

CASE REPORT PENILE FRACTURE WITH CORPUS CAVERNOSUM RUPTURE WITHOUT URETHRAL DISRUPTION DUE TO SEXUAL INTERCOURSE

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ABSTRACT

Objective: We reported a case of penile fracture with unilateral corpus cavernosum rupture that underwent penile exploration and reconstruction measures. **Case presentation:** We reported a 45-year-old male patient complaining of penile pain, swelling, loss of erectile ability and a "pop" sound after bumping during sexual intercourse. The patient can still urinate. Physical examination found a swollen penis, hematoma, eggplant-like deformity, and angulation to the right accompanied by tenderness. Routine blood support examination within normal limits. Based on data obtained from the anamnesis, physical examination, diagnosis of penile fracture was established and the patient was treated with exploration and reconstruction of the penis <24 hours. **Discussion:** Patients carried out exploratory actions carried out with circumferential and degloving subcoronal incisions, 4 cc blood clots were evacuated and ruptures were seen in the tunica albuginea corpus cavernosum sinistra along 4 cm. Reconstruction is carried out with primary sutures on the torn corpus cavernosum. The patient is carried out treatment for 5 days. At the postoperative 7-day evaluation, the surgical wound was good and urination was good. At the evaluation of 1 month the patient can have a painless erection with an erection hardness score of 4, there is no penile deformity. **Conclusion:** Penile fracture is a urological emergency that shows a good prognosis if you get surgical intervention immediately (<24 hours) and can reduce the number of complications.

INTRODUCTION

Penile fractures are rare but rarely reported cases of urological emergencies (Jiang et al., 2023). The incidence of penile fractures in the United States is 1 in 175,000 (Nandana et al., 2023). Most penile fractures result from blunt trauma to an erect penis (Nandana, 2023). The most frequent cause is an erect penis bumping into a woman's perineum or pelvic bone during sexual intercourse (De et al., 2023). Many patients do not seek medical attention because of embarrassment so many cases are too late to get treatment (Ouedraogo et al., 2023).³ Trauma results in tearing and blood seepage in the tunica albuginea corpus cavernosum (Ouattara et al., 2023). The most commonly found clinical manifestation is a "pop" sound followed by loss of erection (Nandana, 2023). The penis also shows symptoms and signs of swelling, hematomas, pain, and deformity (Avery et al., 2013). The diagnosis of penile fracture can be established using anamnesis, physical examination, and supporting examination (Yilmazel et al., 2021). Early detection and immediate operative management are important for good outcomes (Tetsuka et al., 2020). Tears in the tunica albuginea corpus cavernosa are often found unilaterally. However, tears can also occur bilaterally in 5-14% of cases (Marcu et al.,

2017). The incidence of urethral rupture in penile fracture cases is reported in 10-20% of cases (Kasaraneni et al., 2018). The incidence of bilateral corpus cavernosa tearing and urethral rupture cases is 9-20% of cases (Wiratama et al., 2022). We reported cases of penile fractures with tears in the corpus cavernosum without urethral rupture due to blunt trauma during sexual intercourse with surgical treatment (Alnadhari et al., 2018).

Case presentation

A 45-year-old man came to the Emergency Department complaining of pain and swelling in the penis since 6 hours before entering the hospital (Connelly et al., 2022). The penis is swollen after having sexual intercourse with his wife in a "doggy-style" position (Duarsa et al., 2022). There is a "pop" sound followed by swelling and a bent penis to the right (Mallik et al., 2019). The patient feels severe pain in the penis and loses an erection (Gaither et al., 2023). There are no complaints of difficult BAK, bloody BAK or blood seepage from the tip of the penis. The patient denies a history of diabetes mellitus, hypertension, and heart disease. The patient had no history of allergies and denied a history of consumption of drugs containing sildenafil. The patient had no abnormalities in the field of urology before. On physical examination, the penis appears swollen, hematomic, and angulated to the right side (Figure 1). There is no visible discharge of blood from the tip of the penis. The scrotum and testicles found no abnormalities. Laboratory examination showed normal results.

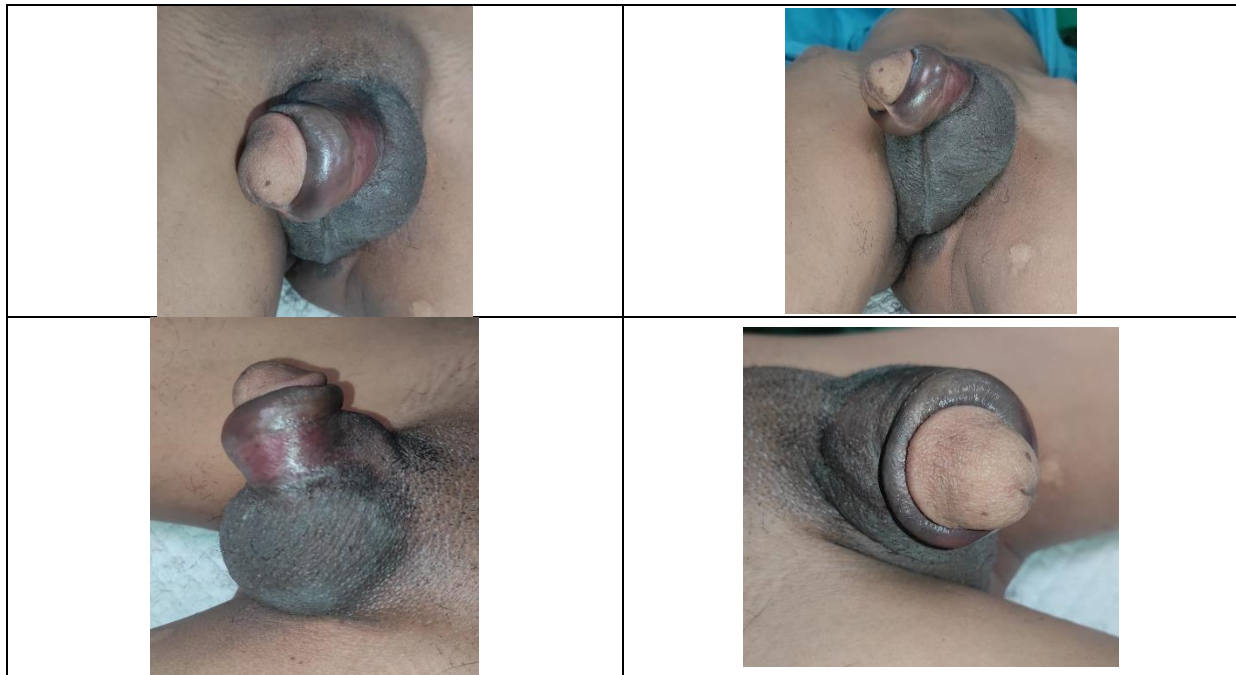


Figure 1. Clinical photo initials

The patient was immediately subjected to exploratory surgery and penile reconstruction. Exploration is done by making incisions in the subcoronal region circumferentially and degloving to the proximal penis. Blood clots appear in the dorsolateral corpus cavernosum sinistra as many as \pm 4cc carried out evacuation of blood clots. Visible tearing of the corpus cavernosum along the length \pm 4cm in the 4-6 o'clock direction (Figure

2). Furthermore, reconstruction was carried out with primary sutures using vicryl 3.0 thread interrupted as many as 8 stitches in the torn corpus cavernosum (Figure 3). The skin of the penis is then sutured and penrose drainage is given in the right scrotum region to prevent blood clots. Patients are treated for 3 days and given antibiotics and anti-pain drugs. Patients are advised not to have sexual intercourse for 1 month. Evaluation 1 week postoperatively at the polyclinic showed good wounds (Figure 5), minimal surgical wound pain, no complaints when urinating, morning erection was present and pain was minimal. Evaluation at the polyclinic after 1 month showed that the wound was dry (Figure 6), morning erection was there with erection hardness score 4, pain was absent. Evaluation at the polyclinic after 3 months the patient can have an erection with an IIEF score of 23 with no pain and no deformity.

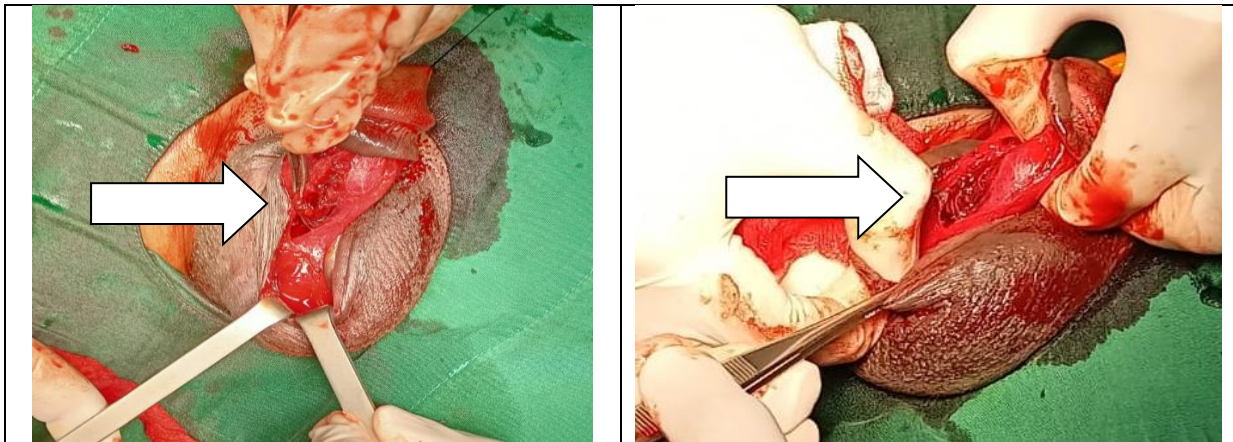


Figure 2. Clinical photo intraoperative tear of the corpus cavernosum

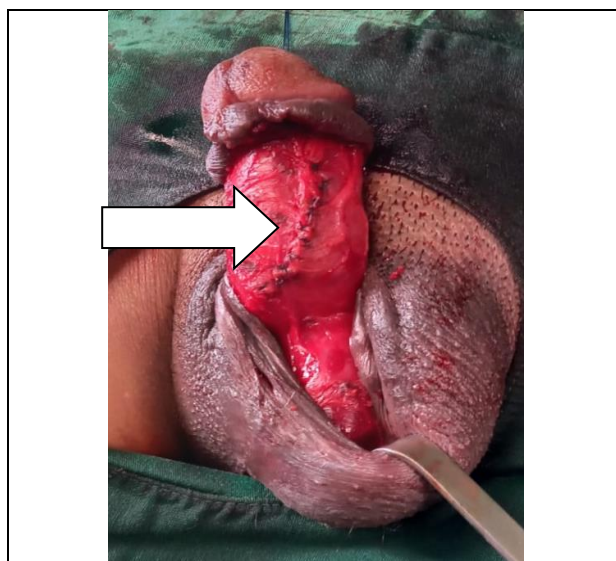


Figure 3. Clinical photo post reconstruction of the corpus cavernosum

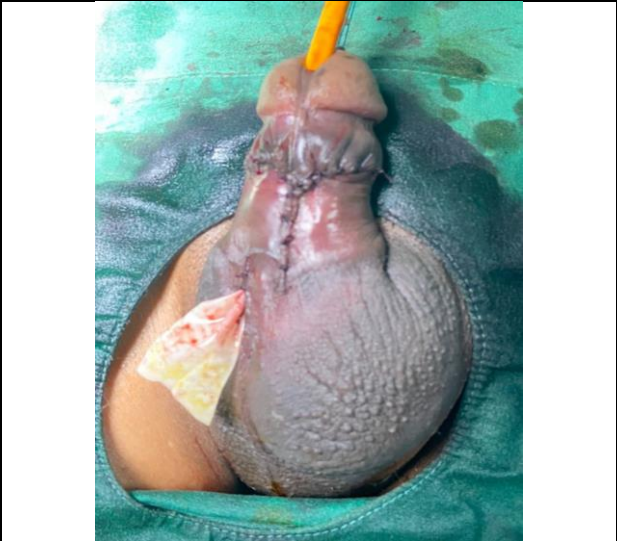


Figure 4. Postoperative clinical photo



Figure 5. Clinical photo followup 1 week postoperative



Figure 6. Clinical photo followup 1 month postoperative

Case discussion

Penile fracture is a rare but urological emergency. Most cases of penile fractures arise due to erect penile blunt trauma during sexual intercourse, falls, or habits such as "taghaandan" practiced in Middle Eastern countries.^{10,11,12,13} The penis is an organ that has columnar tissue that is eryctile.⁴ The penis has two dorsolateral corpus carvenosum and one ventral corpus spongiosum.⁴ This erectile tissue is lined by tunica albuginea which has a thickness of 2 mm but in an erect penis the thickness is reduced to 0.25 – 0.5 mm. This depletion makes the tunica albuginea vulnerable to trauma.⁴ The tunica albuginea has high strain strength but can tear with pressures in excess of 1500mmHg. Pressure exceeding these pressure limits can cause tears in the tunica albuginea.⁴

Some activities that can result in penile fractures are sexual intercourse, penis collision, and penis manipulation.⁴ Some sexual intercourse positions that can cause penile fractures are "doggy style" and "woman on top". A study reported that "doggy style" occurred in 10 percent of 67 cases of sexually related penile fractures. Other studies report that "woman on top" causes penile fractures due to body weight pressing on an erect penis or when an erect penis hits the perineum.² In patients, penile fractures occur as a result of "doggy style" sexual intercourse.

The diagnosis of a penile fracture can be made based on history and physical examination. Signs and symptoms experienced 90% in the form of triad "pop" sounds, hematomas, and loss of erectile ability (detumescence).¹¹ Signs and symptoms that indicate a disruption of the urethra are blood discharge from the external urethral ostium and difficulty urinating.¹⁴ In these patients found signs and symptoms of "pop" sounds, hematomas, loss of

erectile ability (detumescence), but no blood discharge was found from the ostium of the external urethra and there was no difficulty urinating.

Physical examination of penile fractures can find hematomas, swelling of the penis, and penile angulation.⁴ In these patients hematomas, swelling, and angulation of the penis are found. High-energy trauma during sexual intercourse can result in tears in the corpus cavernosum, corpus spongiosum, to disruption of the urethra. However, a study shows that urethral rupture occurs in only 3% of penile trauma.¹⁵ Bilateral tearing of the corpus cavernosum can occur in 5-14% of cases.¹⁵

The diagnosis of penile fracture can be done using history and physical examination. However, in atypical cases, you can use supporting examination modalities in the form of ultrasound (USG) and MRI to detect disruption of tunica albuginea.¹⁶ In addition, supporting examinations using cavernosography can also help to detect tears in the corpus cavernosum.¹⁷ Retrograde urethrography support examination can be useful for detecting urethral disruption. The examination is indicated if there is hematuria, blood discharge, or difficulty urinating.¹⁸ In this patient, radiological support examination is not carried out because based on history and physical examination has led to the diagnosis of penile fracture without urethral disruption.

Surgical management of penile fractures shows better outcomes with fewer complications and shorter treatment duration than conservative management. Surgical intervention by closing defects in the tunica albuginea can reduce long-term side effects and improve the patient's psychological condition.¹⁸ In this patient, circumferential subcoronal incision exploration is carried out and then degloving the skin of the penis. Degloving penis skin is important to be able to assess comprehensively to avoid damage that escapes initial assessment.¹⁹ The blood clot was evacuated and a tunica albuginea rupture was identified in the left corpus cavernosum along 4cm and then a closure of the tunica albuginea rupture was carried out using vicryl 3.0 thread with 8 stitches interrupted. Immediate surgical management (<24 hours) was chosen in this case in accordance with previous research that suggested surgical intervention to reduce complications and optimize outcomes.²⁰

CONCLUSION

Penile fracture is a rare case but is one of the emergency cases in urology. Diagnosis is made based on history and physical examination. The classic signs and symptoms of a penile fracture are a "pop" sound, loss of erectile ability (detumescence), and hematoma (egg plant appearance). Immediate surgical intervention (<24 hours) showed a good outcome in this case.

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