Management of Penile Fractures

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Abstract

Introduction and objectives. Penile fractures is rare medical condition and is a major urological emergency. Surgery is considered the standard therapy. In some cases it can be applied a conservative therapy. This study aims to assess the results of the two therapies in penile fractures.

Material and Methods. Between January 2007 and October 2019 in Tirgu Mures Urology Clinic a total of 6 patients were admitted with penile fracture. At 4 of these patients we performed surgery intervention for treatment of penile fracture and at 2 of them conservative therapy because they refused surgery. We followed hospitalization period, the occurrence of penile angulation during erection and erectile function at more than 3 months post therapy using International Index of Erectile Function (IIEF).

Results. Mean age was 37,35 years for patients with surgical therapy vs 22 years for patients with conservative treatment. Average days of hospitalization was 8,75 days vs 9 days. Average IIEF 1-5,15 at 3 months after surgery was 23,25 for the patients who undergone surgery and 27 for the patients with conservative treatment. Average IIEF 1-5,15 at 12 months after surgery was 22 for the patients who undergone surgery and 28 for the patients with conservative treatment. 2 patients with penile fracture were not subsequently presented to the control and we do not have data about erectile function at 12 months. In 1 patient with conservative treatment there was a slight angulation of about 10 degrees. The patient who had concomitant urethral involvement with the penile fracture had erectile dysfunction prior to trauma. For all patients with penile fracture we recommended a period of sexual abstinence for 8 weeks.

Conclusions. Penile fracture although it is a rare pathological entity, it must be quickly diagnosed. The indicated treatment is the surgical one, the only one that ensures a reduced rate of complications. The conservative treatment being indicated only to the patients who refuse the surgery. Even though in our study erectile function was superior for patients treated conservatively, this is due to the presence in the group of patients treated surgicaly of a patient with middle/severe erectile dysfunction.

Key-words: conservative, penile fracture, surgery

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Introduction

The traumas of the external genital tract represent 33-66% of the total urological traumas. They are more common in males and occur especially in young men under 40 years [1]. These traumas are usually related to road accidents, periods of war, intense physical activity.

Penile fractures is rare medical condition and is a major urlogical emergency. Surgery is considered the standard therapy. In some cases it can be applied a conservative therapy. The most important cause is sexual intercourse when the penis is erect. Very rarely the penile fracture can occur as a result of a local trauma, without an erect penis [2].

The main cause of penile fracture is involuntary angulation that can occur at the level of the tunica albuginea during the sexual intercourse, as it reduces its thickness below 0.5 mm when the penis is erect [3].

From the clinical point of view the moment of the penile fracture is associated with a cracking sound, sudden loss of your erection, intense local pain and rapid swelling at the fracture level due to the hematoma of different dimensions. If the penile fracture is important, the hematoma may extend to the lower abdominal wall. The involvement of the urethra is rare, but it must be known and treated properly.

The diagnosis of this pathology is most often clinical. To confirm the diagnosis and especially to determine the extent of the penile fracture, it is advisable to perform a penile ultrasound (preferably with contrast substance) or MRI [4, 5].

Surgery is considered the gold standard of treatment of penile fracture for reducing long-term penile sequelae [6].

Conservative treatment presents an increased risk of late complications, especially for penile obstruction, fibrosis and erectile dysfunction. [7]

Material and Methods

Between January 2007 and October 2019 in Tirgu Mures Urology Clinic a total of 6 patients were admitted with penile fracture.

The penile ultrasound was performed in 4 patients. in a patient who had major bleeding at the urethra level urethrography was performed. This revealed a ruptured urethra. We did not perform MRI on any patient.

The patient with the urethra-associated rupture, affirmatively, consumed 5-PDE inh before sexual intercourse due to erectile dysfunction prior to the traumatic event.

2 of the patients refused surgery and preferred a bladder catheterization and a compressive bandage (fig 1).

At 4 of these patients was practiced surgery for treatment of penile fracture. We followed hospitalization period, the occurrence of penile angulation during erection and erectile function at more than 3 months post therapy.

For 2 of the patients who underwent surgery we performed a vertical midline incision on the penile raphe. For the others 2 the exploration the penile fracture was performed after circumferential incision and the penile skin de-gloved. After the hematoma was evacuated the injury of tunica albuginea was identified and sutured. We used 2/0 polyglactin for this suture.

All patients underwent bladder catheterization and a compressive bandage was applied to the penis. For



Fig 1. The aspect of the penile fracture

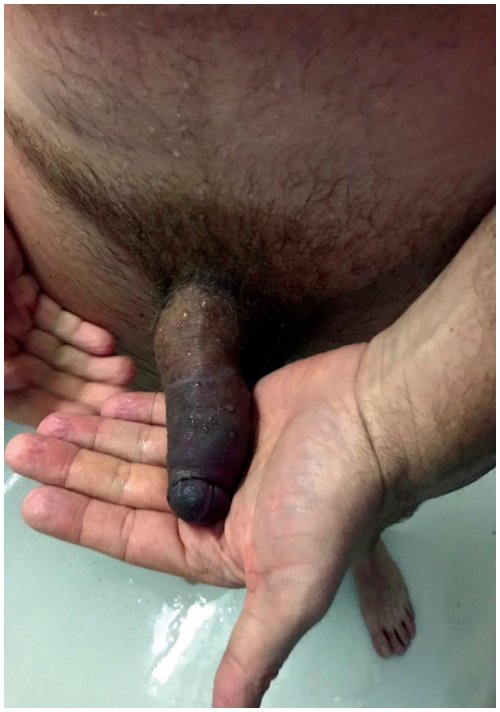


Fig 2. The aspect of the penis at 5 days after the penile fracture at the patient with conservative treatment.

the patient with the urethra injury we performed the isolation of the urethra and the suture of the lesion were practiced.

Broad spectrum antibiotic treatment was administered for 7 days for patients with surgical treatment. Antibiotic treatment was not administered in patients with conservative treatment.

Results

Mean age was 37,35 years for patients with surgical therapy vs 22 years for patients with conservative treatment. Average days of hospitalization was 8,75 days vs 9 days. Average IIEF 1-5,15 at 3 months after surgery was 23,25 for the patients who undergone surgery and 27 for the patients with conservative treatment.

Average IIEF 1-5,15 at 12 months after surgery was 22 for the patients who undergone surgery and 28 for the patients with conservative treatment. 2 patients with penile fracture were not subsequently presented to the reevaluation and we do not have data about erectile function at 12 months.

In 1 patient with conservative treatment there was a slight angulation of about 10 degrees. The patient who had concomitant urethral involvement with the penile fracture had medium / severe erectile dysfunction.

For all patients with penile fracture we recommended a period of sexual abstinence of 8 weeks.

The analysis of the studied group is presented in table 1.

Discussion

The clinical diagnosis of penile fractures is relatively easy to make. However, diagnostic imaging is mandatory. The most used method is penile ultrasonography [8]. Using contrast-enhance ultrasound increase the sensitivity of this imaging method [9].

MRI is a much more accurate alternative for the diagnosis of penile fractures. This investigation is superior to ultrasonography, especially in cases where urethra is involved [10, 11].

Cavernosography, widely used previously for the diagnosis of penile fractures, has come out of use due to multiple false negative results, its invasive nature, but especially because it has been associated with complications of priapism and fibrosis of the corpus cavernosum [12].

Cystoscopy and urethrography have limited indications. Due to their invasive nature, they are indicated only in cases where the patient has blood in the urethral meatus or difficulties in urination [13].

There have been multiple discussions about how to treat penile fractures (conservative/surgical). Currently, the main indication of treatment is the surgical intervention, the conservative treatment being reserved only for patients who refuse the intervention [14]. Moreover, Penbegul et al has shown that surgery has no effect on the patient's long-term psychological status [15].

Nathan et al, on a meta-analysis that included 12 studies, concluded that the appearance of scarring in the tunica albuginea and erectile dysfunction is similar, regardless of whether the intervention is immediate or delayed. The only difference is the risk of the penile curvature occurring which is higher if the intervention is delayed [16].

On the other hand, Wespes et al have shown that conservative treatment has a long-term complication rate of up to 30% and may include: painful erections, severe penile angulation, arterial-venous fistula, erectile dysfunction. [17]

The patient who prefers the conservative treatment over the surgical one should be informed that the risk of fibrosis of the corpus cavernosum and of the angulation is higher by 35%, and for the appearance of erectile dysfunction by 62% [18, 19].

The prevalence of erectile dysfunction in our group

Table 1. The analysis of the patients with penile fracture.

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6
Age	26	30	19	31	25	64
Time to surgery (h)	3	2	-	4	-	3
Type of applied treatment	surgery	surgery	conservative	surgery	conservative	surgery
Antibiotic treatment (days)	7	7	-	7	-	7
Early postoperative complications	no	no	no	no	no	no
Late postoperative complications	no	no	no	no	penile angulation	erectile dysfunction
Days of hospitalisation	7	7	9	9	9	12
IIEF 1-5, 15 at 3 months	27	26	29	27	25	13
IIEF 1-5,15 at 12 months	NA	NA	29	29	27	15

was higher in patients with surgical treatment than those treated conservatively. The main bias of this statistical analysis was that the patient in whom we also had a urethral rupture had a medium / severe erectile dysfunction at both 3 and 12 months. He had erectile dysfunction prior to the traumatic event.

If we exclude from the statistical analysis this patient the results on erectile function are superior for the patients treated surgically (Table 1).

Superiority of surgical vs conservative treatment cannot be discussed. There is no data in the literature to prove the opposite. If the surgical treatment is applied early for penile fractures the impact on erectile function is minimal. [20, 17]

In contrast, psychological sequelae are very common. These can affect the patient's sex life due to fear of a recurrence. Therefore psychological counseling should be considered in all patients [21].

For all the patients in our study the indication regarding the abstinence period was 8 weeks. In the literature there is no consensus regarding the period of abstinence after penile fracture [22]. The general recommendation for abstinence is 6-8 weeks, although there are authors who recommend the resumption of sexual activity 10-14 days after surgery for patients who have not had a urethral involvement in the traumatic process [23].

Conclusions

Penile rupture although it is a rare pathological entity, it must be quickly diagnosed using ultrasound or MRI,

The indicated treatment is the surgical one, the only one that ensures a reduced rate of complications, the conservative treatment being indicated only to the patients who refuse the surgery.

Even though in our study erectile function was superior for patients treated conservatively, this is due to the presence in the group of patients treated surgicaly of a patient with midle / severe erectile dysfunction and who presented this symptomatology before the traumatic event.

Penile angulation is more common in patients with conservative treatment for penile fractures.

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