened and nontender. The contralateral testis was normal in volume but lying horizontally.

On ultrasonic examination, the right testis was reduced in size with a volume of 3.4 ml. It showed a normal parenchymal echotexture, but Doppler interrogation demonstrated a hypoechoic right testis with no internal blood flow [Figure 1a]. The head of the epididymis was thickened. The volume of the left testis was 14.8 ml with normal blood flow on Doppler interrogation [Figure 1b]. His full blood count and urinalysis were normal.

Following the above, he was booked for scrotal exploration, right orchidectomy, and left orchidopexy. At surgery, the right testis was pale, atrophic with no bleeding on needle prick. The cord had torsed 360° [Figure 2]. The right testis was excised, and contralateral orchiopexy was done. The postoperative period was uneventful, and the patient has been on regular follow-up. The eventual pathological report established the diagnosis of testicular torsion.

DISCUSSION

Scrotal trauma is rare, accounting for about 1% of all trauma-related injuries.^[5] With the crushing of the testis against the symphysis pubis as the mechanism of injury, blunt trauma is the most frequent cause of testicular injury. Other causes include penetrating injuries and iatrogenic injuries from groin surgeries.^[6]

The testis enjoys some remarkable anatomic protection, due to its mobility within the scrotum, the toughness of the encompassing tunica vaginalis, and the retractile nature of the cremaster muscle.^[6,7] That said, testicular injuries are more common on the right hemiscrotum probably due to the higher location of the right testis, making it more frequently crushed against the pubic bone.^[6,7] This may be why the right testis of the index patient was affected.

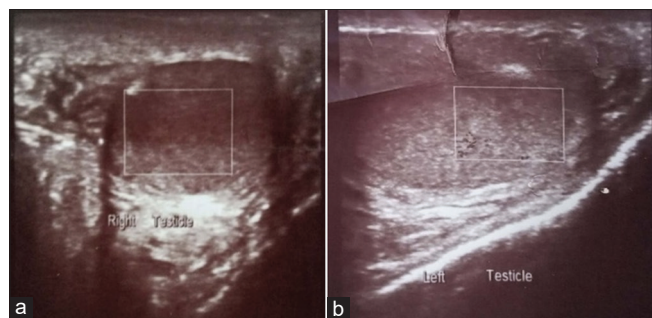


Figure 1: (a) Doppler sonography of the left testis showing normal testicular perfusion. (b) Doppler sonography of the right testis showing absent testicular perfusion

In patients with predisposing factors for testicular torsion such as bell clapper deformity and horizontal lie of the testes, scrotal trauma may induce an abrupt vigorous contraction of the cremaster muscle which surrounds the spermatic cord, resulting in testicular torsion.^[1,2,6] This trauma-induced testicular torsion is seen in 4%–8% of cases of testicular torsion.^[1,2] The index patient had a horizontal lying left testis on examination which is believed to be the predisposing factor.

History-wise, it may be difficult to differentiate between a straightforward blunt scrotal trauma and trauma-induced testicular torsion as both present with a history of a preceding scrotal trauma, scrotal pain, and swelling and occasional nausea and/or vomiting. The pain in traumatic testicular torsion may be disproportionately heightened compared to the force of injury.

In patients with scrotal trauma who present early, physical examination is usually intolerable due to the excruciating pain. Generally, however, the patient with testicular trauma often presents with a tender, swollen, ecchymotic hemiscrotum.^[8] These features are usually absent in patients with delayed presentation or those presenting with complications such as testicular atrophy. The index patient presented to us 4 months after the scrotal trauma due to the progressive reduction in testicular volume and has none of these acute features.

High-resolution Doppler ultrasonography or Duplex ultrasound of the scrotum, which can be performed with minimal discomfort, is the favored investigation for the examination of the traumatized scrotum with suspected torsion.^[4] They help in the evaluation of the scrotal contents and provide distinct information on the testicular architecture, blood flow within the scrotal structure, and



Figure 2: Intraoperative picture showing a pale shrunken right testis with 360° counterclockwise torsion and a normal well-vascularized left testis

presence of intra- or extra-testicular hematoma, as well as fluid collections.^[4,6] Either of these (preferably Duplex scan) should be urgently performed in all patients with blunt scrotal injuries to promptly identify and differentiate trauma-induced testicular torsion from other forms of testicular injuries.^[4] Salvage of the testis is dependent on the rapid differentiation of surgical from nonsurgical emergencies. Where this distinction is not made early or missed, the resultant outcome is usually orchidectomy.^[9]

There is no consensus on the exact algorithm to be followed in patients with suspected torsion.^[10] Even an experienced clinician cannot make a clear-cut clinical distinction between testicular torsion and epididymo-orchitis with full assurance.^[8] The conventional evaluation of patients with likely testicular torsion has been clinical evaluation followed by an urgent scrotal ultrasound scan and immediate surgical exploration and detorsion as testicular torsion is a vascular emergency.^[9] Testicular salvage rate is high when detorsion is done within 6 h of onset of symptoms. After 12 h, the probability of testicular salvage becomes very low.^[10] Following the exposure of the testis via an incision on the scrotum and the tunica vaginalis, the testis is detorsed and wrapped in a warm gauze. It is then reassessed after fixing the contralateral testis to prevent torsion on that side. If the testis is viable, orchidopexy is done. If otherwise, orchidectomy is done.

In general, scrotal exploration has low morbidity. A negative exploration rarely results in any long-term complications. When weighing conservative management with the loss of a potentially salvageable testis, it is best to err on the side of exploration as delay in diagnosis or inaccurate diagnosis may result in ischemia, infarction, atrophy, delayed orchiectomy, and decreased fertility.^[1,5,9]

All in all, a distinct message that testicular trauma can precipitate torsion needs to be emphasized. It is all too easy to ascribe the testicular pain following scrotal injuries to just testicular trauma. Medical practitioners should always look deeper than the obvious scrotal trauma. This demands that all clinicians should have a high index of suspicion when managing patients with blunt scrotal injuries.

CONCLUSION

The possibility of testicular torsion should be borne in mind when managing patients with blunt testicular trauma. Doppler or Duplex scan should be done to rule this out in patients with blunt testicular trauma. Scrotal exploration should be carried out in all suspected cases of traumatic testicular torsion.

Declaration of patient consent

The authors certify that they have obtained all necessary patient consent forms. In the forms, the consent of the parents and assent of the patient have been obtained for his images and other clinical information to be reported in the journal. They understand that his name and initials will not be published and due efforts will be made to conceal his identity.

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Conflicts of interest

There are no conflicts of interest.

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