



OPEN ACCESS

Key Words

Brief male sexual function inventory, sexual function, urethral stricture and urethroplasty

Corresponding Author

Partha Protim Mondal,
Department of Urology, R G Kar
Medical College and Hospital, Shyam
Bazar, Kolkata, West Bengal 700004,
India drpartha2011@gmail.com

Author Designation

^{1,5}Senior Resident

²Associate Professor

^{3,4}Assistant Professor

Received: 31 December 2023

Accepted: 20 February 2024

Published: 25 February 2024

Citation: Arif Islam, Partha Protim Mondal, Shashi Kant Tewari, Sudipto Kumar Singh, Anik Ghosh and Kunjan Kumar, 2024. Evaluation of Sexual Well-Being of Patients Following Reconstructive Surgery for Urethral Stricture Disease. Res. J. Med. Sci., 18: 289-297, doi: 10.59218/makrjms.2024.4.289.297

Copy Right: MAK HILL Publications

Evaluation of Sexual Well-Being of Patients Following Reconstructive Surgery for Urethral Stricture Disease

¹Arif Islam, ²Partha Protim Mondal, ³Shashi Kant Tewari, ⁴Sudipto Kumar Singh, ⁵Anik Ghosh and ⁶Kunjan Kumar

¹⁻⁶Department of Urology, R G Kar Medical College and Hospital, Shyam Bazar, Kolkata, West Bengal 700004, India

ABSTRACT

Urethral stricture illness is a significant concern for patients seeking treatment at urology clinics worldwide. Urethroplasty is widely regarded as the most effective treatment for urethral stricture disease, making it the preferred choice among all available treatment alternatives. Nevertheless, these operations are intricate, time-consuming and necessitate significant dissection of the penis and perineal region. Therefore, it is fairly uncommon for sexual dysfunction to occur as an undesirable result after the procedure. Analyze the patients thoroughly with regards to their demographic information, medical history and findings from the physical examination. The impact of the genesis, location and length of the Stricture illness on the result of reconstructive surgery, specifically in relation to sexual function. A Prospective analytical study 24 months, From May 2021 to April 2023, Department of urology and all patients admitted in urology ward of RGKMCH undergoing reconstructive surgery for urethral stricture disease, R.G Kar Government Medical College and Hospital, Kolkata. The study examined the overall scores based on sexual drive, erectile function and ejaculatory function at pre-operative period and compared it with that of post-operative scores at 3 month and 6 month. The study also examined the impact of age, location of stricture, length of structure, etiology of stricture, surgical procedures performed on the changes in all 3 domain of sexual function. P-Value of the study was 0.05. There was a little and not statistically significant improvement in sexual drive overall following surgery which was statistically significant in the 30-60 years age group. On the contrary patients aged over 60 had a statistically significant decline in postoperative sexual desire. There were no statistically significant effects on sexual drive observed in any other patient groups based on factors such as the length, location, etiology, or kind of surgery related to the stricture. We detected a statistically small decline in total erectile performance after surgery which was statistically significant in individuals with stricture caused by Bothered were no other etiologic categories or groups related to patient age, length or location of stricture, or surgical treatments that had a statistically significant effect on erectile function. Our study found that there was no significant decline in ejaculatory function after surgery and no group showed any statistically significant impact on ejaculatory function. An inconsequential enhancement was observed in all three domains with time when comparing the scores at 6 months post-operation with those at 3 months post-operation.

INTRODUCTION

Urethral stricture illness is a significant concern for patients seeking treatment at urology clinics worldwide. Urethroplasty is widely regarded as the most effective treatment for urethral stricture disease, surpassing all other existing alternatives. Nevertheless, these operations are intricate, time-consuming and necessitate significant dissection of the penis and perineal region. Therefore, it is fairly uncommon for sexual dysfunction to occur as an undesirable result after the procedure.

This element of the surgery requires thorough investigation primarily for two reasons. First and foremost, patients frequently refrain from adequately discussing sexual matters due to societal concerns. Consequently, while the long-term results of reconstructive surgery for urethral stricture are superior to other treatment methods, the overall quality of life for patients is still impaired. Furthermore, as our comprehension of sexual dysfunction improves and more effective treatment options become accessible, it becomes feasible to decrease their incidence and, if they do arise, establish suitable therapeutic approaches for them. Urethral stricture disease (USD) is a condition where the corpus spongiosum, which is a part of the urethra, becomes scarred and fibrotic, leading to a constriction of the urethral opening. The condition has multiple causes, primarily resulting from medical intervention, trauma, infection and unknown reasons. The poor influence on a patient's quality of life is typically related with both the disease process itself and its sequelae. Various treatment approaches can be employed to control it, including dilatation, direct vision internal urethrotomy and open reconstruction. Reconstructive surgery is regarded as the most advantageous treatment modality due to its superior long-term outcomes, reduced likelihood of recurrence and cost-effectiveness. Therefore, urethroplasty is widely recognized as the most effective and reliable treatment for urethral stricture disease^[1]. Nevertheless, there is a significant risk of damaging the cavernous nerve, pudendal nerve, bulbar artery and bulbospongiosus muscle, which are crucial for proper erectile and ejaculatory function. This occurs due to the proximity of these structures to the surgical dissection during the surgery^[2]. Hence, de novo erectile dysfunction (ED) and ejaculatory dysfunction are significant problems that might arise during reconstructive surgery. In 1993, Mundy became the first urologist to document erectile dysfunction (ED) following urethroplasty^[3]. Urethral reconstruction primarily aims to relieve lower urinary tract symptoms (LUTS) caused by stricture, while preserving normal sexual function. However, the occurrence of new-onset sexual dysfunction (SD) is currently not well-documented.

The objective of this study is to evaluate the effects of anterior urethroplasty on sexual function, specifically in terms of erectile function, orgasmic function and overall satisfaction. We will consider various factors such as age, location of the stricture, length of the stricture, surgical technique, the occurrence of sexual dysfunction and the likelihood of functional recovery.

MATERIALS AND METHODS

Study Design: A Prospective analytical study.

Place of Study: R.G Kar Government Medical College and Hospital, Kolkata.

Time Period of Study: 24 months, From May 2021 to April 2023.

Study Area: Department of urology, RGKMCH.

Study Population: All patients admitted in urology ward of RGKMCH undergoing reconstructive surgery for urethral stricture disease.

Inclusion Criteria:

- Patients with urethral stricture disease
- Patients undergoing reconstructive surgery for the urethral stricture
- Individuals who gave consent to be a part of the study

Exclusion Criteria:

- Individuals who refrained from being a part of the study
- Patients receiving treatment modalities other than reconstructive surgery for urethral stricture
- Patients who did not complete the post-operative follow up till at least 6 months
- Sexually inactive patients
- Patients with psychiatric disturbances

Study Tool: Evaluation of sexual function was done using Brief Male Sexual Function Inventory (BMSFI) from O'Leary. For preoperative evaluation wordings had been slightly changed to correspond to the sexual wellbeing throughout a time interval before surgery. For post-operative evaluation also wordings had been changed to correspond the interval of 3 and 6 months after surgery.

RESULTS AND DISCUSSIONS

The mean Sexual Drive at Pre-operative, at 3 month and at 6 month post-operative period was 5.8667 ± 1.8333 , 5.6667 ± 1.5830 , 5.9000 ± 1.6682 . Change of mean Sexual Drive at Pre-operative, 3 months and 6 months post-op was not statistically significant ($p = 0.9949$) (Table 1).

Table 1: Distribution of Sexual Drive at Pre-operative, 3 months and 6 months post op

	Number	Mean	SD	Minimum	Maximum	Median	p-value
Sexual Drive at Pre-operative	30	5.8667	1.8333	2.0000	8.0000	6.0000	0.9949
Sexual Drive at 3 months post-op	30	5.6667	1.5830	2.0000	8.0000	6.0000	
Sexual Drive at 6 months post-op	30	5.9000	1.6682	3.0000	8.0000	6.0000	

Table 2: Distribution of Erectile Functions at pre-operative, 3 months and 6 month post-op

	Number	Mean	SD	Minimum	Maximum	Median	p-value
Erectile Functions at pre-operative	30	9.0333	2.1413	4.0000	12.0000	9.0000	0.9996
Erectile Functions at 3 months post-op	30	8.7000	2.0026	3.0000	12.0000	9.0000	
Erectile Functions at 6 months post-op	30	8.7667	2.0457	5.0000	12.0000	9.0000	

Table 3: Distribution of Ejaculatory Functions at pre-operative, 3 months and 6 months Post-op

	Number	Mean	SD	Minimum	Maximum	Median	p-value
Ejaculatory Functions at pre-operative	30	6.0333	2.1413	2.0000	7.0000	6.0000	0.9961
Ejaculatory Functions at 3 months post-op	30	5.7667	1.9061	2.0000	8.0000	6.0000	
Ejaculatory Functions at 6 months post-op	30	5.9832	1.9286	1.0000	8.0000	6.0000	

Table 4: Comparison between Different Age Group with Sexual Function Scores at Pre-operative, 3 and 6 months Post-op

	Score Mean (SD)			
Age Group	Pre-operative	At 3 months post-op	At 6 months post-op	p-value
Sexual Drive				
<30 Year	6.2857 (1.3801)	6.7143 (0.9512)	6.7143 (0.9512)	0.7854
30-60 Year	5.7619 (2.0471)	5.5238 (1.5690)	5.9048 (1.6403)	0.0242
>60 Year	5.5000 (0.7071)	3.5000 (0.7071)	3.0000 (0.0000)	0.0154
Erectile Functions				
<30 Year	10.268(2.3202)	8.5714 (1.2724)	9.0000 (2.1602)	0.2199
30-60 Year	9.4286 (1.8323)	9.0476 (1.8835)	9.0000 (1.8708)	0.0501
>60 Year	7.0000 (4.2426)	5.5000 (3.5355)	5.5000 (0.7071)	0.0597
Ejaculatory Functions				
<30 Year	6.8571 (1.3452)	6.2857 (1.6036)	5.5714 (1.9024)	0.5193
30-60 Year	5.7619 (2.3217)	5.6667 (1.9833)	5.8571 (1.8244)	0.6533
>60 Year	6.0000 (2.8284)	5.0000 (2.8284)	5.0000 (4.2426)	0.8193

The mean Erectile Functions at pre-operative, at 3 and 6 month post-operative period was 9.0333 ± 2.1413 , 8.7000 ± 2.0026 , 8.7667 ± 2.0457 . Change of mean Erectile Functions was not statistically significant ($p = 0.9996$) (Table 2).

The mean Ejaculatory Functions at pre-operative, at 3 and 6 month of post-operative period was 6.0333 ± 2.1413 , 5.7667 ± 1.9061 , 5.9832 ± 1.9286 . Change of mean Ejaculatory Functions was not statistically significant ($p = 0.9961$) (Table 3).

Age Group

Sexual Drive: In <30 age group, statistically not significant ($p = 0.7854$) increase in sexual drive was noted. Age group 30-60yr showed statistically significant ($p = 0.0242$) increase in sexual drive. In >60 age group, statistically significant ($p = 0.0154$) decrease in sexual drive was noted (Table 4).

Erectile Functions: All age groups showed decline in erectile function post operatively however the changes are not statistically significant.

Ejaculatory Functions: In <30 age group, statistically insignificant ($p = 0.5193$) decline in ejaculatory function was noted. In 30 - 60 age group, statistically insignificant ($p = 0.6533$) increase in ejaculatory function was noted. In >60 age group decline of ejaculatory function was not statistically significant ($p = 0.8193$).

Cause of Stricture

Sexual Drive: In BXO group, the mean Pre-operative (Mean \pm S.D.) of patients was 5.7000 ± 1.7670 , at 3 months post-op 5.5000 ± 1.7795 and at 6 months post-op 5.6000 ± 1.7764 , comparison between BXO group with scores was not statistically significant ($p = 0.6312$). In Iatrogenic group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.5000 ± 0.7071 , at 3 months post-op 5.0000 ± 0.0000 and at 6 months post-op 6.0000 ± 1.4142 , comparison between Iatrogenic with scores was not statistically significant ($p = 0.5689$). In Idiopathic group, the mean Pre-operative (Mean \pm S.D.) of patients was 5.5000 ± 1.9771 , at 3 months post-op 5.6667 ± 1.4975 and at 6 months post-op 5.7500 ± 1.4848 , the comparison between Idiopathic group with scores was not statistically significant ($p = 0.8206$). In Inflammatory group, the mean Pre-operative (Mean \pm S.D.) of patients was 7.3333 ± 1.1547 , at 3 months post-op 5.6667 ± 2.3094 and at 6 months post-op 6.6667 ± 2.3094 , comparison between Inflammatory group with scores was not statistically significant ($p = 0.9025$). In Traumatic group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.0000 ± 2.6458 , at 3 months post-op 6.6667 ± 1.5275 and at 6 months post-op 6.6667 ± 2.3094 so, the comparison between Traumatic group with scores was not statistically significant ($p = 0.8152$) (Table 5).

Erectile Functions: In BXO group, the mean Pre-operative (Mean \pm S.D.) of patients was 9.6569 ± 2.3250 ,

Table 5: Comparison between Different Cause of Stricture with Sexual Function Scores at Pre-operative, 3 and 6 months

	Score Mean (SD)			
Cause of Stricture	Pre-operative	At 3 months post-op	At 6 months post-op	p-value
Sexual Drive				
BXO	5.7000 (1.7670)	5.5000 (1.7795)	5.6000 (1.7764)	0.6312
Iatrogenic	6.5000 (0.7071)	5.0000 (0.0000)	6.0000 (1.4142)	0.5689
Idiopathic	5.5000 (1.9771)	5.6667 (1.4975)	5.7500 (1.4848)	0.8206
Inflammatory	7.3333 (1.1547)	5.6667 (2.3094)	6.6667 (2.3094)	0.9025
Traumatic	6.0000 (2.6458)	6.6667 (1.5275)	6.6667 (2.3094)	0.8152
Erectile Functions				
BXO	9.6569 (2.3250)	9.3232 (2.1705)	9.1243 (2.0248)	0.0364
Iatrogenic	9.3296 (1.3122)	8.2369 (1.4136)	8.1026 (0.6981)	0.9991
Idiopathic	10.000 (1.5954)	9.000 (1.8091)	9.0000 (2.3355)	0.2310
Inflammatory	11.000(1.7321)	10.333(0.5774)	10.333 (0.5774)	0.9399
Traumatic	9.5223 (1.5155)	8.3213 (2.5066)	8.1259 (2.4094)	0.5824
Ejaculatory Functions				
BXO	5.0000 (1.8257)	5.5000 (2.5495)	5.3000 (1.7670)	0.1331
Iatrogenic	7.2360 (1.4122)	7.1020 (0.7071)	6.5000 (2.0213)	0.7615
Idiopathic	6.6667 (2.3484)	5.5833 (1.4434)	5.9167 (2.3533)	0.4430
Inflammatory	7.0000 (2.0000)	7.3333 (1.5275)	6.6667 (1.5275)	1.0000
Traumatic	7.3333 (0.5774)	6.6667 (1.5275)	6.3333 (0.5774)	0.6867

Erectile Functions: In BXO group, the mean Pre-operative (Mean±S.D.) of patients was 9.6569±2.3250, at 3 months post-op 9.3232±2.1705 and at 6 months post-op 9.1243±2.0248, comparison between BXO group with scores was statistically significant (p = 0.0364). In Iatrogenic group, the mean Pre-operative (Mean±S.D.) of patients was 9.3296±1.3122, at 3 months post-op 8.2369±1.4136 and at 6 months post-op 8.1026±.6981, comparison between Iatrogenic with scores was not statistically significant (p = 0.9991). In Idiopathic group, the mean Pre-operative (Mean±S.D.) of patients was 10.000±1.5954, at 3 months post-op 9.000±1.8091 and at 6 months post-op 9.0000±2.3355, the comparison between Idiopathic group with scores was not statistically significant (p = 0.2310). In Inflammatory group, the mean Pre-operative (Mean±S.D.) of patients was 11.000±1.7321, at 3 months post-op 10.333±.5774 and at 6 months post-op 10.333±.5774, comparison between Inflammatory group with scores was not statistically significant (p = 0.9399). In Traumatic group, the mean Pre-operative (Mean±S.D.) of patients was 9.5223±1.5155, at 3 months post-op 8.3213±2.5066 and at 6 months post-op 8.1259±2.4094 so, the comparison between Traumatic group with scores was not statistically significant (p = 0.5824).

Ejaculatory Functions: In BXO group, the mean Pre-operative (Mean±S.D.) of patients was 5.0000±1.8257, at 3 months post-op 5.5000±2.5495 and at 6 months post-op 5.3000±1.7670, comparison between BXO group with scores was not statistically significant (p = 0.1331). In Iatrogenic group, the mean Pre-operative (Mean±S.D.) of patients was 7.2360±1.4122, at 3 months post-op 7.1020±.7071 and at 6 months post-op 6.5000±2.0213, comparison between Iatrogenic with scores was not statistically significant (p = 0.7615). In Idiopathic group, the mean Pre-

operative (Mean±S.D.) of patients was 6.6667±2.3484, at 3 months post-op 5.5833±1.4434 and at 6 months post-op 5.9167±2.3533, the comparison between Idiopathic group with scores was not statistically significant (p = 0.4430). In Inflammatory group, the mean Pre-operative (Mean±S.D.) of patients was 7.0000±2.0000, at 3 months post-op 7.3333±1.5275 and at 6 months post-op 6.6667±1.5275, comparison between Inflammatory group with scores was not statistically significant (p = 1.0000). In Traumatic group, the mean Pre-operative (Mean±S.D.) of patients was 7.3333±.5774, at 3 months post-op 6.6667±1.5275 and at 6 months post-op 6.3333±0.5774 so, the comparison between Traumatic group with scores was not statistically significant (p = 0.6867).

Stricture Length

Sexual Drive: In <3 cm group, the mean Pre-operative (Mean±S.D.) of patients was 6.2517±1.3484, at 3 months post-op 6.1718±.9816 and at 6 months post-op 6.2517±1.1037, comparison between <3 cm group with scores was not statistically significant (p = 0.6163). In 3 - 6 cm group, the mean Pre-operative (Mean±S.D.) of patients was 5.7400±2.2613, at 3 months post-op 5.8133±1.8007 and at 6 months post-op 5.9067±2.0652, comparison between 3 - 6 cm group with scores was not statistically significant (p = 0.0845). In >6 cm group, the mean Pre-operative (Mean±S.D.) of patients was 5.4186±1.8127, at 3 months post-op 4.5614±1.6183 and at 6 months post-op 5.2757±1.7043, though the comparison between >6 cm group with scores was not statistically significant (p = 0.3883) (Table 6).

Erectile Functions: In <3 cm group, the mean Pre-operative (Mean±S.D.) of patients was 8.4345±2.0671, at 3 months post-op 8.2370±1.4894 and at 6 months post-op 8.0991±1.1192, comparison between <3 cm

Table 6: Comparison between Stricture Length Groups with Sexual Function Scores at Pre-operative, 3 and 6 months Post-op

	Score Mean (SD)			
Stricture Length	Pre-operative	At 3 months post-op	At 6 months post-op	p-value
Sexual Drive				
<3 cm	6.2517 (1.3484)	6.1718 (0.9816)	6.2517 (1.1037)	0.6163
3-6 cm	5.7400 (2.2613)	5.8133 (1.8007)	5.9067 (2.0652)	0.0845
>6 cm	5.4186 (1.8127)	4.5614 (1.6183)	5.2757 (1.7043)	0.3883
Erectile Functions				
<3 cm	8.4345 (2.0671)	8.2370 (1.4894)	8.0991 (1.1192)	0.5222
3-6 cm	9.4267 (2.6097)	8.6767 (2.6742)	8.2400 (2.3012)	0.8973
>6 cm	9.2757 (1.2536)	8.7043 (1.6036)	8.6086 (1.2973)	0.3560
Ejaculatory Functions				
<3 cm	6.2627 (2.3277)	6.0809 (1.4460)	5.7073 (1.5551)	0.1051
3-6 cm	6.6767 (2.0597)	5.4900 (1.6787)	5.7400 (2.4909)	0.7591
>6 cm	4.5614 (1.3973)	5.7043 (2.9277)	5.7043 (1.6036)	0.9892

Table 7: Comparison between Stricture Location with Sexual Function Scores at Pre-operative, 3 and 6 months

	Score Mean (SD)			
Stricture Location	Pre-operative	At 3 months post-op	At 6 months post-op	p-value
Sexual Drive				
Bulbar	6.0000 (1.9640)	6.0667 (1.4376)	6.2000 (1.4243)	0.6876
Penile	5.2000 (1.6432)	5.8000 (1.0954)	5.8000 (1.9235)	0.2583
Peno-bulbar	6.0000 (1.8257)	5.0000 (1.8856)	5.5000 (1.9579)	0.5996
Erectile Functions				
Bulbar	9.2000 (1.8593)	9.0000 (1.9640)	8.9333 (1.8310)	0.2531
Penile	7.6000 (3.0496)	7.4000 (2.7019)	7.6000 (2.9665)	0.2896
Peno-bulbar	9.5000 (1.9579)	8.9000 (1.5951)	9.1000 (1.8529)	0.3828
Ejaculatory Functions				
Bulbar	6.8000 (2.0771)	5.6667 (1.6330)	5.7333 (2.0862)	0.1208
Penile	4.8000 (2.1679)	5.6000 (1.8166)	5.4000 (2.3022)	0.8984
Peno-bulbar	5.5000 (1.9579)	6.0000 (2.4495)	5.9000 (1.6633)	0.9006

group with scores was not statistically significant ($p = 0.5222$). In 3 - 6 cm group, the mean Pre-operative (Mean \pm S.D.) of patients was 9.4267 ± 2.6097 , at 3 months post-op 8.6767 ± 2.6742 and at 6 months post-op 8.2400 ± 2.3012 , comparison between 3 - 6 cm group with scores was not statistically significant ($p = 0.8973$). In >6 cm group, the mean Pre-operative (Mean \pm S.D.) of patients was 9.2757 ± 1.2536 , at 3 months post-op 8.7043 ± 1.6036 and at 6 months post-op 8.6086 ± 1.2973 , though the comparison between >6 cm group with scores was not statistically significant ($p = 0.3560$).

Ejaculatory Functions: In <3 cm group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.2627 ± 2.3277 , at 3 months post-op 6.0809 ± 1.4460 and at 6 months post-op 5.7073 ± 1.5551 , comparison between <3 cm group with scores was not statistically significant ($p = 0.1051$). In 3 - 6 cm group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.6767 ± 2.0597 , at 3 months post-op 5.4900 ± 1.6787 and at 6 months post-op 5.7400 ± 2.4909 , comparison between 3 - 6 cm group with scores was not statistically significant ($p = 0.7591$). In >6 cm group, the mean Pre-operative (Mean \pm S.D.) of patients was 4.5614 ± 1.3973 , at 3 months post-op 5.7043 ± 2.9277 and at 6 months post-op 5.7043 ± 1.6036 , though the comparison between >6 cm group with scores was not statistically significant ($p = 0.9892$).

Stricture Location

Sexual Drive: In Bulbar group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.0000 ± 1.9640 , at 3 months post-op 6.0667 ± 1.4376 and at 6 months post-op 6.2000 ± 1.4243 , comparison between Bulbar group with scores was not statistically significant ($p = 0.6876$). In Penile group, the mean Pre-operative (Mean \pm S.D.) of patients was 5.2000 ± 1.6432 , at 3 months post-op 5.8000 ± 1.0954 and at 6 months post-op 5.8000 ± 1.9235 , comparison between Penile group with scores was not statistically significant ($p = 0.2583$). In Peno-bulbar group, the mean Pre-operative (Mean \pm S.D.) of patients was 6.0000 ± 1.8257 , at 3 months post-op 5.0000 ± 1.8856 and at 6 months post-op 5.5000 ± 1.9579 , though the comparison between Peno-bulbar group with scores was not statistically significant ($p = 0.5996$) (Table 7).

Erectile Functions: In Bulbar group, the mean Pre-operative (Mean \pm S.D.) of patients was 9.2000 ± 1.8593 , at 3 months post-op 9.0000 ± 1.9640 and at 6 months post-op 8.9333 ± 1.8310 , comparison between Bulbar group with scores was not statistically significant ($p = 0.2531$). In Penile group, the mean Pre-operative (Mean \pm S.D.) of patients was 7.6000 ± 3.0496 , at 3 months post-op 7.4000 ± 2.7019 and at 6 months post-op 7.6000 ± 2.9665 , comparison between Penile group with scores was not statistically significant ($p = 0.2896$). In Peno-bulbar group, the mean Pre-operative

Table 8: Comparison between Operative Procedure with Sexual Function Scores at Pre-operative, 3 and 6 months post-op

	Score Mean (SD)			
Operative Procedure	Pre-operative	At 3 months post-op	At 6 months post-op	p-value
Sexual Drive				
Anastamotic Urethroplasty	6.2308(1.7394)	6.1538(1.1435)	6.1538(1.4051)	0.5267
BMG Urethroplasty	6.0000(2.0548)	5.6000(1.8974)	5.7000(1.7670)	0.9978
Johnson's Staged Urethroplasty	5.2000(1.9235)	4.2000(1.4832)	5.2000(2.2804)	0.5550
Skin Flap Urethroplasty	4.5000 (0.7071)	6.5000(0.7071)	7.0000(1.4142)	0.7931
Erectile Functions				
Anastamotic Urethroplasty	9.4593(1.5392)	8.9231(2.0191)	8.7692(1.8777)	0.9944
BMG Urethroplasty	10.2000(1.9889)	9.3000(1.4181)	9.6000(2.0656)	0.0856
Johnson's Staged Urethroplasty	8.4000 (2.8810)	7.4000(2.8810)	8.2000(1.9235)	0.2793
Skin Flap Urethroplasty	6.5000 (2.1213)	7.5000 (0.7071)	6.0000(1.4142)	0.1221
Ejaculatory Functions				
Anastamotic Urethroplasty	7.0000 (1.9149)	5.9231(1.3821)	5.8462(1.5191)	0.5136
BMG Urethroplasty	5.4000 (2.4585)	5.6000(2.1705)	5.5000(2.4608)	0.0681
Johnson's Staged Urethroplasty	4.4000 (0.8944)	5.2000(2.8636)	5.4000(2.3022)	0.7168
Skin Flap Urethroplasty	7.0000 (0.0000)	7.0000(1.4142)	7.0000 (0.0000)	0.7717

(Mean±S.D.) of patients was 9.5000±1.9579, at 3 months post-op 8.9000±1.5951 and at 6 months post-op 9.1000±1.8529, though the comparison between Peno-bulbar group with scores was not statistically significant ($p = 0.3828$).

Ejaculatory Functions: In Bulbar group, the mean Pre-operative (Mean±S.D.) of patients was 6.8000±2.0771, at 3 months post-op 5.6667±1.6330 and at 6 months post-op 5.7333±2.0862, comparison between Bulbar group with scores was not statistically significant ($p = 0.1208$). In Penile group, the mean Pre-operative (Mean±S.D.) of patients was 4.8000±2.1679, at 3 months post-op 5.6000±1.8166 and at 6 months post-op 5.4000±2.3022, comparison between Penile group with scores was not statistically significant ($p = 0.8984$). In Peno-bulbar group, the mean Pre-operative (Mean±S.D.) of patients was 5.5000±1.9579, at 3 months post-op 6.0000±2.4495 and at 6 months post-op 5.9000±1.6633, though the comparison between Peno-bulbar group with scores was not statistically significant ($p = 0.9006$).

Operative Procedure

Sexual Drive: In Anastamotic Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 6.2308±1.7394, at 3 months post-op 6.1538±1.1435 and at 6 months post-op 6.1538±1.4051, comparison between Anastamotic Urethroplasty group with scores was not statistically significant ($p = 0.5267$). In BMG Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 6.0000±2.0548, at 3 months post-op 5.6000±1.8974 and at 6 months post-op 5.7000±1.7670, comparison between BMG Urethroplasty group with scores was not statistically significant ($p = 0.9978$). In Johnson's Staged Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 5.2000±1.9235, at 3 months post-op 4.2000±1.4832 and at 6 months post-

op 5.2000±2.2804, comparison between Johnson's Staged Urethroplasty group with scores was not statistically significant ($p = 0.5550$). In Skin Flap Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 4.5000±.7071, at 3 months post-op 6.5000±.7071 and at 6 months post-op 7.0000±1.4142, so the comparison between Skin Flap Urethroplasty group with scores was not statistically significant ($p = 0.7931$) (Table 8).

Erectile Functions: In Anastamotic Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 9.4593±1.5392, at 3 months post-op 8.9231±2.0191 and at 6 months post-op 8.7692±1.8777, comparison between Anastamotic Urethroplasty group with scores was not statistically significant ($p = 0.9944$). In BMG Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 10.2000±1.9889, at 3 months post-op 9.3000±1.4181 and at 6 months post-op 9.6000±2.0656, comparison between BMG Urethroplasty group with scores was not statistically significant ($p = 0.0856$). In Johnson's Staged Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 8.4000±2.8810, at 3 months post-op 7.4000±2.8810 and at 6 months post-op 8.2000±1.9235, comparison between Johnson's Staged Urethroplasty group with scores was not statistically significant ($p = 0.2793$). In Skin Flap Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 6.5000±2.1213, at 3 months post-op 7.5000±.7071 and at 6 months post-op 6.0000±1.4142, so the comparison between Skin Flap Urethroplasty group with scores was not statistically significant ($p = 0.1221$).

Ejaculatory Functions: In Anastamotic Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 7.0000±1.9149, at 3 months post-op 5.9231±1.3821 and at 6 months post-op

5.8462±1.5191, comparison between Anastamotic Urethroplasty group with scores was not statistically significant ($p = 0.5136$). In BMG Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 5.4000±2.4585, at 3 months post-op 5.6000±2.1705 and at 6 months post-op 5.5000±2.4608, comparison between BMG Urethroplasty group with scores was not statistically significant ($p = 0.0681$). In Johnson's Staged Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 4.4000±.8944, at 3 months post-op 5.2000±2.8636 and at 6 months post-op 5.4000±2.3022, comparison between Johnson's Staged Urethroplasty group with scores was not statistically significant ($p = 0.7168$). In Skin Flap Urethroplasty group, the mean Pre-operative (Mean±S.D.) of patients was 7.0000±.0000, at 3 months post-op 7.0000±1.4142 and at 6 months post-op 7.0000±.0000, so the comparison between Skin Flap Urethroplasty group with scores was not statistically significant ($p = 0.7717$).

The present study was a Prospective Study. This Study was conducted 24 months at Department of urology, R.G Kar Government Medical College and Hospital, Kolkata. Total 30 patients were included in this study.

Bhalaguriyyan *et al.*^[4] Indicated that phased urethroplasty is employed for the repair of the urethra in cases of pan-anterior urethral stricture illness. The statistical analysis employed the Student t-test for continuous variables and the Chi-square test for discrete variables. The study comprised a total of 37 patients. The average age of the patients was 53.4 years. The efficacy of the surgical procedure, as evaluated based on the voiding pattern, was determined to be 75.6%. The IPSS score shown a noteworthy increase in older patients aged 55 years ($p < 0.001$), as well as in the therapy failure group ($p < 0.001$).

In our study, out of 30 patients, most of the patients were [21 (70.0%)] 30-60 years of age and mean age of our patients are 40.7 years.

Soave *et al.*^[5] The study was to assess the efficacy of buccal mucosa graft urethroplasty (BMGU) in treating urethral stricture disease, specifically by analyzing the success rate, morbidity and impact on quality of life (QOL). A total of 83 patients, accounting for 51.9% of the total, successfully completed the questionnaire. Among the patients, 69 (83.1%) had strictures in the bulbar region, 13 (15.7%) had strictures in the penile region and one patient (1.2%) had strictures in the panurethral region. The stricture had a median length of 5 cm, with a range of 1-16 cm. In our study, the mean Stricture Length (cms) (Mean±S.D.) of patients was 5.8533±3.9389. Out of

30 patients, 15 (50.0%) patients had Bulbar disease, 5 (16.7%) patients had Penile disease and 10 (33.3%) patients had Peno-bulbar disease.

Sachin *et al.*^[6] Discovered that the occurrence of erectile dysfunction (ED) from scratch is a recognized consequence following urethroplasty. Among the 40 patients with anterior stricture, 22 patients (55.0%) underwent substitution urethroplasty (SU) and 18 patients (45.0%) underwent end-to-end anastomotic urethroplasty (EEAU). Their average IIEF-5 score was 24.15±0.8 before the surgery, 20.10±4.2 at 3 months ($p < 0.001$), 22.70±2.3 at 6 months ($p = 0.0012$) and 23.70±1.7 at 12 months ($p = 0.03$). This indicates a gradual improvement in erectile function over time. In our study, overall mean Sexual Drive at Pre-operative, at 3 month and at 6 month postoperatively was 5.8667±1.8333, 5.6667±1.5830 and 5.9000±1.6682, respectively. However the change of mean sexual drive was not statistically significant ($p = 0.9949$).

In our study, mean Erectile Functions at pre-operative, at 3 month post-op and at 6 months post-op was 9.0333±2.1413, 8.7000±2.0026 and 8.7667±2.0457. Though there is slight recovery of erectile function with time the results are not statistically significant ($p = 0.9996$).

In our study, mean Ejaculatory Functions at pre-operative, at 3 months post-op and at 6 month post-op was 6.0333±2.1413, 5.7667±1.9061 and 5.9832±1.9286. Though there is improvement of ejaculatory function over time, the results are not statistically significant ($p = 0.99161$).

Singh *et al.*^[7] Assessed the sexual function of 150 males who underwent 168 surgeries to reconstruct the urethra. Utilized the O'Leary Brief Male Sexual Function Inventory to measure sexual function before and after the surgeries. The duration of observation for the study participants ranged from 4 to 72 months, with a median follow-up of 33 months. Men in the age categories of 20-29, 30-39, 40-49, 50-59 and 60-69 did not experience any notable alterations in sexual desire and erectile function ratings after the surgery. Overall, there was a substantial enhancement in ejaculatory function scores following the surgical procedure. The enhancement was particularly strong among males within the age groups of 20-29, 30-39 and 40-49.

In our study mean score for sexual drive increased in Idiopathic and Traumatic group postoperatively at 6 month and decreased in BXO, Iatrogenic and inflammatory group, however the results were not statistically significant.

In our study there was overall decrease in erectile function in all etiologic groups however decreased post-op erectile function only in BXO group was

statistically significant. Usually longer length of Stricture associated with BXO may be the reason behind this statistically significant result.

In our study ejaculatory function improved at 3 month in BXO and inflammatory group, however at 6 month there is decreased ejaculatory function in all etiologic groups including BXO and inflammatory. None of these results were statistically significant.

In the above study by Eltaher *et al.*^[8] found that in regard to the incidence of ED according to the length of urethral stricture, the impact on erectile function after urethroplasty was greater in shorter urethral stricture segment (1.9 ± 0.2 cm) than in longer urethral stricture segment (3.1 ± 1.3 cm) with no statistically significant difference between the two groups ($p = 0.514$).

Vetterlein *et al.*^[9] Analyzed the relationship between the recurrence of strictures, sexual function and satisfaction with therapy in males who underwent a one-stage buccal mucosal graft urethroplasty for anterior urethral strictures from 2009 to 2016. The study utilized bivariate analyses, Kaplan-Meier estimates and qualitative and quantitative analyses through uni- and multivariable regression to assess the relationship between sexual function, functional recurrence and treatment satisfaction. Out of a total of 534 individuals who had bulbar (82%), penobulbar (11%) and penile strictures (7.3%), a significant majority of 451 individuals (84%) expressed satisfaction with the surgical procedure. There were no significant variations in the location of the stricture, previous therapy received, length of the graft, or surgical method used between satisfied and unsatisfied patients (all $p \geq 0.2$).

In our study sexual drive increased in bulbar and penile stricture group, however sexual drive of patients with Peno-bulbar stricture disease decreased postoperatively though the results were not statistically significant.

Erectile function decreased postoperatively in all groups however the decrease of mean score for erectile function was most robust in Peno-bulbar disease group. These results were not statistically significant.

In our study ejaculatory function improved postoperatively in patients with penile and Peno-bulbar stricture, however the ejaculatory function decreased in patients with bulbar urethral stricture and none of these results were statistically significant.

Dogra *et al.*^[10] Assessed the occurrence and likelihood of regaining erectile function following various one-stage urethroplasty procedures for anterior urethral stricture illness. A total of seventy-eight male patients who underwent single-stage anterior urethroplasty between January 1, 2008 and

March 31, 2010 were tracked in a prospective manner. The patients were categorized into three groups: group 1 ($n = 25$) underwent penile substitution urethroplasty, group 2 ($n = 32$) underwent primary excision anastomotic bulbar urethroplasty and group 3 ($n = 21$) underwent bulbar substitution urethroplasty. The initial IIEF score before surgery was 24.60 ± 2.365 and this score was consistent across all groups. 15 individuals, accounting for 20% of the total, were diagnosed with erectile dysfunction (ED). Among these patients, 4 out of 25 (16%) were from group 1, 9 out of 32 (28%) were from group 2 and 2 out of 21 (10%) were from group 3. The average postoperative IIEF score was 22.54 ± 4.823 . Overall, there was no statistically significant decline observed among the groups ($p = 0.502$).

In our study there was statistically insignificant increase in sexual drive postoperatively in patients undergoing skin Flap Urethroplasty. All other groups showed statistically insignificant decrease in sexual drive.

Erectile function decreased in all intervention groups however the results were not statistically significant.

On the contrary ejaculatory function improved in all intervention group except in patients group undergoing anastomotic urethroplasty which shows decreased ejaculatory function postoperatively. However, none of these results were statistically significant.

In our study 3(10%) patients complained of "quite a bit" and 4(13.3%) patients complained of "somewhat" angle of penis during erection postoperatively. However these changes were not statistically significant ($p = 0.61$).

Four patients (13.3%) in our study complained of "quite a bit" and five patients (16.7%) complained of "somewhat" change in length of penis postoperatively. However the results were not statistically significant ($p = 0.71$).

There was statistically insignificant change in frequency of sexual intercourse in 14(46.7%) patient's postoperatively.

However, our study showed there was statistically significant ($p = 0.00614$) improvement of general health of patients postoperatively described as "good" by 15(50%), "fair" by 6(20%) and "excellent" by 4(13.3%) patients. Five patients (16.7%) complained of poor overall general health following surgery.

CONCLUSION

There was a little and not statistically significant improvement in sexual drive overall following surgery. However, this improvement was statistically significant

in the 30-60 years age group. Patients aged over 60 had a statistically significant decline in postoperative sexual desire. There were no statistically significant effects on sexual drive observed in any other patient groups based on factors such as the length, location, etiology, or kind of surgery related to the stricture.

We detected a statistically small decline in total erectile performance after surgery, but this decline was statistically significant in individuals with stricture caused by BXO. There were no other etiologic categories or groups related to patient age, length or location of stricture, or surgical treatments that had a statistically significant effect on erectile function.

Our study found that there was no significant decline in ejaculatory function after surgery. Additionally, none of the patient groups, including those based on age, length of stricture, location of stricture, etiology of stricture, or type of surgical intervention, showed any statistically significant impact on ejaculatory function.

An inconsequential enhancement was observed in all three domains with time when comparing the scores at 6 months post-operation with those at 3 months post-operation.

Patients reported a notable enhancement in their overall general health following the surgery.

REFERENCES

1. Blaschko, S.D., M.T. Sanford, N.M. Cinman, J.W. Mcaninch and B.N. Breyer, 2013. *De novo* erectile dysfunction after anterior urethroplasty: A systematic review and meta analysis. *BJU Int.*, 112: 655-663.
2. Haines, T. and K.F. Rourke, 2016. The effect of urethral transection on erectile function after anterior urethroplasty. *World J. Urol.*, 35: 839-845.
3. Mundy, A.R., 1993. Results and complications of urethroplasty and its future. *Br. J. Urology*, 71: 322-325.
4. Bhalaguruviyyan, A. and P.P. Murugan, 2019. Evaluation of health-related quality of life, voiding pattern and sexual function in patients with status stage 1 urethroplasty for pan anterior urethral stricture disease. *J. Clin. Diagn. Res.*, Vol. 13, No. 9. 10.7860/jcdr/2019/42091.13134.
5. Soave, A., L. Kluth, R. Dahlem, A. Rohwer and M. Rink *et al.*, 2019. Outcome of buccal mucosa graft urethroplasty: A detailed analysis of success, morbidity and quality of life in a contemporary patient cohort at a referral center. *BMC Urol.*, 19: 1-6.
6. Sachin, D., M.C. Siddaiah, K.V. Senguttuvan, R.C. Sidaramappa and K. Ramaiah, 2017. Incidence of *De novo* erectile dysfunction after urethroplasty: A prospective observational study. *World J. Men's Health*, 35: 94-99.
7. Kapoor, R., U. Singh, R. Maheshwari, V. Kumar and A. Srivastava, 2010. Impact on sexual function after reconstructive surgery for anterior urethral stricture disease. *Indian J. Urol.*, 26: 188-192.
8. Eltaher, A.M., A.A. Kurkar, A.K. Hassab-Elnaby, A.M. Ali, 2020. Impact of urethroplasty on male sexual function. *J. Curr. Med. Res. Pract.*, Vol. 5, No. 1.
9. Vetterlein, M.W., A. Gödde, V. Zumstein, P. Gild and P. Marks *et al.*, 2021. Exploring the intersection of functional recurrence, patient-reported sexual function and treatment satisfaction after anterior buccal mucosal graft urethroplasty. *World J. Urol.*, 39: 3533-3539.
10. Dogra, P.N., A.K. Saini and A. Seth, 2011. Erectile dysfunction after anterior urethroplasty: A prospective analysis of incidence and probability of recovery—single-center experience. *Urology*, 78: 78-81.