Erectile Dysfunction after Urethroplasty

Jalil Hosseini
Professor of Urology
Reconstructive Urology Dept.
Tajrish Hospital, Tehran – Iran

President, A-P SRUAS
Past President, UAA

Honorary Member, EAU
Past President, IUA


Reconstructive Urology
Shahid Beheshti Medical University
SBMU
TAJRISH HOSPITAL
FOUNDED IN 1958
RUD, TAJRISH
24 years experience

- *De novo* erectile dysfunction (ED) is a known complication after Urethroplasty.
- The outcomes of urethral reconstructive surgery have traditionally focused on parameters such as urinary flow rate, lower urinary tract symptom (LUTS) score, or recurrent USD requiring further treatment.
- The incidence of *de novo* ED after Urethroplasty is largely underreported.

- ED after urethroplasty is thought to be attributable to cavernous or perineal nerve injury or the disruption of bulbar arterial flow

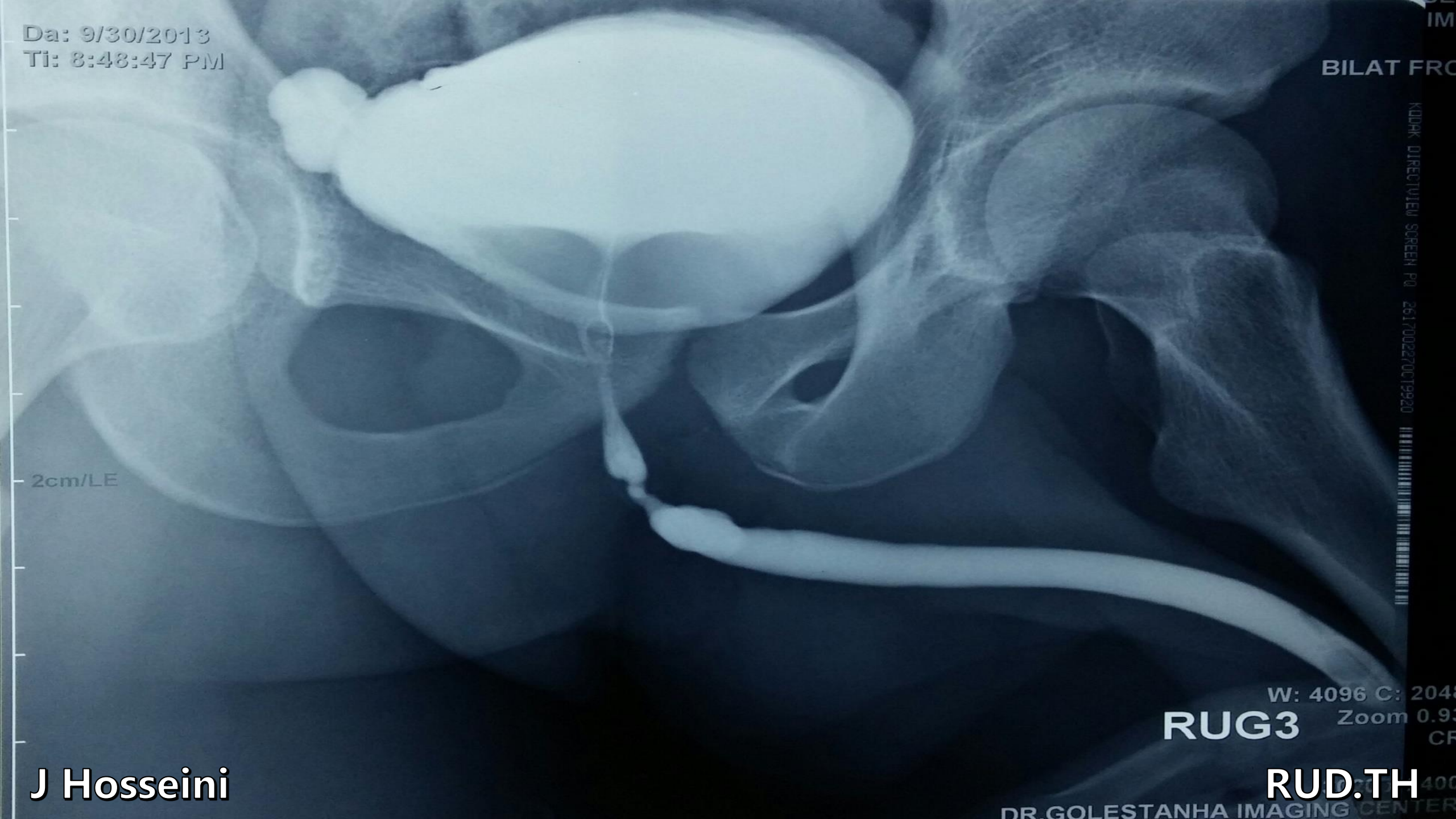
- The proposed surgical methods for reducing injury to these structures during Urethroplasty include bulbospongiosus and perineal nerve preservation, bulbar artery preservation, and non-transection of the corpus spongiosum

- During Urethroplasty for PFUI, dissection is carried out more posteriorly to excise scar tissue and to gain adequate length for tension-free anastomosis.

- To achieve tension-free anastomosis, corporeal separation or inferior pubectomy may be needed, increasing the chances of injury to neurovascular structures and thereby increasing the likelihood that ED will develop.

- ED after urethroplasty is the issue that most of the patients are concerning
- General Urologists make warning to the patients and guide them to repeat DVIU
- Warning is on ED after Urethroplasty
- We observe many patients with frequent DVIU and complicated Stricture with Bladder or Upper tract damage.
- It is helpful to clarify the risk of ED after Urethroplasty


Yosefi, Hafez
7=95
CLASSIC CR
SE: 6
IM: 1
Da: 9/30/2013
Ti: 8:53:00 PM
BILAT FROG
2cm/LE
W: 4096 C: 2048
Zoom 1.26
CR
J Hosseini
VOIDING2
DR.GOLESTANHA IMAGING CENTER
RUD.TH


Da: 9/30/2013
Ti: 8:48:47 PM
BILAT FRO
KODAK DIRECTVIEW SCREEN PO 2617002270019920
2cm/LE
W: 4096 C: 2048
Zoom 0.93
RUG3
DR GOLESTANHA IMAGING CENTER
J Hosseini
RUD.TH

ED After Urethroplasty

What the best level evidence say?

Too Much??

prevent urethroplasty

which is more:
Anterior
Posterior
Any drug benefit

Blackwell Publishing

Asian J Androl 2008; 10 (1): 75–78
DOI: 10.1111/j.1745-7262.2008.00349.x

AJA
www.asiaandro.com

Review

Erectile function after urethral reconstruction

Joshua Carlton, Maharshi Patel, Allen F. Morey

Department of Urology, UT Southwestern Medical Center, Dallas, Texas 75390-9110, USA

Abstract

Advances in urogenital plastic surgical tissue transfer techniques have enabled urethral reconstruction surgery to become the new gold-standard for treatment of refractory urethral stricture disease. Questions remain, however, regarding the long-term implications on sexual function after major genital reconstructive surgery. In this article, we review the pathologic features of urethral stricture disease and urologic trauma that may affect erectile function (EF) and assess the impact of various specific contemporary urethroplasty surgical techniques on male sexual function. *(Asian J Androl 2008 January; 10: 75–78)*

Keywords: urethral reconstruction; urethral stricture; erectile function; sexual function

Erectile function after urethral reconstruction

- ***General considerations***
  - *Age*
  - *Stricture length*
  - *Stricture location*
  - *Time between injury and surgery*
  - *Time after surgery*

- **Age:** The greatest impact on EF after urethroplasty surgery was shown in men in the age group of 50– 59 years.

- **Time between injury and surgery:** 20% improvement noted in those who were operated on after 6 months.

- **Time after surgery: ….**

Time after surgery:

- As time progresses from the date of surgery, considerable psychological and physical healing takes place.

- As time progressed, the rates of reported ED dropped remarkably to 5% and 9%, respectively.

Surgical Technique – Anterior Urethra

- New onset ED seems to be negligible following anterior (bulbar) anastomotic urethroplasty in many studies.
- ED seen with two-stage procedures: nearly 50% (Kessler 2002).
- Major Curvature (11%) and shortening (23%) with two-stage procedures (Coursey 2001)

Published in final edited form as:
BJU Int. 2013 September ; 112(5): 655–663. doi:10.1111/j.1464-410X.2012.11741.x.

De novo erectile dysfunction after anterior urethroplasty: a systematic review and meta-analysis

Sarah D. Blaschko, Melissa T. Sanford, Nadya M. Cinman, Jack W. McAninch, and Benjamin N. Breyer
Department of Urology, University of California San Francisco, San Francisco, CA, USA

Abstract

- To evaluate the likelihood of developing *de novo* erectile dysfunction (ED) after anterior urethroplasty and to determine if this likelihood is influenced by age, stricture length, number of previous procedures or timing of evaluation.
- PubMed, Embase, Cochrane, and Google Scholar databases were searched for the terms `urethroplasty', `urethral obstruction', `urethral stricture', `sexual function', `erection', `erectile function', `erectile dysfunction', `impotence' and `sexual dysfunction'.
- Two reviewers evaluated articles for inclusion based on predetermined criteria.
- In a meta-analysis of 36 studies with a total of 2323 patients, *de novo* ED was rare, with an incidence of 1%.
- In studies that assessed postoperative erectile function at more than one time point, ED was transient and resolved at between 6 and 12 months in 86% of cases.
- Men should be counselled regarding the possibility of transient or permanent *de novo* ED after anterior urethroplasty procedures.
- Increasing mean age was associated with an increased likelihood of *de novo* ED, but this was not statistically significant.

De novo ED

Systematic Review
2013

- In a meta-analysis of 36 studies with a total of 2323 patients, *de novo* ED was rare, with an incidence of 1%.
- In studies that assessed postoperative erectile function at more than one time point, ED was transient and resolved at between 6 and 12 months in 86% of cases.

ED and Open Urethroplasty

Systematic Review and Meta-analysis 2013

The Relationship Between Erectile Dysfunction and Open Urethroplasty: A Systematic Review and Meta-Analysis

Chao Feng, MD, PhD,* Yue-Min Xu, MD, PhD,* Guido Barbagli, MD, PhD,†
Massimo Lazzeri, MD, PhD,† Chen-ye Tang, MD,* Qiang Fu, MD, PhD,* and Ying-Long Sa, MD*

*The Department of Urology, Affiliated Sixth People's Hospital, Shanghai Jiaotong University, Shanghai, China;
†The Center for Reconstructive Urethral Surgery, Arezzo, Italy

DOI: 10.1111/jsm.12181

Results. This meta-analysis consisted of 23 cohort studies, which included 1,729 cases. No significant difference was noticed in patients with anterior urethral stricture before or after intervention (odds ratio [OR] = 0.86; 95% confidence interval [CI]: 0.52–1.40; $P = 0.53$). While statistical difference in the incidence of ED was revealed in patients before and after intervention for a posterior urethral (OR = 2.51; 95% CI: 1.82–3.45; $P < 0.001$), further comparisons demonstrated that most anterior urethroplasties did not have an obvious effect on patient erectile function. However, it seems that the incidence of ED was higher in the bulbar anastomosis group than in the oral graft urethroplasty group (OR = 0.32 95% CI: 0.11–0.93; $P = 0.04$). For the posterior urethroplasty, previous operative history did not show a strong relationship with ED. No statistically significant difference in the risk of ED was demonstrated comparing the posterior urethral reconstructive techniques included in this analysis.

Conclusion. The adverse effect of urethroplasty itself on erectile function is limited, as more patients recover erectile function after urethral reconstruction. For anterior urethroplasty, bulbar anastomosis might cause a slightly higher incidence of ED than other operations. For posterior urethroplasty, trauma might be the main cause of ED. Feng

REVIEW

The management of the acute setting of pelvic fracture urethral injury (realignment vs. suprapubic cystostomy alone)

Jonathan N. Warner *, Richard A. Santucci

Detroit Medical Center, Detroit, MI, USA

2014

Received 9 June 2014, Received in revised form 25 July 2014, Accepted 11 August 2014
Available online 17 September 2014

KEYWORDS

Pelvic fracture;
Urethral injury;
Urethral realignment

ABBREVIATIONS

PFUI, pelvic fracture urethral injury;
STDU, suprapubic tube with delayed urethroplasty;
ED, erectile dysfunction;
EPR, early non-endo-

Abstract ***Background:*** In patients with pelvic fracture urethral injury there are two options for management: First, to realign as an early primary realignment over a catheter; and second, to place a suprapubic tube with delayed urethroplasty of the inevitable stricture.

Methods: We reviewed previous reports from 1990 to the present, comparing early endoscopic realignment, early open realignment and suprapubic tube placement, to determine the rates of incontinence, erectile dysfunction and stricture formation.

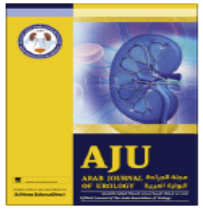
Results: Twenty-nine articles were identified. The rates of erectile dysfunction, incontinence, and stricture formation, respectively, were: for early endoscopic realignment, 20.5%, 5.8% and 43.8%; for open realignment over a catheter, 16.7%, 4.7% and 48.9%; and for a suprapubic tube and delayed urethroplasty 13.7%, 5.0%, and 89.0%. A one-way anova showed no difference in the mean rate of erectile dysfunction ($P = 0.53$) or incontinence ($P = 0.73$), and only stricture formation was significantly different ($P < 0.1$).

- **Conclusion:** The rates of incontinence and erectile dysfunction are similar between the groups(Realignment, delayed Urethroplasty).

Arab Journal of Urology (2015) 13, 68–74

Arab Journal of Urology
(Official Journal of the Arab Association of Urology)

www.sciencedirect.com



PFUI-RELATED COMPLICATIONS REVIEW – 2015

The incidence of erectile dysfunction after pelvic fracture urethral injury: A systematic review and meta-analysis

Sarah D. Blaschko [a,*], Melissa T. Sanford [a], Bruce J. Schlomer [a], Amjad Alwaal [a], Glen Yang [a], Jacqueline D. Villalta [a], Hunter Wessells [b], Jack W. McAninch [a], Benjamin N. Breyer [a]

[a] *Department of Urology, University of California, San Francisco, CA, USA*
[b] *Department of Urology, University of Washington, Seattle, WA, USA*

- After pelvic fracture, 34%of patients had ED. After primary endoscopic alignment, patients had a lower reported rate of ED (16%).
- Delayed urethroplasty conferred an additional 3% risk above the 34% associated with PFUI alone.

Erectile Dysfunction After Anterior Urethroplasty: A Prospective Analysis of Incidence and Probability of Recovery—Single-center Experience

Prem N. Dogra, Ashish Kumar Saini, Amlesh Seth

OBJECTIVE To evaluate the incidence and probability of recovery of erectile dysfunction after different types of one-stage urethroplasties for anterior urethral stricture disease.

METHODS Seventy-eight men undergoing single-stage anterior urethroplasty from January 1, 2008 to March 31, 2010 were followed prospectively. Patients were divided into 3 groups: group 1 (n = 25)—penile substitution urethroplasty; group 2 (n = 32)—primary excision anastomotic bulbar urethroplasty; and group 3 (n = 21)—bulbar substitution urethroplasty. Patients willing to participate completed the International Index of Erectile Function (IIEF) preoperatively and then on subsequent follow-up visits at 3, 6, 9, 12, and 15 months after urethroplasty. Pre- and post-urethroplasty erectile functions were compared.

RESULTS Our mean follow-up period was 15.50 + 2.389 months. The mean age (years) was similar among groups. The mean stricture length (cm) was 4.78 ± 0.747, 2.95 ± 0.658, and 6.13 ± 0.981 in-groups 1, 2, and 3, respectively ($P = .001$). Mean preoperative IIEF score was 24.60 ± 2.365 (similar among groups). Erectile dysfunction (ED) was found in 15 (20%) patients: 4/25 (16%), 9/32 (28%), and 2/21 (10%) in groups 1, 2, and 3, respectively. Mean postoperative decline (3 months) in IIEF score was 22.54 ± 4.823. Overall, the decline was not significant among groups ($P = .502$.) Recovery of erectile function was seen in 75/78 (96%) men at a mean follow-up time of 5.63 ± 2.59 months.

CONCLUSIONS Anterior urethroplasty has a probability of causing ED in as much as 20% of patients. The type of urethroplasty has no significant effect on ED. Recovery of erectile function occurs within 6 months of urethroplasty. UROLOGY 78: 78–81, 2011.

METHODS Seventy-eight men undergoing single-stage anterior urethroplasty from January 1, 2008 to March 31, 2010 were followed prospectively. Patients were divided into 3 groups: group 1 (n = 25)—penile substitution urethroplasty; group 2 (n = 32)—primary excision anastomotic bulbar urethroplasty; and group 3 (n = 21)—bulbar substitution urethroplasty. Patients willing to

CONCLUSIONS Anterior urethroplasty has a probability of causing ED in as much as 20% of patients. The type of urethroplasty has no significant effect on ED. Recovery of erectile function occurs within 6 months of urethroplasty. UROLOGY 78: 78–81, 2011. © 2011 Published by Elsevier Inc.

Post-Urethroplasty ED and PDE5Is

An Assessment of the Efficacy and Safety of Sildenafil Administered to Patients with Erectile Dysfunction Referred for Posterior Urethroplasty: A Single-Center Experience

Qiang Fu, MD, PhD*, XianJun Sun, MD*, ChenYe Tang, MD*, RenJie Cui, MD, PhD,* and Lei Chen, MD†

*Department of Urology, Shanghai 6th Hospital, Shanghai Jiaotong University—Urethral Disease Diagnosis and Treatment Center, Shanghai, China; †Department of Ultrasound, Shanghai 6th Hospital, Shanghai Jiaotong University, Shanghai, China

DOI: 10.1111/j.1743-6109.2011.02470.x

Methods. Pharmacopenile duplex ultrasonography was used to examine blood flow of the cavernosum in order to distinguish arterial ED, venous ED, and nonvascular ED. All patients were treated with oral sildenafil, 100 mg once daily, three times a week, for 3 months.

Results. The incidence of ED following injury was 95.12%. There were no significant changes in scores following surgery. However, sildenafil had a success rate of approximately 81%, which appeared to be independent of age. Drug treatment seemed most effective for those with less severe ED at the outset. There was no significant difference in scores post-treatment between those who had vascular and nonvascular ED. Overall, the incidence of side effects due to sildenafil was 19.5%.

Conclusions. Urethral trauma is frequently associated with ED. Sildenafil citrate is useful in the drug treatment of ED in these patients and appears to be well-tolerated. **Fu Q, Sun XJ, Tang CY, Cui RJ, and Chen L. An assessment of the efficacy and safety of sildenafil administered to patients with erectile dysfunction referred for posterior urethroplasty: A single-center experience. J Sex Med 2012;9:282–287.**

J Urol. 2004 Dec;172(6 Pt 1):2350-2.

The role of sildenafil in the treatment of erectile dysfunction in patients with pelvic fracture urethral disruption.

Shenfeld OZ[1], Gofrit ON, Gdor Y, Landau I, Katz R, Pode D.

Author information

Abstract

PURPOSE: Erectile dysfunction (ED) is a common sequel of pelvic fracture urethral disruption (PFUD). After repair of the urethral injury ED may be the most devastating long-term effect for the patient. Some patients with ED may regain normal erectile function. We prospectively studied the response to sildenafil and the erectile function of patients with ED due to PFUD.

MATERIALS AND METHODS: The erectile function of patients referred to us with PFUD for urethroplasty were prospectively evaluated before surgery. Patients underwent nocturnal penile tumescence testing and, if results were abnormal, penile duplex ultrasonography with intracavernous injection and arteriography were performed to diagnose the etiology of ED. Patients were questioned about erectile function every 3 months after surgery and if they complained of ED they were offered 100 mg sildenafil. Patients were followed for at least 18 months after surgery.

RESULTS: A total of 29 consecutive patients were evaluated and 22 (76%) of them had ED before surgery. Sufficient followup was available for 15 of the patients. Overall 47% of these patients responded favorably to sildenafil. Of the patients 60% with neurogenic ED and 20% of those with arterial ED responded to this treatment. In 33% of the patients ED resolved within the followup period. All patients with spontaneous resolution of ED previously responded to sildenafil (71% of sildenafil responders).

CONCLUSIONS: In patients with ED due to PFUD, those with neurogenic ED are more likely to respond to sildenafil than those with arterial damage. Favorable response to sildenafil may predict spontaneous resumption of normal erectile function over time.

PMID: 15538265

[Indexed for MEDLINE]

Those with neurogenic ED are more likely to respond to sildenafil than those with arterial damage.

Role of Nocturnal Penile Erection Test on Response to Daily Sildenafil in Patients With Erectile Dysfunction due to Pelvic Fracture Urethral Disruption: A Single-center Experience

Jing Peng, Zhichao Zhang, Wanshou Cui, Yiming Yuan, Bing Gao, Weidong Song, and Zhongcheng Xin

OBJECTIVE To evaluate the results of nocturnal penile erection test and response to daily sildenafil in patients with erectile dysfunction (ED) due to pelvic fracture urethral disruption.

METHODS From January 2010 to January 2012, we included 38 patients with ED due to pelvic fracture urethral disruption. The mean age was 33.1 years (range, 22-49 years). All were evaluated subjectively and objectively by the International Index of Erectile Function-5, nocturnal penile tumescence and rigidity (NPTR) test, and penile Doppler ultrasonography. Patients received daily sildenafil 50 mg for 3 months.

RESULTS Thirty-one patients were followed up: 54.8% showed response to sildenafil defined as reporting successful vaginal penetration and intercourse. Patients with neurogenic, arterial, and venous EDs did not differ in efficiency rates ($P = .587$). However, the penile erectile rigidity recorded by NPTR test affected efficiency significantly ($P = .046$). Patients with tip rigidity >40% had the highest response rate (76.9%), but the response rate for patients with tip rigidity <20% was only 22.2%.

CONCLUSION NPTR recording can reveal resident erectile function in patients with ED due to trauma and is significant for selecting pharmacologic treatment as optimal therapy. UROLOGY 84: 1389–1394, 2014. © 2014 Elsevier Inc.

- Dose: 50 mg daily sildenafil for 3 mo

- Neurogenic, Arterial and Venous ED did not differ in response rates

- Tip rigidity >40% was associated with highest response rates

- NPTR can reveal resident Erectile function due to trauma and is significant for selecting pharmacological therapy.

Urethral Transection and ED

World J Urol. 2017 May;35(5):839-845. doi: 10.1007/s00345-016-1926-z. Epub 2016 Aug 25.

The effect of urethral transection on erectile function after anterior urethroplasty.

Haines T[1], Rourke KF[2].

⊕ Author information

Abstract

PURPOSE: To prospectively assess the effect of urethral transection on erectile function after anterior urethroplasty.

METHODS: From February 2012 to December 2014, 104 patients were enrolled in a prospective study assessing erectile function (EF) after anterior urethroplasty. Participants completed the International Index of Erectile Function (IIEF) questionnaire preoperatively and 6 months postoperatively. Outcome measures were the incidence of erectile dysfunction (ED) defined by ≥5-point change in EF and mean change in the EF domain. Factors examined were urethral transection, stricture location, patient age and other demographics. Fisher's exact test, Student's t test and linear regression were used to evaluate associations when appropriate.

RESULTS: Seventeen patients were excluded because of poor EF, leaving 87 patients for analysis. Twenty-two patients (25.3 %) had urethral transection during urethroplasty, while 65 underwent non-transecting techniques (74.7 %). For the entire cohort, IIEF scores remain unchanged (20.16 versus 20.14; p = 0.98). Eighteen patients (20.7 %) developed ED, while 15 (17.2 %) experienced an improvement in EF. Urethral transection was not associated with ED (p = 0.22) or mean change in EF (-0.8 versus +0.2; p = 0.71). Stricture location was not associated with ED, but patient age ≥50 was associated with a decrease in mean postoperative EF (-2.84 versus +1.85; p = 0.04). On linear regression analysis patient age remained independently associated with adverse change in EF (p = 0.05).

CONCLUSIONS: Urethroplasty can result in a decline in erectile function in some patients but overall is associated with minimal change in erectile function. Urethral transection is not associated with adverse change in erectile dysfunction after urethroplasty however, advanced patient age is.

KEYWORDS: Erectile dysfunction; Urethral stricture; Urethral transection; Urethroplasty

urethral transection is not associated with adverse changes in ED

Author	Total no patient	Mean age	Mean urethral stricture size	Urethroplasty type	Location of stricture
Dharwadkar Sachin Sex Med Rev. 2017	102urethroplasty Include=48	21-50	_	22=SU 18=EEU 8=PU	_
Trevor Haines World Journal of Urology 2015	104 urethroplasty Include=87	44.1	4.5cm	49=SU 23=EEU 15=staged U	23(26.4%)=penile 64(73.6%)=bulbar
Ahmed El-Assmy International Urology and Nephrology 2015	81urethroplasty Include=48 42=veno_occlusive 2=arteial 4=mixed	18-73	40.2±11.3mm	_	_
Prem N.Dogra Urology2011	89 urethroplasty Include=78	38.12±13.07	4.78 ± 0.747cm	46=SU 32=EEU	25=penile 53=bulbar (32=EEU,21=SU)
Bradley A.Erickson The Journal of Urology2010	59urethroplasty Include=43	_	4.1±1.1cm	24=SU 19=EEU	13=penile 30=bulbar
Bradley A.Erickson The Journal of Urology2010	72urethroplasty Include=52	42.4±16.4	5,72±3.89cm	32=SU 20=EEU	17=penile 35=bulbar
Tang CYCan J Urol. 2012 J Hosseini	41	_			RUD.TH

Mean IIEF-5 Pre.op	Mean IIEF-5pos.op				Median Follow up	ED		
	3w	3m	6m	12m		3m	6m	12m
24.15±0.8 PFUI (24.0±1.2)	-	20.10±4.2	22.70±2.3	23.70±1.7	_	Su=12 EEU=11 PFUI=5(18.8±5.4)	Su=6 EEU=3 PFUI=3(20.9±3.5)	Su=2 EEU=2 PFUI=2(22.0±1.5)
TRANSECTING=18.4 NONETRANSECTING=20,7	-	-	-0.8 +0.2	-	_	TRANSECTING=31,8% NONTRANSECTING=16.9%		
24.60 ± 2.365	-	22.54 ± 4.823	24.12 ± 3.388	-	15.50 + 2.389months			
_	-	-	-	-	6.8 ± 5.2 months	11 → 6=bulbar 5=penile	4=bulbar 1=penile	
					98 vs 217 days	20 → 14=bulbar 6=penile		
10.02 ± 3.57	9.29 ± 4.14							

J Hosseini

RUD.TH

author	conclusion
Dharwadkar Sachin Sex Med Rev. 2017	In patients with normal preoperative erectile function, the incidence of ED following surgery for PFUI was found to be similar to that following surgery for anterior urethral stricture at 1 year postoperatively.
Trevor Haines World Journal of Urology 2015	Urethral transection does have an obvious association with adverse change in erectile function, however, increased patient age is.
Ahmed El-Assmy International Urology and Nephrology 2015	PFUIs have a probability of causing ED as much as 72.3 % compared to 35.3 and 0 % in men with straddle and iatrogenic urethral injuries, respectively. Recovery of EF occurs within 2 years after initial urethral trauma or surgery . None of the patients with severe pelvic fracture (type C) had a chance to regain their EF.
Prem N.Dogra Urology2011	The type of urethroplasty, age, and stricture length has no significant effect on ED. Recovery of EF occurs in more than 96% of cases within 6 months of urethroplasty
Bradley A.Erickson The Journal of Urology2010	Bulbocavernosus muscle splitting does not appear to be detrimental to EF function. However, the positive effects provided by relieving urethral obstruction may simply negate any harm caused by splitting the muscle. Objective testing is required to fully evaluate the effects of urethral reconstructive surgery on EjF.
Bradley A.Erickson The Journal of Urology2010	postoperative ED may be avoidable with refined surgical techniques

EEU=end to end urethroplsty SU=Substitution urethroplasty PU=perineal urethroplasty PFUI=pelvic fracture urethral injury

Post-Urethroplasty Erectile Dysfunction

Urology Journal ,Vol 15 No 02 March-April 2018

Effects of Anastomotic Posterior Urethroplasty (Simple or Complex) on Erectile Function: a Prospective Study

Jalil Hosseini[1,2]*, Farzen Soleimanzadeh[2], Behrouz Fadavi[2], Hamidreza Haghighatkhah[3]

Purpose: Although improvements in urological function have been less challenged, concern about andrological problems following urethral stricture surgeries has been growing in recent years. The aim of this study is to evaluate the role of the anastomotic urethroplasty itself on erectile function in patients with posterior urethral injuries.

Materials and Methods: In this prospective cohort study, patients with urethral strictures referring to Tajrish Hospital during October 2013 to August 2016 for anastomotic urethroplasty, were included. All subjects underwent radiologic studies along with rigid and flexible cystoscopy before surgery. Erectile function was evaluated before surgery (twice, addressing pre-traumatic and pre-operational conditions) and after surgery (3 and 6 months post-operatively) via IIEF-5 erectile function questionnaire and color Doppler ultrasound assessment of penile vasculature.

Results: A total of 65 patients with an average age of 30.6 ± 6.1 years were included. A significant decline was observed in erectile function of patients after the injury based on IIEF-5 questionnaire filled twice separately addressing patient conditions before and after trauma (mean IIEF score 23.15 ± 0.93 to 13.45 ± 5.43, $P = .001$). There was also a significant difference in erectile function of subjects with pelvic fractures compared to those without pelvic fractures (10.43 ± 3.78 vs. 18.96 ± 3.18 $P = .001$). Univariate and multivariate analyses showed that urethroplasty itself does not significantly affect erectile function in patients according to penile color Doppler ultrasonography (peak cystolic velocity at cavernosal arteries before and after surgery: right 26.87 ± 6.93 vs26.16 ± 6.53 respectively and left 27.23 ± 5.21 vs 26.52 ± 4.38 respectively) and IIEF-5 erectile function questionnaire (13.12 ± 5.38 vs. 13.54 ± 5.44; $P = .26$).

Conclusion: The results of this study showed that urethroplasty does not significantly affect erectile function in patients with urethral strictures. The marginal results showing a negatively affected erectile function in patients with complex strictures may be attributed to a real impact of the surgery in this subgroup or lower number of these cases in our study.

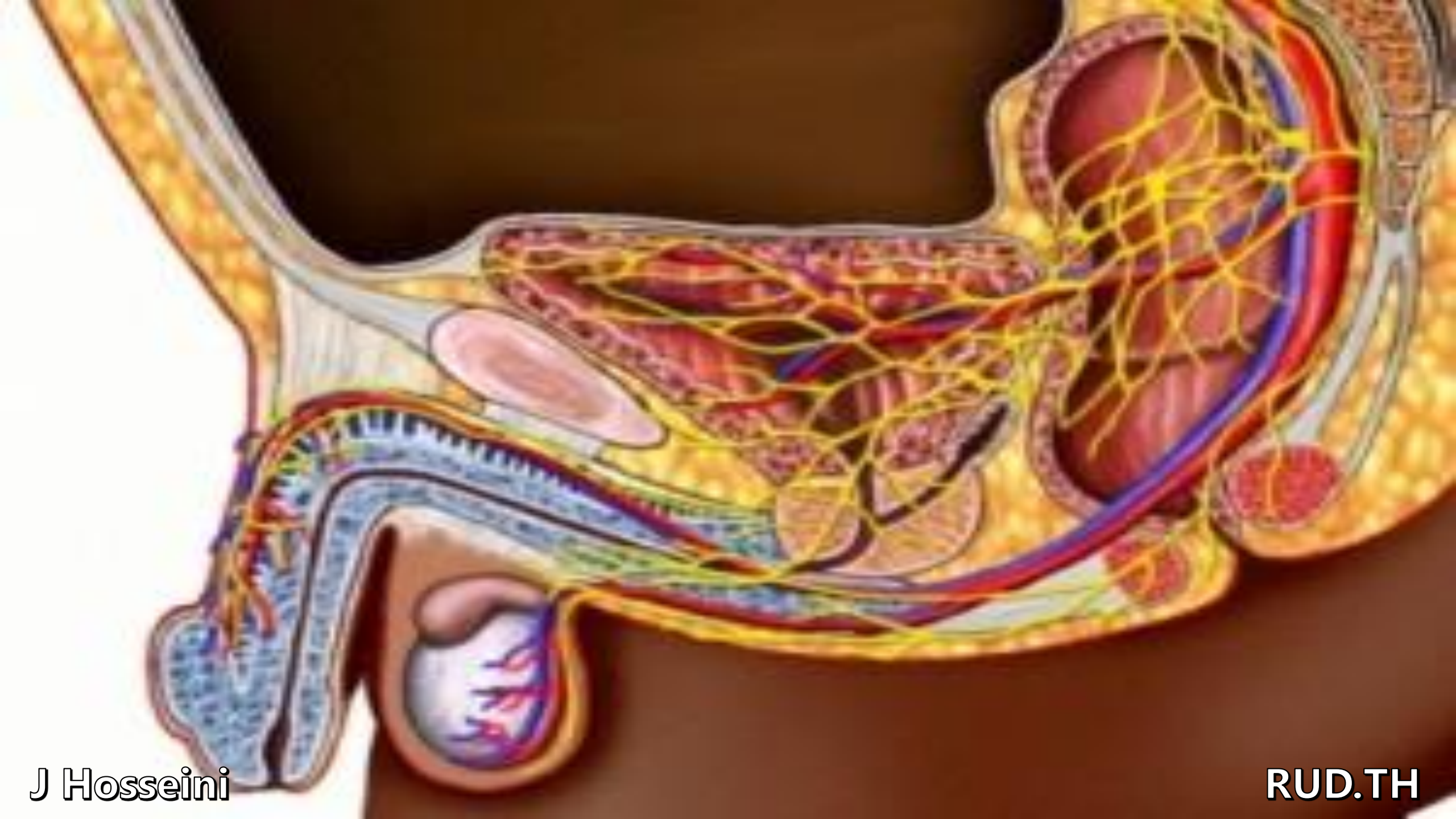
Keywords: erectile dysfunction; reconstructive surgical procedures; urethral stricture; urethroplasty; urethral transection.

- This study is one of the few prospective studies evaluating erectile function after anastomotic urethroplasty simultaneously With ED Questionnaire and color Doppler ultrasound of penile vasculature

Jalil Hosseini et.al reconstructive surgery2017

- The psychological stress caused by urethral stricture and its surgical interventions along with the inflammation and edema after surgery could also contribute to development of ED.

Jalil Hosseini urology journal 2018


J Hosseini
RUD.TH

MATERIALS AND METHODS

- prospective cohort study
- 65 patients with urethral strictures referring to Tajrish Hospital during October 2013 to August 2016
- All subjects with different traumatic causes , more than 6 months had passed from their trauma
- None of them had erectile dysfunction prior to the trauma, they were all married and capable of having intercourse.

Jalil Hosseini urology journal 2018

Exclusion criteria:

- psychological erectile dysfunction
- hormonal problems in their lab
- any uncontrolled systemic diseases such as :
- diabetes,
- hypertension,
- dyslipidemia,
- thyroid dysfunction
- history of using any medicine that could affect erectile function
- anti-depressants or psychoactive drugs

Jalil Hosseini urology journal 2018

- The anatomical site of defect was described as bulbar (proximal bulbar, Adjacent to the membranous area), bulbo-membranous and membranous urethra.

Jalil Hosseini urology journal 2018

Complex cases:

- history of previous urethral surgery
- stricture length more than 6 centimeters.

- Color Doppler ultrasound assessment of the penile vasculature was performed by a radiologist before and 6 months after

Jalil Hosseini urology journal 2018

- Erectile function was evaluated via a translated and culturally adapted

  Iranian version of the International Index of Erectile Function (IIEF - 5) questionnaire,

- Questionnaire was filled twice on the day before surgery based on their sexual activity condition before and after trauma.

- **5 groups based on the scores :**

  severe dysfunction to normal function

Jalil Hosseini urology journal 2018

- Further assessments were performed 3 and 6 months after the surgery.

- Anastomotic urethroplasty was done by a single surgeon in all subjects.

Jalil Hosseini urology journal 2018

RESULTS

- A total of 65 patients with an average age of 30.6 ± 6.1 years were included.
- Motor-vehicle accident reported in 48 (73.8%) patients
- Fall from heights observed in 9 subjects (14%).
- Occupational trauma (6 patients)
- Traumatic catheterization (2 patients).

Jalil Hosseini urology journal 2018

Table 1. The frequency of pelvic fracture, previous pelvic surgery, previous endoscopic interventions and failed urethroplasty based on the location and length of the stricture.

Characteristics	History of Pelvic fracture N (%)	History of previous endoscopic manipulation N(%)	History of failed urethroplasty N (%)	History of pelvic surgery N (%)
Bulbar Urethra (14 patients)	5 (35.7)	8 (57.1)	3 (21.4)	2 (14.2)
Membranous Urethra (3 patients)	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)
Bulbo-Mmembranous Urethra (48 patients)	36 (75)	10 (20.8)	15 (31.2)	15 (31.5)
Stricture length ≤ 2 (6 patients)	2 (33.3)	3 (50.0)	0 (0.0)	2 (33.3)
2 < Stricture length ≤ 4 (32 patients)	21 (65.6)	12 (37.5)	4 (12.5)	6 (18.7)
4 < Stricture length ≤ 6 (19 patients)	14 (73.7)	5 (26.3)	9 (47.4)	7 (36.8)
Stricture length > 6 (8 patients)	5 (62.5)	0 (0.0)	5 (62.5)	2 (25.0)

- A significant decline was observed in erectile function of patients based on IIEF - 5 questionnaire after the incident (23.15 ± 0.93 to 13.45 ± 5.43; P = .001).

- significant difference was observed in erectile function of subjects with pelvic fractures compared to those without pelvic fractures (10.43 ± 3.78 vs. 18.96 ± 3.18; P = .001).

Jalil Hosseini urology journal 2018

Table 2. Frequency of erectile dysfunction according to IIEF-5 questionnaire, before and 6 months after urethroplasty.

ED classification	Before urethroplasty N (%)	6 months After urethroplasty N (%)
No ED	10 (15.4)	11 (17.0)
Mild ED	12 (18.5)	7 (9.2)
Mild to Moderate ED	9 (13.8)	14 (24.6)
Moderate ED	19 (29.2)	15 (21.5)
Severe ED	15 (23.1)	18 (27.7)
Total	65 (100.0)	65 (100.0)

Table 3. Results of linear regression analysis on the variables affecting erectile function after urethroplasty

Variable	Linear Regression	*P* value
Site of urethral stricture	-1.38 ± 2.07	0.50
Age	-0.07 ± 0.05	0.15
Length of urethral stricture	0.57 ± 1.75	0.74
History of pelvic fracture	0.41 ± 0.74	0.57
History of pelvic surgery	-0.37 ± 0.81	0.64
History of endoscopic manipulation	0.22 ± 0.67	0.74
History of failed urethroplasty	0.02 ± 0.84	0.97

- Univariate and multivariate analyses showed that urethroplasty did not significantly affect erectile function in patients according to penile color Doppler sonography and IIEF-5 erectile function questionnaire (13.12 ± 5.38 vs. 13.54 ± 5.44; P = .26).

- In brief, the IIEF-5 score changed from 13.45 ± 5.43 before surgery to 13.12 ± 5.38 three months after surgery and finally 13.40 ± 5.53 six months after surgery

Jalil Hosseini urology journal 2018

- Age, location and length of stricture had no significant effects on erectile function of patients before and after urethroplasty (P > .05), but stricture longer than 6 cm had a marginal P value of .06 in univariate analysis.

- None of the evaluated variables were able to independently predict the effects of urethroplasty on erectile function of patients.

- We also found a marginal p value of 0.06 for development of ED in patients with strictures longer than 6 cm

Jalil Hosseini urology journal 2018

CONCLUSION

- Anastomotic urethroplasty does not significantly affect erectile function in patents with urethral strictures and no Independent predictors were Identified for the effects of urethroplasty on erectile function of patients.

CONCLUSION

- Anastomotic urethroplasty does not significantly affect erectile function
- No independent predictors were identified for the effects of urethroplasty on erectile function of patients.
- Subjects should be followed for a longer duration of time and specific neurogenic assessments for the etiology of ED should be performed.

Post-Urethroplasty Erectile Dysfunction

Take Home Message

PELVIC FRACTURES AND SIGNIFICANT STRADDLE INJURIES COMMONLY CAUSE INJURY TO THE CAVERNOUS NERVES AND PUDENDAL ARTERY BRANCHES.

THE INITIAL INJURY, NOT THE RECONSTRUCTIVE SURGERY, IS RESPONSIBLE FOR MOST OF THE LONG-TERM PROBLEMS WITH SEXUAL FUNCTION.

Post-Urethroplasty Erectile Dysfunction

Take Home Message

URETHRAL TRANSECTION IS NOT ASSOCIATED WITH ADVERSE CHANGES IN ED

SILDENAFIL 3 TIMES PER WEEK FOR 3 MONTH AFTER URETHROPLASTY CAN HELP

Post-Urethroplasty Erectile Dysfunction

Take Home Message

ANASTOMOTIC URETHROPLASTY DOES NOT SIGNIFICANTLY AFFECT ERECTILE FUNCTION IN EXPERIENCED CENTER

NO INDEPENDENT PREDICTORS (AGE, STRICTURE. LENGTH,…)WERE IDENTIFIED FOR THE EFFECTS OF URETHROPLASTY ON ERECTILE FUNCTION OF PATIENTS.

Post-Urethroplasty Erectile Dysfunction

Final *Take Home Message*

ED AFTER URETHROPLASTY **WAS** THE ISSUE THAT MOST OF THE PATIENTS ARE CONCERNING

WE **DO NOT WANT** TO OBSERVE MANY PATIENTS WITH FREQUENT DVIU AND COMPLICATED STRICTURE WITH BLADDER OR UPPER TRACT DAMAGE.

SO WE NEED MORE LEARNING, EDUCATION, CASE DISCUSSION THROUGH EXPERT CENTERS IN UAA COUNTRIES AND THE WORLD

THANK YOU FOR YOUR ATTENTION !

CHEHEL SOTUN , ISFAHAN