

Penetrating trauma to the male external genitalia: Case report and clinical management

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Abstract

Penetrating trauma to the male genital organs, especially involving a foreign body, is an unusual but critical clinical scenario with potential consequences for sexual health, urinary function, and the patient's quality of life. When such injuries occur in the context of a road traffic accident, the complexity of their management is further heightened. This case report presents a unique case of a 26-year-old motorcyclist who suffered open trauma from a 5 cm metallic foreign body projecting at the base of the penis following a car collision. The clinical evaluation, diagnostic challenges, surgical approach, and successful outcome are discussed. Management of penetrating pelvic trauma requires a multidisciplinary approach, careful planning, and postoperative vigilance to minimize complications and promote healing. This case contributes valuable insights to the medical community, emphasizing the significance of imaging, precise surgical planning, and interdisciplinary collaboration for optimal patient care in such rare and severe injuries.

Keywords: Pelvis; Foreign body; Wounds; Penetrating

1 Introduction

Trauma of the male genital organs caused by a foreign body is uncommon, it can have serious implications for sexual health, urinary function, and the patient's quality of life. When these injuries occur in the context of a road traffic accident, the complexity of their management is further compounded by multiple variables coming into play. Our objective is to shed light on the peculiarities of this unique injury, examine the diagnostic and therapeutic challenges we encountered, and emphasize the importance of a coordinated approach to optimize clinical outcomes.

2 Observation

A 26-year-old motorcyclist was struck by a car, resulting in an open trauma due to the projection of a 5 cm metallic foreign body at the base of the penis (figure 1). The patient was immediately transported to the emergency department of the CHU Hassan II Hospital in Fez for management. Upon initial evaluation, the patient was conscious, stable hemodynamically and respiratorily. The clinical examination revealed a wound at the base of the penis measuring 2 cm through which a metallic foreign body protruded. Sensitivity was noted in the right inguinal area, and limited mobility of the right lower limb was reported. Examination of the scrotum and penis was normal, with preserved peripheral vascular pulses and sensory function. A pelvic X-ray revealed the presence of a 5 cm metallic foreign body along the pubic symphysis (figure 2). The CT Scan did not show bladder perforation but did visualize a non-displaced fracture

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line of the pubic symphysis, which was treated orthopedically. After the careful introduction of a size 14 Foley catheter, prophylactic antibiotics, and a third-generation cephalosporin, the patient was transported to the operating room.

2.1 Surgical Procedure

A fistulotomy-type incision was performed to visualize the entry wound and minimize neurovascular deficits and additional tissue damage in the vicinity. Exploration of the ipsilateral testicle did not reveal any specific injury. A midline suprapubic incision was made to better explore the bladder and assess the depth of the foreign body. It revealed diffuse bleeding along the muscular wall. After meticulous hemostasis, the foreign body was rigorously removed. Debridement and thorough irrigation were performed without significant bleeding. A negative-pressure wound therapy system was applied before suturing the muscles. Postoperative management was uneventful. Antibiotic therapy and thromboprophylaxis were maintained during hospitalization, and the Foley catheter was removed on day 2 post-surgery. The patient was discharged on day 5 post-admission. A 3-week follow-up examination was normal, with no residual effects.

3 Discussion



Figure 1 Clinical Image of a Foreign Body Penetrating at the Base of the Penis



Figure 2 Radiological image demonstrating a foreign body penetrating in contact with the pubic symphysis

Penetrating pelvic traumas often result from a violent force applied to this region. This can occur following a road traffic accident, workplace accident, gunshot wound, falling onto a sharp object, or similar incidents. The severity of these injuries is often high due to the proximity of vital organs, major blood vessels, nerves, and genital structures. Our patient

recovered without incident, likely due to the relatively straightforward path of the foreign body, absence of associated injuries to intra-pelvic structures such as the colon, bladder, and vasculo-nerve elements.



Figure 3 Surgical exploration with dual approach prior to foreign body extraction

These traumas demand rapid and comprehensive clinical evaluation to search for any instability that could jeopardize the patient's life. Imaging studies, such as computed tomography (CT) or magnetic resonance imaging (MRI) (1), are necessary to assess the extent of internal injuries, the location of the foreign body, and the presence of hemorrhagic and visceral complications requiring surgical intervention. In our case, understanding the exact mechanism of the trauma allowed us to identify the trajectory of the metallic object projected at the base of the penis. Clinical examination enabled us to assess the patient's overall condition, identify the foreign body, and perform additional diagnostic tests such as CT to evaluate the severity of the injury, precisely locate the foreign body, detect active bleeding, and plan the surgical intervention (2).

Careful planning of the surgical approach is one of the most crucial aspects of managing penetrating foreign bodies. An improper incision, especially in complex anatomical regions, can make object extraction more difficult and risky. We chose a dual incision approach, consisting of a fistulotomy-type incision and a midline suprapubic incision, to allow better exploration of soft tissues, vascular and neural elements, and pelvic organs and to facilitate the protected removal of the foreign body.

The "fistulotomy-type incision" was described in 1983 by Ketterhagen et al., connecting entry and exit wounds and only interrupting it, if necessary, to preserve vital structures. Since then, several cases have been recorded using this procedure. Other types of incisions may also be proposed, such as an ilioinguinal approach with an incision along the iliac crest to the anterior superior iliac spine and along the inguinal ligament to the symphysis. After the metallic foreign body extraction, meticulous wound care should be considered. Potential complications include iatrogenic vascular injuries, venous thrombosis, lymphedema, and infection. Finally, to reduce the risk of severe wound-related infections, debridement of the wound, thorough irrigation, and the placement of drainage and appropriate antibiotic therapy are recommended.

4 Conclusion

The management of penetrating pelvic trauma remains a complex challenge, requiring multidisciplinary expertise and careful coordination. The encouraging clinical outcomes of this case emphasize the importance of early and appropriate management, as well as vigilant postoperative monitoring to minimize complications and promote healing. Ultimately, this case report contributes to the expansion of medical knowledge regarding the management of penetrating pelvic trauma. It offers valuable insights to healthcare professionals and underscores the importance of imaging, precise surgical planning, and interdisciplinary collaboration to provide optimal care to patients facing such rare and severe injuries.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

- [1] Hopp SJ, Culemann U, Pohlemann T. Surgical management of pelvic penetrating trauma—Case report and review of literature. *Injury* [En ligne]. Oct 2009 [cité le 1 oct 2023];40(10):1115-7. Disponible : <https://doi.org/10.1016/j.injury.2009.01.017>
- [2] Gayer G, Lubner MG, Bhalla S, Pickhardt PJ. Imaging of Abdominal and Pelvic Surgical and Postprocedural Foreign Bodies. *Radiol Clin North Am* [En ligne]. Sep 2014 [cité le 1 oct 2023];52(5):991-1027. Disponible : <https://doi.org/10.1016/j.rcl.2014.05.006>