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Research Article

PENILE RUPTURE IN A 4 YEARS OLD BOY: YOUNGEST REPORTED CASE OF PENILE RUPTURE

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Abstract: ***Introduction:*** Penile fracture, defined as the traumatic rupture of the tunica albuginea, is a well-documented urological emergency that almost exclusively occurs in sexually mature adults. It is an exceptionally rare clinical entity in the pediatric population, with the youngest previously reported case in the literature being a 7-year-old boy. **Case Presentation:** We report the youngest known case of a traumatic penile fracture in a 4-year-old boy who presented to the casualty department with severe penile pain, continuous crying, and acute urinary retention for three hours following a blunt trauma fall onto the edge of a drawer. Clinical examination revealed significant ecchymosis and swelling of the penile shaft, absent of scrotal or perineal bruising. Magnetic Resonance Imaging (MRI) of the penis and pelvis confirmed the disruption of the tunica albuginea complicated by an overlying hematoma, alongside a partially distended bladder. **Management and Outcome**: To mitigate the risk of long-term complications, emergent surgical intervention was performed. The penis was degloved via a circumcision incision, allowing for the evacuation of the hematoma and primary repair of the underlying tunica albuginea tear. Intraoperative cystoscopy confirmed an intact, uninjured urethra. The patient experienced an uneventful recovery, was discharged on postoperative day two with anti-inflammatory medications and antibiotics, and remained completely asymptomatic at the 1-month and 3-month follow-ups. **Conclusion:** Although traditionally associated with sexual trauma in adults, penile rupture can occur in very young children. Clinicians must maintain a high index of suspicion for tunica albuginea rupture in pediatric patients presenting with acute penile trauma and swelling, regardless of age. Prompt radiological diagnosis via MRI and immediate surgical repair are imperative to ensure excellent functional outcomes and minimize long-term morbidity.

Keywords:penile rupture, pediatric urology, tunica albuginea, penile trauma, rare entity, surgical repair

INTRODUCTION

Pediatric penile pain is an uncommon complaint and is associated with a wide differential diagnosis including infectious, inflammatory, traumatic and idiopathic conditions. When a child comes with history of penile trauma the thought process in the mind of clinician is rarely a penile fracture. The most common pediatric penile trauma reports include - trauma during Circumcision (67%) human hair tie strangulations (16%), animal attack (6%), bicycle injury (65%), zipper injury (3%) and electrical injury (2%).1 Penile fractures, anatomically known as rupture of the tunica albuginea, are almost exclusively reported in sexually mature patients and usually involve forceful manipulation during sexual activity so rarely thought of in children. Rupture of tunica albuginea is a true urological emergency. Failure to recognize and treat the rupture of the tunica albuginea has been associated with residual penile angulation, persistent hematoma, abscess, erectile dysfunction and eventually fibrosis.Here we present the case of 4 years old boy with penile fracture.

CASE REPORT:

A 4 years old child was brought to the casualty of Ruby Hall clinic, Pune with the history of fall from height while playing and hit the edge of the drawer onto the penis. He was in severe pain and was crying continuously holding his penis. Severe swelling was noticed by his father for which he was taken to the general hospital from where he was referred to Ruby Hall clinic. He was not able to pass urine as well for last 3 hours. MRI was done to diagnose the condition. Surgical management was done promptly to reduce any chance of complications. Patient recovered well without any complication. On follow up after 1 and 3 months till now patient had no further complaints.

Local examination:

There was ecchymosis and swelling of the penile shaft. Both testicles were normally palpable and nontender. No perineal injury or scrotal bruising, (fig 1). Despite strong clinical picture of penile fracture, there were doubts due to very young age of the patient. So, to confirm the differential diagnosis an MRI penis with pelvis was done.

MRI findings: Showed rupture of tunica albuginea with clot over it, also showed a partially distended bladder with no other abnormality. Sagittal section t2 image (fig 2) shows disruption of Tunica Albuginea with adjacent increased signal intensity suggestive of hematoma. Fat saturation axial t2 image (fig 3) shows expansion of dartos fascia with hematoma.

Perioperative management- The child was shifted from MRI room to the operation theatre where his penis was degloved with a circumcision incision to remove the clot. The underlying tunica albuginea was repaired following which his urethra was visualized using a cystoscope. It did not show any signs of injury so the bladder was just drained and no catheter was inserted.

Intra operative images (fig 4 and fig 5). Patient recovered well and was discharged on post-operative day 2 with a course of anti- inflammatory drugs and antibiotics. Post-operative images (fig 6).

DISCUSSION

Penile fracture is very rare in pediatric population.

The lowest age for penile fracture reported is 7 years old boy who got injured due to falling and colliding with staircase railing leading to tunica albuginea rupture.2

Historically, surgeons favored conservative management but the present evidence of worldwide practice show that early surgical repair achieves significantly better outcomes compared to conservative management or delayed surgery. The most frequent signs on examination are swelling and discoloration, in keeping with the typical aubergine sign /eggplant deformity on presentation. It has been previously suggested that women on top position during sexual intercourse is more likely to result in penile fracture3, but met-analysis of some studies did not find this conclusion to be significant.4,5,6,7,8 Pavan et al. states that radiological investigation is essential to plan appropriate intervention as it will confirm the diagnosis, assess the site and extent of damage and exclude urethral involvement.6 They also touched another important but under-reported consequence of penile fracture; the fear of occurring another injury. This can lead to performance anxiety and reluctance to perform certain positions. Such considerations might persuade urologists to follow up the patients for longer duration of time. Tarek amer et al through there met-analysis emphasized the compelling need for fracture penis to be treated surgically in a timely manner so as to minimize physical and psychological morbidity as well as to reduce the length of patient stay in the hospital. Surgical intervention could also be associated with a lower cost to hospitals. There are number of incisions, sutures and approximation techniques identified.9 Another study with 116 surgically treated cases, used inverted continuous 3/0 non-absorbable nylon suture and reported only one complication, a painless nodule.10 The most common incision is the sub-coronal circumferential degloving incision. It appears that this approach is favored, as it gives unparalleled access to the corpora. 11

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So, although, penile fractures are common in sexually active adults, but it can also occur in small age group boys which is an acute urological emergency and needs urgent surgical management to minimize the complications.

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Conflict of interest:
There is no conflict of interest

Pre-operative image of the injury: Figure 1

MRI images:

Figure 2

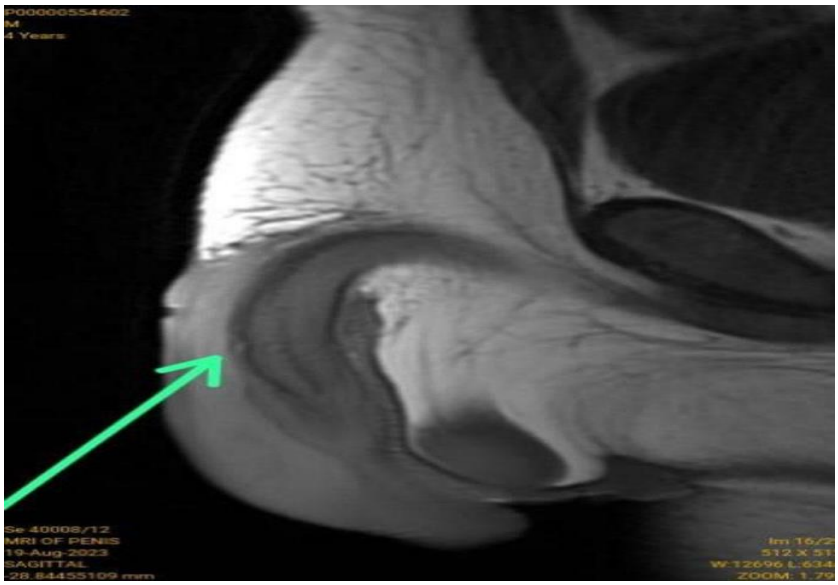
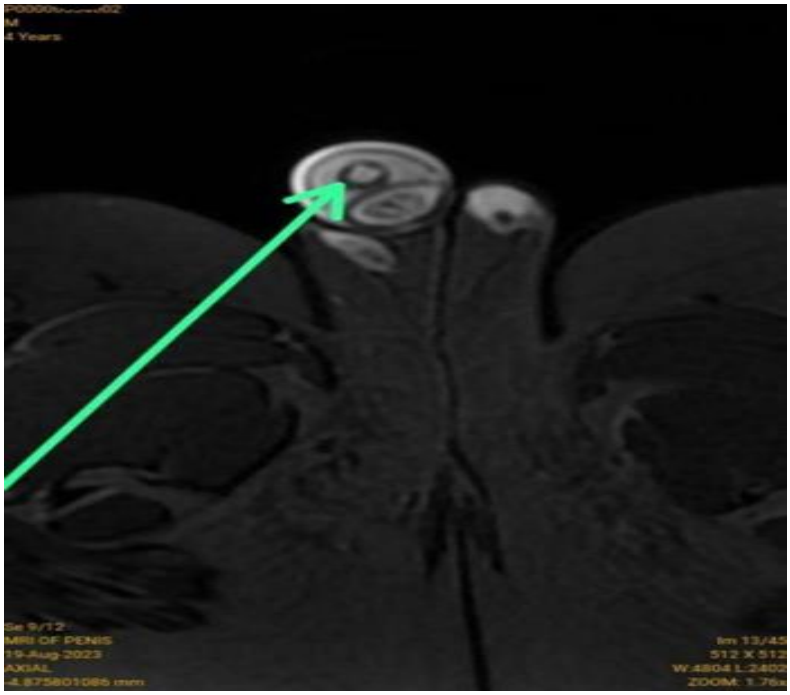


Figure 3



Arrows in both the MRI images shows tear in tunica albuginea

Intraoperative images

Figure 4

Red arrow marks glans. Orange arrow marks clot

Figure 5

Complete degloving of the penis was done

Postoperative image

Figure 6

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CONCLUSION

This case report suggest that although penile rupture is a common pattern of injury in sexually active adult males, it can also occur in a very young child.

So if a male child comes to the hospital with history of injury over the penis then one should always suspect the possibility of penile rupture whatever the age of the patient is, does not matter.

Prompt clinical examination with relevant radiological investigations are needed, if diagnosed as penile rupture then surgical intervention is required to prevent any further complication with proper follow up.

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