

Reprinted from:



Proceedings of the EuroSurgery 2002

Lisbon (Portugal), June 5-7, 2002

Editors

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Penile Fracture. Review of 7 Cases

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Summary

Penile fracture or corpus cavernosum rupture due to trauma over an erect penis is rare but an increasingly reported form of acute penis. Clinical picture is usually diagnostic but vascular lesions can present similarly and should be included in differential diagnosis. We present our 6-year experience in managing these patients. All patients were treated surgically with good functional and aesthetic outcomes. The diagnosis and treatment of this unusual injury are discussed.

Key words: fracture, penis, wounds and injuries

Introduction

Penile fracture or traumatic rupture of the corpus cavernosum is rare but increasingly reported in international literature. By definition it occurs following a blunt trauma to an erect penis.

There is an important etiologic difference between Western and Northern Africa or Middle East countries with prevalence of trauma due to sexual intercourse in the first and forceful manipulation to achieve detumescence in the last.

Clinical picture is usually diagnostic, but lesions of dorsal penile vasculature can present in a very similar way and should be included in differential diagnosis. Associated lesions like corpus spongiosum or urethral rupture occur in 20% of cases, lead to an inability to urinate or bleeding from external meatus.¹

We report our experience in managing 7 cases over six years.

Material and Methods

From Dec/95 to Nov/01, 7 patients presenting as penile fracture were

surgically treated. Clinical files were reviewed for data concerning: delay to hospital presentation, clinical history, preoperative exams, and type of trauma, location and dimensions of rupture, surgical procedure and associated lesions. Aesthetic and erectile functions were assessed on follow-up.

Results

Seven patients ranging 18 to 44 years old (mean 26.3) were admitted to the emergency department 3 to 60 hours (mean 16.9) after presumed penile fracture. Of these patients 4 had been injured during sexual intercourse, one during masturbation, one by forced manipulation and another while rolling over in bed.

All but one reported a severe penile painful cracking sound followed by rapid detumescence and variable penile haematoma. One patient reported a tearing penile pain without the typical cracking sound and not complete detumescence. He was found to have a ruptured penile dorsal vein. No voiding disturbances were seen. One patient reporting blood in the urethral meatus was submitted to an urethrography and no lesion was identified. Surgical exploration revealed an associated Corpus spongiosum tear. Three eco-doppler exams were obtained disclosing two cavernosal tears and one penile vein rupture. Only one out of two cavernosographies showed the cavernosal tear.

Surgical exploration through a sub-coronal (5 patients), inguinoscrotal (1) and a penile longitudinal (1) incisions permitted drainage of the hae-



Figure 1

matoma, identification of C carvernosum rupture (10 to 25mm) (6 cases) (fig. 1), one associated C spongiosum lesion and a ruptured superficial dorsal penile vein. The tears were repaired with interrupted 3/0 absorbable sutures. In all five patients with severe penoscrotal haematomas a proximal penile tear was found (fig. 2). There were no immediate or long-term complications. All patients reassumed sexual activity in 4 to 12 weeks. At median follow-up of 20.6 months, all patients report full rigid painless straight erections.



Figure 2

Discussion

The flaccid penis is somewhat protected from trauma due to its position, mobility and flexibility. In erection there is thinning and decrease elasticity of the tunica albuginea (from a thickness of 2 mm to 0.25-0.5mm) and a state of relative inelasticity it becomes vulnerable to blunt trauma resulting in a transverse tear.^{1,2}

As said, in western countries the vast majority of lesions occur as a result of sexual intercourse. They result from direct trauma to the pubic symphysis or the perineum when the penis slips out of the vagina or as a forceful bending with the female in superior position. Rare causes are the forceful manipulation during masturbation and rolling over an erect penis during sleep. In Northern Africa and Middle East countries the most common mechanism is the forceful bending of penis to achieve detumescence. This mechanism is responsible for the greater number of cases and larger series reported in these countries.^{2,3,4}

Although some authors report that the distal third of the shaft is more

commonly affected, in our series most lesions were proximal.

The events following the injury are characteristic. Typically the patient reports a cracking or a popping sound accompanied by immediate severe penile pain and rapid detumescence. In cases without urethral injury patients are able to urinate normally. If there is urethral bleeding, incapability to urinate or disturbances in urinary flow an associated urethral injury should be excluded.

Physical findings include swelling and discoloration of the skin. Usually the penis is deviated towards the opposite site due to the mass effect of the haematoma. The haematoma is confined to penile shaft, however if Buck's fascia is torn blood extravasates through the fascial planes to the scrotum and perineum.

Unless doubts exist no complementary exams seem necessary.

Cavernosography is a classical exam which consists in injection of diluted contrast medium to the corpora cavernosum. Radiographic control with delay pictures (10 minutes) can document contrast extravasation which is diagnostic. It is an invasive exam associated with risks of allergic reaction and cavernosus fibrosis. Since false negative rate of 15% is expected it should not be considered as the gold standard.⁴

Eco-Doppler exam is innocuous, simple to perform and, as seen in our series, by screening both the integrity of penile vasculature and of the corpus cavernosum, is an excellent tool.⁵

Magnetic resonance imaging can demonstrate a loss of continuity of the low signal intensity of the relatively avascular fibrous tunica albuginea on T1-weighted images. But this exam is expensive and in most institutions is not readily available.³

Retrograde urethrography, on the other hand, should always be performed in a patient with difficulty of voiding, gross or microscopic hematuria or blood in external meatus.¹

Immediate surgical exploration with haematoma evacuation, control of haemorrhage, debridement and closure of tunica defect preferably with interrupted absorbable sutures is the best practice policy. It has short in-hospital stays; low complication rates and permits an earlier resumption of sexual activity.^{1,2,3,4,5} The sub-coronal incision is the most commonly used since it permits checking on the integrity of the contralateral corpora. When the lesion is well circumscribed (localized penile shaft haematoma) penile longitudinal or inguinoscrotal incisions are good options.⁶

Several conservative treatments have been proposed in literature. These included penile splitting with compressing dressings, ice packs, sedatives, and antibiotics, fibrinolytic agents and a variety of drugs to suppress erection. However, conservative treatment along with longer in-hospital stay has been found to be associated with severe short and long-term complications. Abscess formation, penile curvature, painful erections and difficulties in erection are the most severe.^{1,2,4} A recent report of 5 patients with presumed penile fracture and small penile haematomas who

refused surgical treatment were managed conservatively and followed for one year with no complications. This report points to the fact that probably a subset of patients with very small tears could be managed conservatively.⁷

In conclusion a typical clinical picture is diagnostic. When doubts exist an eco-Doppler exam is a very useful tool. In our small series, immediate surgical correction had good functional and aesthetic results.

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