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Case Report

Case Report : A-12-Years Old Boy with Penetrating Scrotal Trauma grade III at Bhayangkara Hospital, Kupang, East Nusa Tenggara, Indonesia

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Abstract
A 12-year-old boy was referred to the Emergency Room (ER) after experiencing penetrating trauma to his right scrotum caused by the iron of the bicycle seat. There were no urinary complains and the vital signs were good. Scrotal exploration was performed to repair the testicular trauma.

Keyword: Boy, Penetrating Scrotal Trauma, Scrotal exploration

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Introduction

External genitalia in males are at high risk of injury in trauma because of their extracorporeal location, but scrotal trauma is a rare surgical emergency accounting for less than 1% of all traumatic injuries, largely because of its safe anatomical location and mobility. The injuries are predominantly more prevalent in 15–40 years of age group. However, 5% of trauma patients are less than 10 years old. In general, there are two broad domains to consider when evaluating scrotal trauma: blunt vs. penetrating injury. [1,2]

Blunt trauma scrotum contributing to 80% scrotal injuries is usually caused by sports like road bicycling, horse-back riding, motorcycle riding, especially on bikes with a dominant gas tank. The blunt trauma injury caused by a blow forces the testicle against the thigh or pubis and results in intra-testicular bleeding. The tunica albuginea is believed to get ruptured only when the trauma force exceeds 50 kg. If the bleeding remains within the tunica vaginalis, haematocele results. But when the tunica vaginalis gets torn due to high intratesticular pressure and bleeding, scrotal hematoma forms and presents as an enlargement of the scrotum. [2]

Penetrating trauma contributes to

remaining 20% of scrotal injuries and is caused by firearm (commonest), stab, animal hit and self-inflicted injuries. Additionaly, penetrating injury occurs with associated injuries. Thermal and degloving injuries –are the rarest cause of scrotal injuries. In degloving injury scrotal skin is sheared off, and it often requires skin grafting.[2]

The importance of classifying these types of injuries into classes lies in the special diagnostic and management consideration for each type of injury (fig. 1). A general principle for scrotal trauma, especially with severe injury (e.g., testicular rupture or fracture), is that early operative exploration and repair is the standard of care. Several case series have shown benefit to early exploration, including decreased rates of delayed orchiectomy, quicker resolution of pain, control of bleeding, theoretical concern of anti-sperm antibody production, preservation of spermatogenesis, shorter length of stay in hospital, and earlier return to activity.

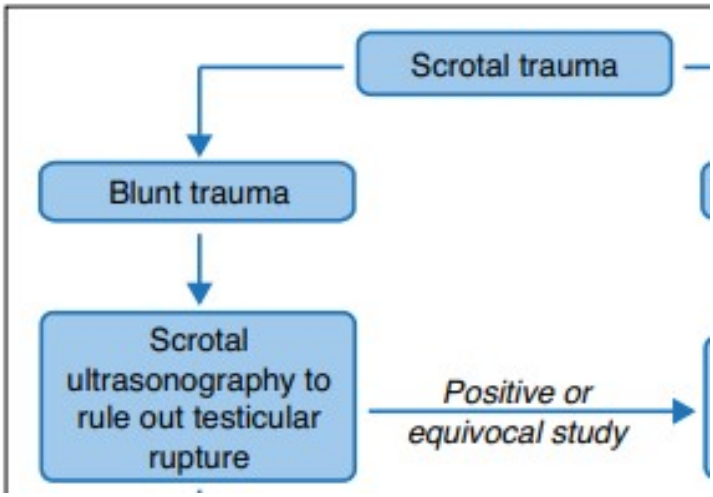

Figure 1. Algorithm of scrotal trauma[1]

Scrotum Anatomy[2]

Scrotum have two compartments that is separated by midline septum which is called median raphe. Each scrotum's compartment contains a spermatic cord, testis, and epididymis. The scrotum wall, from superficial to deep, is formed by several layers, which are : skin, superficial fascia, dartos muscle, external spermatic fascia, cremasteric fascia and internal spermatic fascia. The testes is covered by tunica vaginalis. Tunica albuginea lies deep to the tunica vaginalis, that covers each testis and helps to maintain the shape and integrity of testis. The right testis is more likely to get injured than the left one, because it is more likely to be trapped against the pubis bone and the inner thigh.

Diagnosis

Symptoms that can be observed are pain,

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nausea, vomiting, fainting, and scrotal swelling. Signs that also can be observed are tenderness, redness, swelling, ecchymosis of hemiscrotum, or if it is a penetrating injury, laceration or avulsion can be seen.

Investigations [2]

Standard ultrasound is a sufficient investigation for diagnosis of scrotal injury. High-frequency ultrasound with Doppler flow technique remains the imaging modality of choice for genital trauma. The ultrasound is performed lying supine with the scrotum supported by a towel between the thighs.

Table 1. Types Of Scrotal Trauma (blunt and penetrating)[3]

Condition	Etiology, Presentation	Treatment
Testicular dislocation	Significant blunt-force mechanism (dislocation to the abdomen or to subcutaneous tissues surrounding the external inguinal ring)	Surgical intervention
Testicular rupture	Disruption of the tunica albuginea	Surgical intervention
Testicular contusion	Intratesticular hematoma; intact tunica albuginea	Typically conservative : ice, rest, elevation
Hematocele	Blood accumulation in the tunica vaginalis	Surgical drainage for large hematocele; conservative otherwise
Traumatic torsion	Traumatically induced torsion has been reported	Typically surgical Exploration / intervention
Penetrating injury	Varies depending on cause	Typically surgical exploration/intervention

CASE REPORT

A 12 –year-old boy came to Bhayangkara Hospital's Emergency Room with pain at his genitalia. The injury was caused by cycling accident. Thee patient cycled in medium speed, hit a rock and fell in such way that the seat of his bicycle was detached and the frame of the bicycle seat penetrated his scrotum. During initial assessment, he was clinically stable with normal vital sign. There were no voiding complains, hematuria, abdominal pain or distention. On physical examination, there was an open wound, with the length of 6 cm on his right scrotum, exposing his funiculus spermaticus interna, revealing approximately 5 cm of his right testis. There was no hematoma found at the site of the laceration. There was no abnormality on his laboratory findings.

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Figure 2. A-12-year-old boy with laceration on his right hemiscrotum

No radiology examination was done in this case. Scrotal exploration was performed within two hours after the accident. Laceration ≥25% on his right scrotum was found. However, there was no abnormality on the right testicle. Debridement and wound toilet was performed prior to closing the wound. Primary closure was done by interrupted sutures with 3.0 plain catgut. Wound dressing was changed 24 hours after the surgery. Patient was discharged the day after surgery with no complications or other complains. Outpatient follow up was done three days after the surgery. There were no complains and no signs of infection.

Figure 3. Post scrotal exploration

Discussion

Penetrating scrotal injuries are rare in children and adolescent. This type.of injury most frequently seen after straddle-type falls or laceration of genital skin due to falls on sharp object, as was described in our case reports. Almost all situations of penetrating scrotal injuries require immediate surgical/scrotal exploration with conservative debridement of non-viable tissue since. In our case, the right testis was spared from any damage.

As we can see in the algorithm (fig 1) of managing scrotal injury, there is no advocate for routine preoperative ultrasonography in penetrating injury. Most reports have suggested that early exploration leads to higher testicular salvage rates compared to late exploration, which invariably helps to maintain endocrine function and provide

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psychological benefit of preserving the native testis. However, blunt trauma to the scrotum can cause testicular dislocation, testicular hematocoele, testicular rupture, traumatic testicular torsion, testicular contusion and scrotal hematoma where ultrasound evaluation is useful in determining the type and degree of injury present.

The testicle was intact so there was no indication for orchidectomy. During the exploration, 6 cm laceration was found and can be classified as 3rd grade scrotal injury based on the American Association Surgery for Trauma (AAST) organ injury severity scale. There was no extensive loss of genital tissue, therefore no grafting procedure needed.

Table 2 . Scrotum injury scale (AAST)[4]

Grade	Description Of Injury
I	Contusion
II	Laceration < 25% of scrotal diameter
III	Laceration ≥25% of scrotal diameter
IV	Avulsion < 50%
V	Avulsion ≥ 50%

Conclusion

A case of penetrating scrotal injury has been reported. The patient underwent scrotal exploration and wound repair within two hours after the injury, resulting in favorable outcome.

Daftar Pustaka

1. Randhawa H, Blankstein U, Davies T. Scrotal trauma: A case report and review of the literature. Can Urol Assoc J. 2019;113(6):S67–71.
2. Prajapati DK, Rampal K, Prajapati JM. Review of Diagnosis and Management of Scrotal Trauma with a Case Report. Int J Med Res Prof. 2016;2(3):1–5.
3. Owusu Ofori E, Bin Alhassan BA, Essoun S, Asante-Asamani A, Maison P. Penetrating Scrotal Injury: Two Unusual Case Reports in Children and Brief Review of Literature. J Adv Med Med Res. 2020;32(9):39–44.
4. Moore EE, Cogbill TH, Malangoni MA, Jurkovich GJ, Champion HR. Scaling system for organ specific injuries. Curr Opin Crit Care. 1996;2(6):450–62.