

Traumatic Testicular Avulsion Following a Motorcycle Accident in Adolescent: A Case Report

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ABSTRACT

Introduction: Traumatic testicular avulsion is a rare and severe urological emergency resulting from blunt scrotal trauma. It necessitates immediate diagnosis and surgical intervention. This case report describes the presentation and management of a complete testicular avulsion in an adolescent following a motorcycle accident. Case Presentation: A 15-year-old male was referred to Dr. Moewardi General Hospital after a motorcycle accident where he sustained a direct impact to his lower abdomen. Open wound on the right scrotum with complete detachment of the right testis, exposure of the spermatic cord, and irregular wound edges was found. The patient underwent emergency surgical exploration, which included debridement, ligation of the spermatic cord, and repair of the scrotal wound. The procedure was successful, and the patient was managed postoperatively with antibiotics and analgesics. Discussion: Testicular avulsion following a motorcycle accident is a urologic emergency. Management requires a multidisciplinary approach to address bleeding control, testicular function preservation, infection prevention, and scrotal reconstruction.

Introduction

Traumatic genitourinary injuries, while relatively uncommon, represent significant urological emergencies that require prompt recognition and management. Among these, traumatic testicular avulsion is an exceptionally rare but severe condition characterized by the complete detachment of the testis from its scrotal attachments.¹ This injury typically results from high-impact blunt trauma to the scrotum or lower abdomen, often associated with mechanisms such as motor vehicle accidents, direct assaults, or falls onto rigid objects.² The force of the impact can cause the testis to be forcibly expelled from the tunica vaginalis, leading to its complete avulsion.

The clinical presentation of testicular avulsion is dramatic, typically featuring an empty hemiscrotum, an associated scrotal wound, and

often exposure of the spermatic cord structures. Due to its rarity, the condition can present a diagnostic challenge, especially in a busy emergency department where attention may be initially directed toward more obvious life-threatening injuries.³ A systematic approach using the Advanced Trauma Life Support (ATLS) protocol is essential to identify and prioritize all injuries while ensuring that potentially limb- or organ-threatening conditions like testicular avulsion are not overlooked.⁴

The management of testicular avulsion represents a race against time. Immediate surgical intervention is crucial for several reasons: to control hemorrhage, perform necessary debridement of non-viable tissue, address the potential for testicular salvage (though often not possible in complete avulsions), prevent infection, and preserve scrotal function and cosmesis.⁵ The decision between testicular

salvage versus orchiectomy depends on factors including the time since injury, degree of contamination, and viability of the testicular tissue.⁶.

Case Presentation

A 15 year old male patient presented to the emergency department six hours after motorcycle accident. the patient was riding motorcycle which the brake is failure, patient was fell into a ditch while avoiding a hole on the road. The patient fell with lower stomach hit the motorcycle's dashboard. There were no history of unconsciousness, vomiting, and seizure. After the incident, patient complained of pain on the right scrotum and found blood spots on his pants. By the helper, the patient was brought PKU Karanganyar Hospital, done physical examination and found the right testis was detached from the scrotum. Due to limited facilities, patient was referred to Dr. Moewardi Hospital. On physical examination, the patient was intoxicated, afebrile, and hemodynamically stable. The genital examination revealed a vulnus appertum at right scrotum size 5x2x2cm with no testis at the right side, tissue base and spermatic cord expose, irregular wound egde with tenderness at right scrotum.

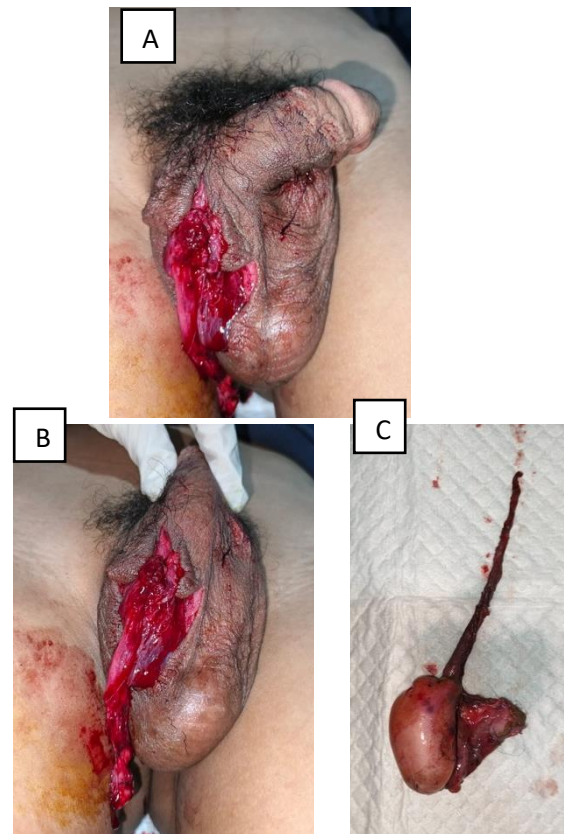


Figure 1. Clinical presentation of complete right testicular avulsion following a motorcycle accident. (A) Open scrotal wound with exposure of the spermatic cord and absence of the right testis. (B) Closer view demonstrating complete avulsion of the right testis with irregular wound edges. (C) Avulsed right testis with attached spermatic cord after surgical removal.

The patient was admitted to the operating room. The right spermatic vessels were retracted but could be located and ligated during surgery. Macroscopic examination of the left testis was normal, with no signs of trauma identified. Debridement was performed and the wound edge was excised. We irrigated the wound with Povidone iodine and NaCl 0.9% solution. Right spermatic cord was returned to proximal position Tunica vaginalis sutured with 3.0 monofilament absorbable continuous. Fascia sutured with 3.0 monofilament absorbable continuous. Cutis and subcutis sutured with 3.0 monofilament absorbable simple interrupted. Applied scrotal support was done and operation accomplished. The patient was managed postoperatively with antibiotics and analgesics.

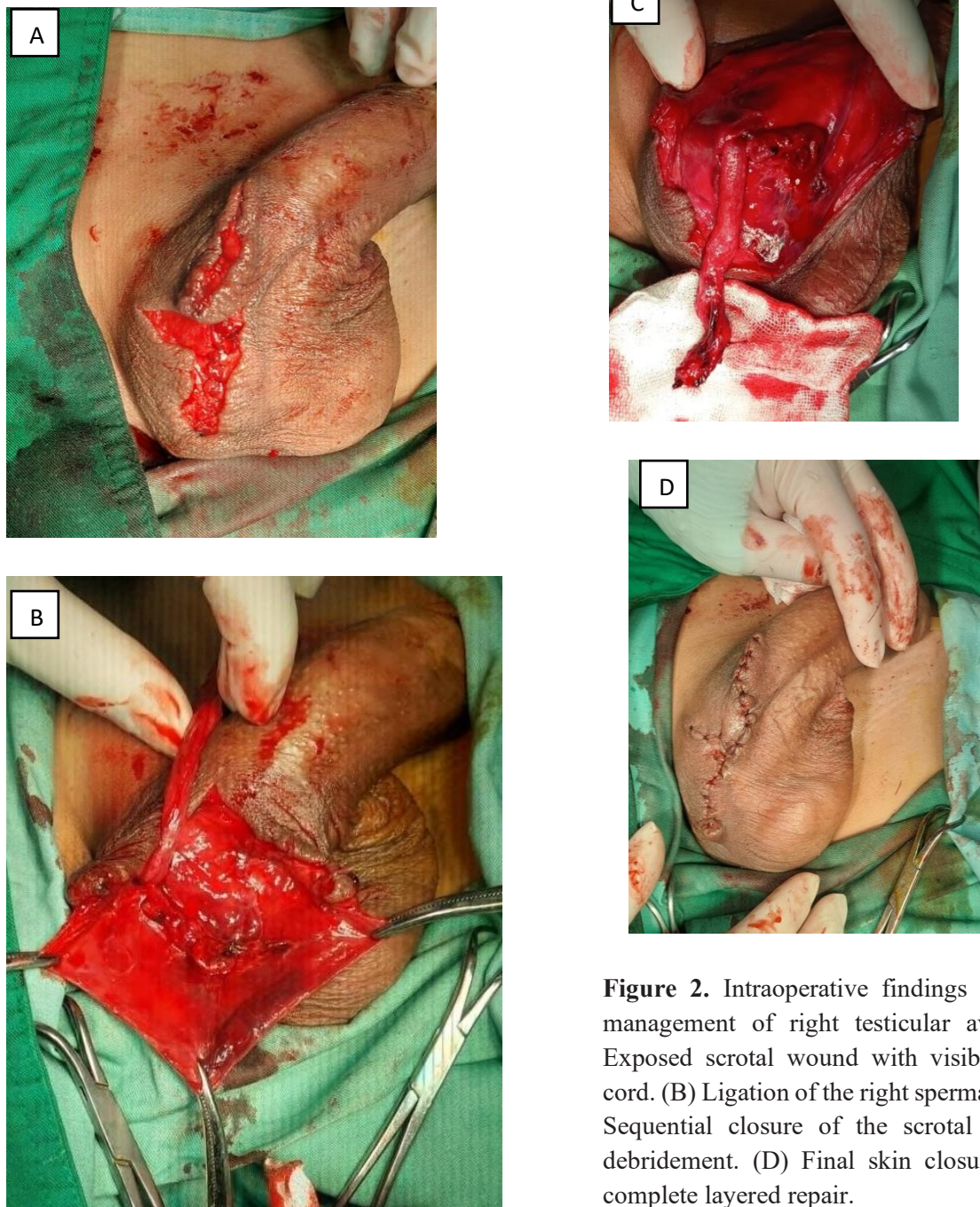


Figure 2. Intraoperative findings and surgical management of right testicular avulsion. (A) Exposed scrotal wound with visible spermatic cord. (B) Ligation of the right spermatic cord. (C) Sequential closure of the scrotal layers after debridement. (D) Final skin closure following complete layered repair.

sampling technique, and carefully reviewing the abstract and conclusions. Analyze or review the journal articles that have been collected based on the search results and those that have been selected, such as looking for similarities, looking for differences, providing views, and comparing journal articles.

The author processes the collected data using the following steps: Reading the research results from each national or international journal

article from which data has been collected. Conducting a merger and evaluation by classifying journal articles according to inclusion criteria and those that do not meet exclusion criteria. Compiling the results and conclusions of

Discussion

Traumatic testicular avulsion is an exceptionally rare urological emergency that can have lasting effects on both physical and psychological health. Although scrotal trauma itself makes up only a small fraction of all genital injuries, cases involving complete testicular avulsion are even less common.¹ Most reported incidents occur after high-energy accidents, especially motorcycle crashes, where the scrotum is forcefully compressed against hard surfaces like the motorcycle dashboard or fuel tank.²

In our case, the patient experienced a blunt impact to the lower abdomen and scrotum during a motorcycle accident, resulting in the right testis being completely torn away from the scrotum with the spermatic cord exposed. Clinically, the finding of an empty hemiscrotum with associated bleeding and visible spermatic structures leaves little doubt about the diagnosis.³

As with all trauma cases, the Advanced Trauma Life Support (ATLS) protocol must be followed first to ensure any life-threatening injuries are ruled out or treated before focusing on the genital injury.⁴ Once the patient is stabilized, local assessment becomes the priority. While Doppler ultrasonography can help evaluate testicular blood flow in partial injuries, complete avulsion such as this typically requires urgent surgical management without delay.⁵

The main goals of treatment include controlling bleeding, removing devitalized tissue, reconstructing the scrotum, and preventing infection.⁶ In this case, the surgical team performed ligation of the right spermatic cord because testicular salvage was not possible given the extent of injury. Some literature mentions testicular reimplantation attempts when there is

several journal articles in the form of a research table consisting of the author's name, journal title, journal period, research results, research conclusions, and journal article database.

minimal contamination and ischemia time is under six hours, but the likelihood of success remains low.⁷

When managed promptly and appropriately, the overall outcome is generally good. However, losing a testis especially for a teenage patient can carry emotional and psychological weight beyond the immediate surgical recovery. Early counseling about future options, such as testicular prosthesis implantation, may help address body image and self-esteem concerns.⁸ Long-term follow-up to assess hormonal function and fertility is also recommended, particularly if the remaining testis is ever compromised.⁹

Conclusion

Traumatic testicular avulsion, an exceptionally rare urological emergency, demands immediate surgical intervention to prevent complications and ensure optimal recovery. Early recognition, adherence to trauma protocols, and prompt surgical management are crucial for preserving scrotal integrity and supporting long-term physical and psychological outcomes.

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