

Penile fracture. Is it the management problem for the urologist in the rural?

Prawito Singodimejo

Division of Urology, Department of Surgery,
Sardjito Hospital, Faculty of Medicine, Gadjah Mada University,
Yogyakarta

ABSTRACT

Prawito Singodimejo - *Penile fracture. Is it the management problem for the urologist in the rural?*

Fracture of the penis is a rupture of the corpus cavernosum due to blunt trauma. In the West the penile fracture is commonly resulted from trauma in sexual intercourse but in the Middle East and Mediterranean is predominantly due to masturbation. The other causes are unconscious nocturnal manipulation or fall onto the erecting penis.

We present a penile fracture case, one of the less frequent urological traumas, referred to the Sardjito Hospital. The report illustrated a 23 year old circumcised male, who had suffered from penile fracture while his penis was erecting. He was referred to the hospital by a general practitioner two days after the incident. Immediate surgical repair was done with the indication of specific history and severe hematoma in the penis as the clinical presentations. The patient was discharged on day 8 postoperation. A mild hematoma was present in the wound and no sign of infection.

Discussion about penile fracture written in the literature by authors is presented.

Key words: penile fracture, causes, urologist problem, surgical repair.

ABSTRAK

Prawito Singodimejo - *Fraktur penis. Apakah merupakan masalah penanganan bagi urologist di perifer?*

Fraktur penis adalah robeknya korpus kavernosum penis sebagai akibat dari trauma tumpul. Di Negara Barat penyebab terbanyak adalah hubungan seksual, sedangkan di negara Timur Tengah dan Mediterania penyebab terbanyak adalah masturbasi. Penyebab lain adalah manipulasi penis pada malam hari secara tidak sadar atau jatuh pada saat penis dalam keadaan ereksi. Fraktur penis merupakan kasus kegawatan di Klinik Urologi yang jarang terjadi. Dilaporkan kasus fraktur penis pada seorang laki-laki umur 23 tahun, telah disirkumsisi, yang dirujuk ke rumah sakit oleh seorang dokter umum dua hari setelah kejadian. Terapi pembedahan segera dikerjakan atas indikasi riwayat penyakit yang spesifik dan penampilan gejala klinis berupa hematoma yang berat. Pasien diperbolehkan berobat jalan pada hari kedelapan pasca operasi. Pada luka tidak tampak tanda-tanda infeksi, penis nampak hematoma ringan. Dibicarakan tinjauan pustaka dari beberapa penulis.

(B.I.Ked. Vol. 37, No.2: 55-61, 2005)

INTRODUCTION

The classification of penile injuries is blunt, penetrating and ischemic. Ischemic injury is the rare cause of penile injury and can be resulted from priapisme, prosthesis, corporeal injection with some

pharmacotherapeutic agents, diabetes and chronic dialysis. The penetrating trauma might be the result of self amputation, animal or human bites, a missile and zipper injury. The most common presentation of the blunt injury is a rupture or fracture in one or both cavernous bodies of erecting penis. The tear

of the tunica albuginea of the penis is commonly seen in the ventral or lateral aspect. In the West the most common blunt injury to the penis is a fracture of the tumescent shaft during vaginal penetration. In the Middle East and Mediterranean regions the penile fracture is predominantly due to masturbation.^{1,2,3,5,6,7,8,9,10}

In the erecting penis the tunica albuginea thins from 2 mm to 0.5 – 0.25 mm. The intracavernous pressure may exceed 150 mmHg. These conditions might exceed the tunical tensile strength and prone to cause fracture. In addition, structural abnormality of the tunica albuginea may alter the elasticity of the cavernous bodies which may further increase the risk of penile fracture.^{1,3,8,10}

The patient may recall hearing a cracking, snapping or popping sound accompanied by detumescence of the erecting penis and sharp pain. The clinical findings include hematoma, swelling and deformed penis. A palpable tunical defect and hematoma with “a rolling sign” are usually the pathognomonic features. In the presence of associated urethral injury, happening in 10 %-20 % of cases, the findings might be urethral bleeding, hematuria and difficulty in voiding. If the Buck’s fascia is torn, it permits extravasation of the blood into the scrotum, perineum, pubic area, inguinal region and this may presents with the characteristic of “butterfly sign”.^{1,2,6,7}

The incidence of penile fracture in the literature is not yet clear, because it is one of the less frequent urological traumas or under reported. Many recent reports have included series of considerable numbers. From 1935 to 2001 there were 183 reports about this subject published with 1,331 cases described.⁶

Cavernosography, ultrasonography and magnetic resonance have been used to help the diagnosis. Urethrography is recommended if urethral injury is suspected.^{1,6,7}

Detail of the proper treatment method for penile fracture remains unsettled. Previous reports in the journals recommended conservative management but recent reviews advocated surgical repair as the treatment of choice. There is also still controversy about the preoperative investigation and post-operative care of penile injury patients.^{1,6,7,8}

The aim of this paper is to report a patient suffered from penile fracture and the management by rural urologist.

Case Presentation and Management

A circumcised 23 year old male had suffered from penile fracture during his erecting penis. Two days before admitted into the hospital, the patient complained that during erection he heard a cracking sound in the penis which was followed by severe pain and rapid detumescence.

On clinical presentation the penis was deformed, severely swelling and hematoma was present at the preputial skin, no urethral bleeding. On palpation we found a defect at the lateral right site of the tunica albuginea of the right cavernous body. The size was 1 cm.

The patient was surgically managed by indication of typical history and of clinical presentation with severe swelling/hematoma. Bladder catheterization with a 16 F catheter was performed before operation because no urethral bleeding. Midline incision continued into the half right subcoronal incision was done to provide an access to the defect at the lateral right site of the tunica albuginea of the right cavernous body. On exploration two ruptures were identified at tunica albuginea of the right cavernous bodies. One rupture was with the size of 1 cm and the distal-ventral from the first rupture was 2 mm. Blood clots were evacuated and tunical tears were identified. All tunical tears were primarily corrected with interrupted buried knot Vicryl 3-0 (Ethicon) sutures. Wound dressing and urethral catheter were removed on day three (FIGURE 1 to 9). Following repair the patient was given cephalosporin third generation, analgesic and diazepam to prevent erection.

DISCUSSION

Severe penile injury is not common, it is one of the less frequent urological trauma with approximately one or two cases reported per annum in large centres. In the period from 1986 to 2005 only one case penile fracture admitted into the rural private hospital. There were 183 reports about the subject being published, with 1,331 cases described from 1935 to 2001. During 8 years (1987 to 1995)

12 incidents of penile fracture including 11 patients have been reported. Other authors reported 55 patients with 56 penile fractures in the period of 1982 to 2002. One penile fracture patient with stuttering priapism was reported.^{6,7,8} Between 1986 and 1987 it was reported surgical repair of 8 penile fracture cases, two of which were complex involving both corpora cavernosa and an associated partial rupture of the urethra.⁸ Malik El *et al.*⁶ in his study found that the mean age of his 11 patients was 36 years (ranging from 19 to 56 years). Vaginal intercourse is the quite common cause of penile fracture in the West, masturbation is reported as the cause penile fracture in the Mediterranean and Middle East.^{1,2,4,5,6,7,8}

Penile fracture has a quite typical clinical presentation. In the anamnesis the patients usually report hearing cracking sound followed by severe pain, penile detumescence, swelling and penile deformity. If associated with urethral trauma, happening in 10 %-20 % of cases, the patients have symptoms and signs of difficulty in voiding and urethral bleeding or blood in the ostium urethrae and hematuria.^{1,4,5,6,7,8}

Some authors agree with cavernosography examination for proper diagnosis, the others do not agree due to the side effect of infection in cavernosography.^{1,6,7} Ultrasonography study has been supposed for the diagnosis of penile fracture but the result is inaccurate.^{1,6,7} Magnetic resonance imaging has been used for demonstrating penile cavernous bodies. The examination has a high accuracy, but it highly costs and is not available in every hospital.^{1,6,7}

Formerly, the management of penile fracture was conservative e.g. penile splints and compression bandages, but recently many authors recommended that the penile fracture management should be surgical and immediately done.^{1,5,6,7} Why is surgical management is preferred than conservative management? Previous study reported 10% - 41% complication rates of conservative management of penile fracture. The others reported higher complication rates, reaching 25% to 53%.^{6,7} The complications are abnormal penile curvature, pain during coitus, infection, penile scarring and erection dysfunction.^{5,6} No complication occurred in surgical management post operatively, and in general it did not influence sexual intercourse.^{1,5,6,7,8} Surgery is

the treatment of choice if severe hematoma appears as clinical presentation in patient with penile fracture.^{1,5,6,7,8} Disagreement about the type of skin incision to be done in treating penile fracture remains, they are inguino-scrotal incisions, parapenile incisions, longitudinal over the location of the suspected fracture. Early surgical repair by subcoronal circumferential incisions with degloving the penis was recommended. This incision provides the best access to the three corpora and permits repair of urethral injuries.^{1,7}

The insertion of urethral catheter preoperatively is still controversial, with some advocating its routine use, and others prohibiting such insertion. In the current study, urethral catheter was inserted preoperatively after exclusion of any associated urethral injury. The catheter helped intraoperative dissection without harming the urethra, facilitated the application of a pressure dressing and prevented wound contamination with urine postoperatively. There was no harmful effect to the urethra as the result of such insertion.^{1,7}

The controversy also presents about the consensus on the need for postoperative suppression of the penile erection with diazepam or antiandrogens (estrogen) given routinely. In general, following repair the antiandrogen is not routinely used except in patients with urethral injury. In the current series, it was reported that the use of diazepam was useful in preventing early erection and helped to allay patient anxiety which may occur with such trauma.^{1,7}

Despite many controversies about the management of penile fracture mentioned above, its quite typical clinical presentations make sophisticated approaches, either diagnostically or therapeutically, which are still controversial not essential. Surgical exploration is the choice of treatment in patient with severe hematoma. Early diagnosis and treatment is important.

CONCLUSION

Penile fracture is a rare emergency case in urology. It is an entity that the diagnosis is eminently clinical. Surgical exploration is the choice of treatment in patients with severe hematoma on clinical presentation.

RECEIVED
 10/10/2005
 10/10/2005

The imaging examination with ultrasonography is inaccurate and magnetic resonance imaging is not feasible in the rural hospital.

Diazepam is effective in suppressing early penile erection postoperatively and helped to allay patient anxiety which may occur with such trauma.

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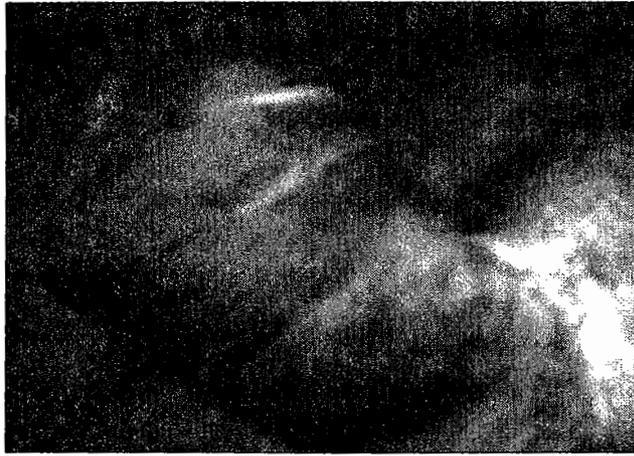


FIGURE 1. Penis, severe swelling and hematoma (2 days after injury)

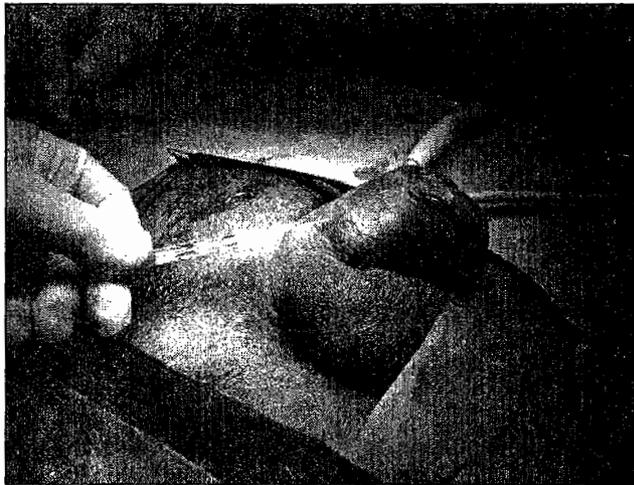


FIGURE 2. The protruding area in the right lateral aspect

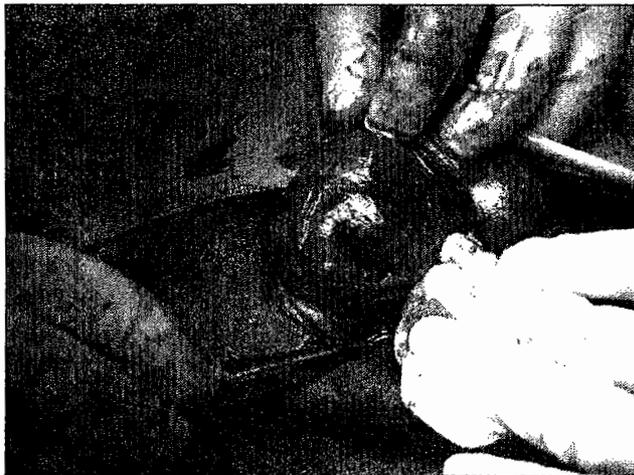


FIGURE 3. Same figure 2, after incision of the skin (Fascia Buck's covering the hematoma)



FIGURE 4. Blood clot (after incision of the fascia Buck's).



FIGURE 5. The tunica albuginea suture with vicryl 3-0, with a buried knot



FIGURE 6. Saline injection into the cavernous bodies to ensure the leaks occurred post repair (with wing needle)



FIGURE 7. Penis, post surgical repair



FIGURE 8. Blood clot from cavernous bodies



FIGURE 9. Clinical appearance of the penis at 3 days post repair, mild swelling/hematoma.