

EVALUATION OF SEXUAL FUNCTION IN PENILE FRACTURE SURGERY PATIENTS

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Abstract: *To assess the effects of surgical treatment of penile fracture on sexual function including psychological effects due to this traumatic experience. A prospective study was carried out at the Department of Urology in Ibne Sina Hospital and Multan Medical & Dental College from September 2021 to September 2022. A total of 20 men undergoing surgical treatment for penile fractures were selected for the study. A detailed physical examination was done, and subjects were questioned about psychological sexual problems and erectile dysfunction, penile nodules and penile curvature post-surgically. The average age of study patients was 37 years with an age range of 18-65 years. Two patients (10%) reported penile curvature. Erectile dysfunction was recovered in 17 patients (85%), six months after the surgery. 15 patients (75%) developed a fear of future penile fracture. 13 patients (65%) changed their sexual habits like avoiding vigorous sexual intercourse. Surgical treatment of penile fractures can lead to various postoperative complications both physical and psychological, but they develop late in time after surgery and patients should seek treatment for such complications.*

Keywords: Penile fracture, Sexual function, Male urology, Psychological effects

Introduction

Penile fracture is an infrequent urological emergency which is often caused by vigorous sexual intercourse (Diaz and Cronovich, 2019). However, its etiology varies in different parts of the world including rolling over in bed, blunt trauma to an erect penis, aggressive masturbation and deflating an erect penis (Elliott, 2021). The common symptoms of penile fracture include bruising, excruciating pain, immediate detumescence and swelling (Falcone et al., 2018). Surgical treatment is often chosen as the first-hand option to treat the defect as it shows significantly better results than conservative treatment (Kominsky et al., 2020). Delay in surgery can lead to permanent urethral stricture, sexual dysfunction, penile chordee, penile nodule and painful sex. Surgery restores the anatomy and function of the penis to maintain its sexual function and prevent sexual disorders. However, surgery may cause future complications such as penile tortuosity, erectile dysfunction and painful erection (Barros et al., 2017). Moreover, patients also suffer from psychological disorders such as stress, depression and anxiety after penile fracture which may affect the sexual life of the patient (Wang et al., 2021). According to our research, surgical treatment of penile fracture restores sexual satisfaction, however the psychological effects affect the social and sexual life of the patients. This study aims to assess the

effects of surgical treatment of penile fracture on sexual function including psychological effects due to this traumatic experience.

Methodology

A prospective study was conducted in the Department of Urology in Ibne Sina Hospital & Multan Medical & Dental College, Multan from September 2021-September 2022. A total of 40 men undergoing surgical treatment for penile fracture were selected for the study among which only 20 met the inclusion criteria. All the patients signed informed to become a part of the study. The patients who did not agree to take part in the study or couldn't complete the 6 months following were excluded. The Ethical Committee of the hospital approved the study design.

All the patients who were suspected of penile fracture after the clinical examination were recommended surgery immediately. The diagnosis was confirmed by penile ultrasound. Patient data including baseline characteristics, clinical presentation, surgical findings and etiology was noted. A 6-month follow-up was done after the surgery to inspect the sexual drive and ejaculatory function. Those who reported premature ejaculation were assessed by the premature ejaculation diagnostic tool (PEDT) (Symonds et al., 2007). The patient who reported penile curvature was treated with alprostadil 10 mcg. Erectile function in patients was

evaluated by using the International Index of Erectile Function (IIEF-5) (Neijenhuijs et al., 2019). All patients who had erectile dysfunction were administered oral phosphodiesterase type 5 inhibitor (IPDE-5) and changes were noted with and without medications. Those who had consistent erectile dysfunction underwent Penile color duplex Doppler ultrasound (CDDU) to confirm the cause of the condition. Penis has examined in a flaccid state after administration of Alprostadil 10 mcg in the cavernosal region. If the peak systolic velocity of the cavernous artery <25cm/s, it was regarded as arterial insufficiency. Finally, the psycho-sexual interview was conducted to inquire the patients about the psychological effects after surgery. All the data were analyzed by SPSS version 20. Chi-squared test and Fisher's test were performed where required. A p-value of less than 0.05 was regarded as statistically significant.

Results

The average age of patients was 37 years (18-66 years). All the subjects were married (100%). Sexual intercourse was the cause of injury in the majority of patients (65%). 10 patients were positive for eggplant deformity. 9 patients (45%) had a mid-corporal injury, and 4 patients (20%) had a urethral injury. The demographic data of study patients are shown in Table I. With regards to long-term sexual complications, 15 patients (75%) complained of a penile nodule, 5 patients (25%) of penile pain and 3 patients (15%) of erectile dysfunction. 17 patients recovered from erectile dysfunction in 6 months and the remaining 3 were treated with IPDE-5 which showed successful results except for one patient who underwent CDDU. The risk factors and complications of penile fracture are shown in Table II.

The psycho-sexual interview showed 15 patients (75%) had a fear of recurrence of penile fracture. 13 patients (65%) changed their sexual habits, 6 patients (30%) reported anxiety and 6 (30%) reported a negative impact on sexual life.

Table I: Demographic data of study patients

Variables	N(%)
Marital status	
Married	20 (100%)
Unmarried	0 (0%)
Cause of injury	
Sexual intercourse	13 (65%)
Masturbation	2 (10%)
Forceful blow	5 (25%)
Clinical findings	
Eggplant deformity	10 (50%)
Rolling sign	11 (55%)

Immediate Detumescence	14 (70%)
Audible click	8 (40%)
Surgical findings	
Corporal injury	
Unilateral	11 (55%)
Bilateral	9 (45%)
Location of injury	
Mid-corpora	9 (45%)
Shaft	4 (20%)
Roof of penis	3 (15%)
Midshaft	2 (10%)
Superficial skin tear	1 (5%)
Urethral injury	4 (20%)

Table 2: Long-Term Sexual Complications in Penile Fracture Patients

Complications	N(%) (20 patients)
Penile nodule	15 (75%)
Penile pain	5 (25%)
Erectile dysfunction	3 (15%)
Penile curvature	2 (10%)
Premature ejaculation	1 (5%)
Delayed ejaculation	-
Low libido	1 (5%)
Decrease in penis size	1 (5%)
Aesthetic dissatisfaction	2 (10%)
Fear of recurrence	15 (75%)
Change in sexual habits	13 (65%)
Anxiety	6 (30%)
Negative impact on sexual life	6 (30%)
Avoiding the cause of trauma	7 (35%)

Discussion

Penile fracture is a rare urological condition that was treated using conservative methods like an ice pack, bandages, catheterization and medications (Ouellette et al., 2019; Simms et al., 2021). However, these methods posed a high risk of morbidity and almost 80% of patients suffered long-term adverse effects (Hughes et al., 2021; Sarıkaya et al., 2021), due to which surgical treatment is the recommended treatment in modern times. But unfortunately, this approach is not entirely complication free. Most patients undergoing surgery for penile fracture report erectile dysfunction. A study was conducted on 300 penile fracture patients by El Atat et al (El Atat et al., 2008) which reported a 13.3% complication rate, among 0.6% of cases complained of erectile dysfunction. These results comply with Reis et al (Reis et al., 2014) whose results showed erectile dysfunction in 4.8% of patients. A recent study (De Luca et al., 2017) assessing the effect of surgery on

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the sexual function of penile fracture patients reported that erectile dysfunction was treated in most of the patients as noted in the 1-year follow-up, and only 5% of patients were left untreated. The incidence of erectile dysfunction in PF patients is also seen in Hatzichristodoulou and his colleagues findings (Hatzichristodoulou et al., 2013), 10 patients out of 13 complained of ED. In our study, 3 patients (15%) reported erectile dysfunction. The high percentage is due to the small sample size.

Color Duplex Doppler Ultrasound is an invasive method used for evaluating the etiology of ED. Similar to our study, El-Assmy et al (El-Assmy et al., 2012) used this method in patients treated for penile fracture. 11 patients with PF underwent ultrasound revealing arterial insufficiency in 3, normal indices in 4 and veno-occlusive dysfunction in the other 4 patients. We used CDDU for the evaluation of erectile dysfunction in one patient who was treated with medication but still complained of mild ED in 6 months follow-up. CDDU revealed psychogenic ED as he had a fear of recurrence. This showed that patients who had postoperative anxiety and who reported negative effects on their sexual life were at high risk of persistent ED. We infer that PF patients who report erectile dysfunction after surgery have a psychogenic ED which gets better after some time. Regarding the psychological effects of penile fracture surgery, various studies report contradictory results. Penbegul et al (Penbegul et al., 2012) conducted a retrospective study on PF patients who had undergone surgery. The results revealed the same mental disorders and sexual displeasure in the study group and control group, indicating that PF surgery does not have any negative psychological effects. However, Pavan and his colleagues (Pavan et al., 2014), concluded that various psychological conditions are associated with the surgical treatment of PF. In our study too, 15 (75%) patients reported fear of recurrence and 6 (30%) reported anxiety after surgery, indicating its psychological impact.

Penile curvature after PF surgery also affects the sexual function of patients. Ibrahiem et al (El Housseiny et al., 2010) reported penile curvature in 3.2% of patients and Zargooshi (Zargooshi, 2009) observed it in 1.1% of cases. In other studies, higher percentages of penile curvature were observed, penile curvature observed at 27.4% (Hatzichristodoulou et al., 2013). In our study, penile curvature was seen in 2 (10%). Fibrotic penile nodules are also observed in patients with PF. In our study, 15 patients (75%) had penile nodules. Similarly, in Zargooshi (Zargooshi, 2009), 93.7% reported penile nodule formation. However, El Atat and his colleagues (El Atat et al., 2008) only reported it in only 3.33% study population. Sexual abstinence is not usually recommended to PF

patients but most authors including El-Assmy (El-Assmy et al., 2012) advised avoiding sexual intercourse at least for 6 weeks after surgery. A consensus of the British Association of Urological Surgeons also advised the same (Rees et al., 2018). In our study, we instructed patients to not engage in sexual activity for 8 weeks but almost all the patients performed sexual activity after 4 weeks of surgery. No correlation was found between postoperative complications and sexual abstinence. Our study has some limitations. We had a small sample size and retrospective study design which did not allow the evaluation of all the complications postoperatively. We also had a shorter follow-up period *i.e* 6 months.

Conclusion

Surgical treatment of penile fractures can lead to various postoperative complications both physical and psychological, but they develop late in time after surgery and patients should seek treatment for such complications.

Authors Contribution

Akhtar, Zeeshan, Hamza, conceived, designed and did statistical analysis & editing of manuscript, Saad, Hamza, Usman, did data collection and manuscript writing. Akhtar, did review and final approval of manuscript.

Conflict of interest

The authors declared absence of conflict of interest.

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