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Management of penile fracture: Can it wait?

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Abstract
Objectives: To assess the effect of timing of presentation of cases with penile fracture on the long-term outcome of surgical intervention.
Patients and methods: Between 2000 and 2015, 42 patients with penile fracture were operated in our centre, immediately after admission. To assess the effect of timing of presentation, patients were classified into 2 groups: group 1 with early presentation (≤24 h) and group 2 with delayed presentation (>24 h). All patients had a routine follow-up visit at 6 months after surgery; during this visit, long-term complications were assessed.
Results: Group 1 included 26 patients (62%) and group 2 included 16 (38%). In group 1, patients presented to the emergency department from within 24 h (mean: 3.96 ± 2.47 h) after occurrence of the penile trauma. Patients in group 2 presented from 24 h to 4 days (mean: 79.50 ± 37.62 h). The incidence rate of long-term complications was 7.6% and 68.7% in group 1 and group 2, respectively (OR 26.4, 95% CI 4.41–157.86, p = 0.0001). Concerning erectile dysfunction and penile nodules, there was no significant difference between the two groups (p = 0.67 and 0.06, respectively). However, painful penetration was significantly higher in group 2 (50% vs 3.8% in group 2 and 1, respectively, OR 25, 95% CI 2.69–231.59, p = 0.001). Penile curvature was seen only in the second group (43.8%).
Conclusion: Immediate surgical repair has the best prognosis and should remain the recommended treatment modality of penile fracture.

Introduction

Penile fracture is the rupture of the tunica albuginea of the penis's corpora cavernosa. It is caused by a trauma to the penis during erection and is a rare urological emergency [1,2]. According to the

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reported series, the incidence of penile fracture is higher in Northern Africa and Middle East than in the United States and in Europe [2,3].

Masturbation, rolling over in bed onto an erect penis, kneading and snapping of the penis during erection to achieve detumescence are the main causes of penile fractures in these regions [4]. In occidental countries, sexual intercourse is more commonly incriminated; the injury occurs when a clumsy movement forcefully strike the penis on the perineum or pubic bone [5,6]. Penile fracture is more likely to occur in stressful situations such as extramarital affairs and sexual relations in unusual locations outside of the bedroom [7].

Early surgical exploration and defect closure of the tunica is recommended to avoid long-term complications. However, reported postoperative long-term results, especially regarding erectile function, are rare and vary widely. In this study, we present long-term results after surgical therapy and compared patients who had been operated in the first 24 h, and those operated late after 24 h.

Patients and methods

From 2000 to 2015, 42 patients presented to our department with clinical features suggestive of penile fracture. The diagnosis of penile fracture was achieved clinically in all our patients without the use of radiological imaging. All patients were operated immediately after admission. The choice of incision was dependent on surgeon preference; It was circumferential with penile degloving in some cases and elective on suspected site of injury in the others. Evacuation of the hematoma revealed the defect in the tunica albuginea; inverted knot suture was performed using the Vicryl 3/0, in all our cases. If the tear was near the urethra or had extended ventrally with undefined margins, an urethral catheter was inserted into the bladder to protect the urethra.

Patients were classified into two groups: group 1 (G1, n = 26) operated in the first 24 h after the trauma and group 2 (G2, n = 16) operated after 24 h. Clinical presentation, preoperative evaluation, time from injury, mechanism and site of injury, and the presence of urethral injury were assessed and compared between these two groups. All patients had a routine follow-up visit at 6 months after surgery. During this visit, long-term complications were also assessed; the author examined the penis, recorded the location and diameter of the penile nodules, checked nodules for tenderness, and asked about penile curvature and pain in erection. The patients were asked to answer the structured questionnaire of the International Index of Erectile Function (IIEF 5). Erectile dysfunction (ED) was considered if IIEF score was less than 26. ED severity was classified as severe (score 5–10), moderate (score 11–16) and mild (score 17–25). These long-term complications were compared between the two groups.

The data were analyzed using the IBM SPSS 20.0 software. Comparison between groups was carried out with Chi-squared or Fisher's exact test, when appropriate; *P* value <0.05 was considered significant.

Results

Mean patient age was 44.6 ± 12.7 years (range: 22–70 years). Patients in the fifth decade (20/42: 47.6%) were affected predominantly. There was no statistical difference between both groups regarding age (45.1 ± 13.6 vs. 43.8 ± 11.5 in G1 and G2, respectively, p = 0.74). All cases had no problems with erectile function before penile fracture.

Table 1 Clinical and pathological profile of the patients.

	Group 1 (N = 26) n (%)	Group 2 (N = 16) n (%)	*P* value
Causes of penile fracture			
Masturbation	20/26 (76.9)	9/16 (56.2)	0.18
Sexual intercourse	5/26 (19.2)	2/16 (12.5)	0.62
Rolling over in bed	1/26 (3.8)	1/16 (6.2)	1.00
Not evaluable	3/26 (11.5)	2/16 (12.5)	
Clinical pictures			
Penile hematoma	26/26 (100)	16/16 (100)	
Penile swelling	26/26 (100)	16/16 (100)	
Penile pain	18/26 (69.2)	10/16 (62.5)	0.74
Acoustic cracking	9/26 (34.6)	4/16 (25)	0.73
Detumescence	24/26 (92.3)	16/16 (100)	0.51
Urethral bleeding	1/26 (3.8)	0/16 (0)	1.00
Clinical findings during surgical explorations			
Side of tear			1.00
Right	4/26 (15.3)	3/16 (18.7)	
Left	22/26 (84.6)	13/16 (81.2)	
Bilateral	0/26	0/16	
Site of tear			0.52
Proximal	6/26 (23)	4/16 (25)	
Mid	18/26 (69.2)	12/16 (75)	
Distal	2/26 (7.6)	0/16	
Urethral injury	1/26 (3.8)	0/16	1.00
Incision			0.15
Circumferential	5/26 (19.2)	7/16 (43.7)	
Direct	21/26 (80.7)	9/16 (56.2)	

Table 2 Comparisons of complications between the groups.

	Group 1 (N = 26) n (%)	Group 2 (N = 16) n (%)	*P* value
Presence of complications	2/26 (7.6)	11/16 (68.7)	0.0001
Plaques/Nodules	1/26 (3.8)	4/16 (25)	0.06
Pain/Paresthesia	1/26 (3.8)	8/16 (50)	0.001
Penile curvature	0/26 (0)	7/16 (43.7)	0.0001
Difficulties to penetrate	0/26	0/26	
ED	2/26 (7.6)	1/16 (6.2)	0.67

The most common cause of penile fracture was masturbation (66.6%) followed by sexual intercourse (16.6%); Table 1 lists the causes of penile fractures in both groups and there was no statistical difference between them.

Penile hematoma and swelling were present in all the cases. Cracking sound was heard by 12 patients (28.5%); all patients had immediate detumescence after the incidence except two cases. There was no statistical difference between both groups regarding clinical presentation (Table 2).

Mean time from injury to presentation was 32.37 h (range: 1–168 h). In G1, patients presented to the emergency room from 1 to 10 h (mean: 3.96 ± 2.47 h) after occurrence of penile fracture. Patients in G2 presented from 24 h to 4 days (mean: 79.50 ± 37.62 h) after

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