CASE REPORT

Nonsexual penile fracture in a 34-year-old man managed at a multispecialty, private hospital in Bujumbura, Burundi

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Abstract

Penile fracture is a rare urologic emergency characterized by the rupture of the tunica albuginea of the corpora cavernosa. Diagnosis can typically be based solely on clinical presentation. A cracking sound in the erect penis followed by rapid detumescence, pain, and swelling are the typical symptoms. While penile fracture is frequently caused by sexual intercourse, nonsexual causes also exist. Due to the low-energy trauma involved, urethral injury is uncommon. We report the case of a 34-year-old married man who sustained an unintentional, nonmasturbatory, non–intercourse-related penile fracture. The patient was rolling over in bed during sleep while experiencing nocturnal penile tumescence. Prompt surgical intervention involving closure of the tunica albuginea is the treatment of choice, yielding satisfactory cosmetic and functional outcomes.

Keywords: tunica albuginea, corpus cavernosum, penile fracture, nonsexual, Burundi

Introduction

The mobility of the penis and scrotum renders traumatic injuries to the genitalia uncommon. Among the emergencies encountered in urology departments, penile fracture presents with an incidence of 1 in 175 000 emergencies, with a reported annual incidence of 0.29 to 1.36 per 100 000 men.[1],[2] Penile fracture is a traumatic rupture of the tunica albuginea of the corpora cavernosa. Authors have suggested various causes of penile fracture associated with regional habits, including religion, culture, and behaviour.

Mechanisms associated with sexual activity, such as vigorous intercourse or masturbation, are the main causes of penile fracture in the United States and other Western countries.[3]-[5] In contrast, *taqaandan* (or *taghaandan*) is the most common cause of penile fracture in Middle Eastern countries. *Taqaandan* is a practice, particularly prevalent in Iran, which involves grasping part of the erect penis and keeping it stationary while forcefully bending another part in a lateral, upward, or downward direction to achieve detumescence.[1],[3],[4]

In Africa, cases of penile fracture are seldom reported, partly due to the taboo surrounding discussions of sexual matters and the potentially embarrassing nature of the condition.[4]

In the phase of tumescence, the thickness of the tunica albuginea reduces from 2 mm to between 0.25 and 0.5 mm, and this change contributes to the fragility of one of the toughest fascias in the body.[6]

Moreover, during erection, the increased blood flow in the corpora cavernous results in high pressure, about 1500 mmHg, which increases the vulnerability of the tunica albuginea.[7]-[9]

The classic clinical features of penile fracture include a popping sound in the erect penis followed by rapid formation of a penile haematoma and loss of erection. Urinary retention or urethral bleeding may indicate a concomitant urethral injury. The diagnosis of penile fracture is primarily based on clinical findings. In equivocal cases, penile ultrasonography, cavernosography, or penile magnetic resonance imaging may be performed to confirm the diagnosis. Imaging will typically reveal a haematoma collection in the tissues and a rupture of the tunica albuginea. The gold standard for treating penile fracture is urgent penile exploration to evacuate the haematoma and repair the tear in the tunica albuginea. If left untreated, a penile fracture may result in coital difficulty, urethral fistula, penile plaque, and erectile dysfunction.[8] Herein, we report the case of a 34-year-old who sustained a nonsexual penile fracture.

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Case presentation

A 34-year-old man presented to our emergency department with his wife, complaining of acute penile pain and swelling, which had persisted for 3 hours. He recounted hearing a cracking sound from his erect penis after rolling over in bed while asleep. This was swiftly followed by detumescence, acute swelling, pain, and deformity. The patient's history was corroborated by his spouse, who confirmed that they were not engaged in sexual intercourse at the time of the injury.

Upon examination, the patient's circumcised penis deviated to the left in a flaccid state, with tender swelling on the right dorsolateral aspect. The haematoma collection suggested a tear or rupture of the tunica albuginea of the corpora cavernosa. The mass effect from the haematoma caused the penis to curve away from the fracture site, resulting in an eggplant deformity. There was no blood at the meatus.

Examination of the suprapubic region, scrotum, and perineum was unremarkable.

The patient recalled that before presenting to the hospital, he had passed urine without difficulty, and no haematuria was noted.

The diagnosis of penile fracture was made, and the patient was scheduled for immediate surgical exploration. The penis was degloved, and a urethral catheter was inserted to exclude a urethral injury.

A haematoma was identified on the dorsal aspect of the right corpus cavernosum, and a small defect measuring between 0.5 and 1 cm in diameter was encountered after evacuation of the haematoma at the midpenile shaft (Figure). The defect was repaired using interrupted 2-0 Vicryl sutures.

The patient was discharged on the same day and advised to return after 2 days for a dressing change, with follow-up appointments scheduled for 1 week, 6 weeks, and 3 months postoperatively. He was also instructed to abstain from sexual intercourse for 6 weeks.

On the day of the dressing change, he presented with no complaints. After 1 week, he reported experiencing morning erections, with a small nodule palpable at the repair site; the wound had healed.

At the 6-week follow-up visit, he reported engaging in sexual intercourse the previous week without difficulties. The nodule was no longer palpable. The subsequent follow-up was unremarkable, with no voiding symptoms or signs of erectile dysfunction, pain, or deformity during erection.

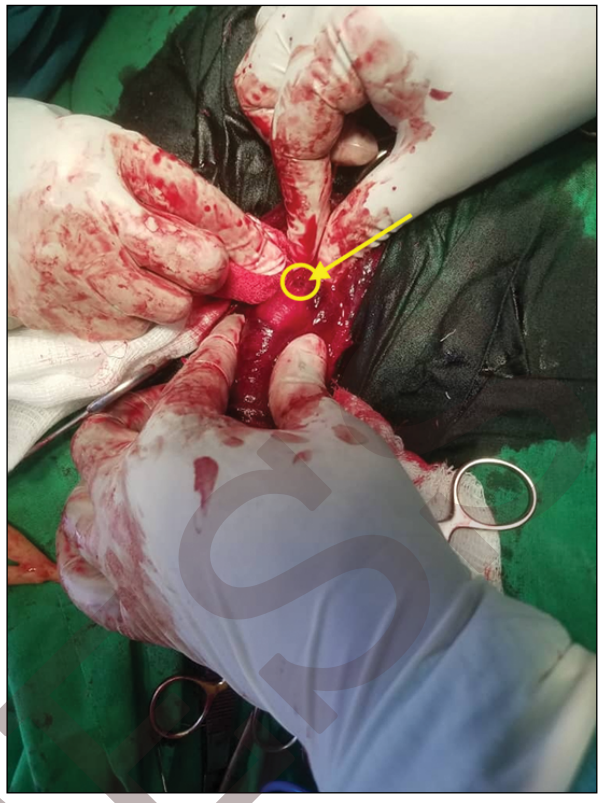

Figure. A small defect (0.5-1 cm in diameter) encountered after haematoma evacuation at the dorsal aspect of the right corpus cavernosum

A Foley catheter was inserted to rule out any concomitant urethral injury.

Discussion

The diagnosis of penile fracture can be easily and reliably established through history and physical examination alone. Patients typically report a cracking or popping sound as the tunica albuginea tears, followed by pain, rapid detumescence, and swelling of the penile shaft. In some instances, Buck's fascia may rupture, allowing the haematoma to extend to the scrotum, perineum, and suprapubic regions.[1]

The typical clinical presentation is a swollen penis that deviates to the side opposite the tunical tear, a consequence of haematoma formation and mass effect. A blood clot overlying the fracture site may be palpable and is described as the 'rolling sign'—a firm, mobile, discrete, tender swelling over which the penile skin can be moved. In atypical cases, such as those with vague or delayed clinical presentation, penile ultrasonography may be used to confirm the diagnosis.[8],[10],[11] Our patient did not exhibit the rolling sign because of the generalized penile swelling and tenderness on palpation. This sign is frequently present in patients with delayed clinical presentation when the oedema has subsided.

The most prevalent cause of penile fracture in Western countries is vigorous sexual intercourse. In a 5-year study, Rodrigo et al.[3] noted that only 12% of penile fractures were due to nonsexual causes, with 16.6% of these resulting from rolling over in bed with an erect penis. Omisanjo et al.[4] observed, in their 5-year study of penile fractures of nonsexual origin, that penile manipulation and rolling over in bed on an erect penis are the most common nonsexual causes. Other nonsexual mechanisms of injury reported include sports injuries or those associated with assault.[12]

Penile manipulation and nocturnal movements are associated with unilateral corpus cavernosum lesions. Owing to the low-energy nature of the trauma, urethral injury is

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uncommon. However, urethral injury may still be present without obvious symptoms, which is why we confirmed urethral integrity via Foley catheter insertion. Importantly, catheterization in such contexts carries the risk of exacerbating minor injuries, possibly creating a false passage or widening an existing urethral laceration. In this case, the catheter was removed upon confirmation of an intact urethra, and the patient reported no voiding symptoms.

While the notion of critical timing for penile fracture repair requires further investigation, Wong et al.[13] found no significant difference between immediate (<24 hours) and delayed (>24 hours) repair in terms of rates of erectile dysfunction and tunical scar formation. However, they noted statistically significant findings favouring immediate repair in terms of penile curvature rates.[13] Early clinical presentation and immediate surgical intervention are recommended.[14] Our patient presented 3 hours after his injury and benefited from immediate repair.

In this case, the penile fracture occurred due to unintentional, nonmasturbatory, non–intercourse-related trauma while the patient was rolling over in bed during sleep, accompanied by nocturnal penile tumescence.[5] Although this is not the primary mechanism of injury leading to penile fracture, it is not a rare occurrence as reported by some authors. Intraoperatively, we discovered a small (<1 cm in diameter) unilateral defect in the corpus cavernosum, which was consistent with the findings of Rodrigo et al.[3] There is no reason to doubt the patient's account since the intraoperative findings—a small corporal tear—aligned with the nonsexual mechanism of injury reported. This mechanism should not be overlooked by medical practitioners.

Conclusions

Penile fracture is underreported because of the low prevalence and embarrassing nature of the condition. The diagnosis of penile fracture is predominantly based on history and physical findings. Immediate surgical reconstruction is the treatment of choice, and 6 weeks of sexual abstinence is recommended.

References

1. Reddy Pogula V, Byram R, Manne V, Bhaskar Reddy Gouru V, Bodduluri S, Maddiboina HK. Fracture penis: an atypical presentation. *Int J Med Res Rev*. 2017;5(8):791-795. doi:10.17511/ijmrr.2017.i08.03 [View Article]
2. Nascimento B, Guglielmetti GB, Miranda EP, et al. Recurrent penile fracture: case report and alternative surgical approach. *Sex Med*. 2018;6(3):263-266. doi:10.1016/j.esxm.2018.01.005 [View Article] [PubMed]
3. Barros R, Schul A, Cavalcanti AG, Favorito LA, Koifman L. Findings regarding non-sexual penile fracture in a referral emergency hospital. *Int Braz J Urol*. 2021;47(2):388-394. doi:10.1590/S1677-5538.IBJU.2020.0420 [View Article] [PubMed]
4. Omisanjo OA, Bioku MJ, Ikuerowo SO, Sule GA, Esho JO. A prospective analysis of the presentation and management of penile fracture at the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos, Nigeria. *Afr J Urol*. 2015;21(1):52-56. doi:10.1016/j.afju.2014.07.001 [View Article]
5. Barros R, Schulze L, Ornellas AA, Koifman L, Favorito LA. Relationship between sexual position and severity of penile fracture. *Int J Impot Res*. 2017;29(5):207-209. doi:10.1038/ijir.2017.24 [View Article] [PubMed]
6. Galanakis I, Adamos K, Spyropoulos E, Mavrikos S. Delayed successful surgical repair of penile fracture: a case report. *Curr Urol*. 2019;12(2):111-112. doi:10.1159/000489428 [View Article] [PubMed]
7. Barroso FMDS, Paiva CS, Rodriguez JER, Cabral BTF, Araujo HD, Souza PM. Recurrent bilateral penile fracture: case report. *Urol Case Rep*. 2018;21:32-33. doi:10.1016/j.eucr.2018.08.004 [View Article] [PubMed]
8. Waseem M, Upadhyay R, Kapoor R, Agyare S. Fracture of the penis: an atypical presentation. *Int J Emerg Med*. 2013;6(1):32. doi:10.1186/1865-1380-6-32 [View Article] [PubMed]
9. Bhardwaj R, Gaurav G, Alam S. Penile Fracture during masturbation: a case report. *J Family Med Prim Care*. 2020;9(11):5790-5792. doi:10.4103/jfmpc.jfmpc_1160_20 [View Article] [PubMed]
10. Salako AA, Badmus TA, David RA, et al. Pattern of presentation and surgical management of penile fractures in a semi-urban African teaching hospital: case reports and literature review. *Afr J Urol*. 2018;24(2):130-134. doi:10.1016/j.afju.2018.01.010 [View Article]
11. Hughes S, Elbaroni W, O'Donoghue J, Williams M. Atypical presentation of a vertical penile fracture. *BMJ Case Rep*. 2021;14(6):e243353. doi:10.1136/bcr-2021-243353 [View Article] [PubMed]
12. Falcone M, Garaffa G, Castiglione F, Ralph DJ. Current management of penile fracture: an up-to-date systematic review. *Sex Med Rev*. 2018;6(2):253-260. doi:10.1016/j.sxmr.2017.07.009 [View Article] [PubMed]
13. Wong NC, Dason S, Bansal RK, Davies TO, Braga LH. Can it wait? A systematic review of immediate vs. delayed surgical repair of penile fractures. *Can Urol Assoc J*. 2017;11(1-2):53-60. doi:10.5489/cuaj.4032 [View Article] [PubMed]
14. Patil B, Kamath SU, Patwardhan SK, Savalia A. Importance of time in management of fracture penis: a prospective study. *Urol Ann*. 2019;11(4):405-409. doi:10.4103/UA.UA_80_18 [View Article] [PubMed]

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