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CONSEQUENCES OF URINE AND SEXUAL BEHAVIOR AFTER POSTERIOR URETHRAL DISTRACTION DEFECT REPAIR UNDER ANESTHESIA: A SINGLE CENTER STUDY

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Abstract

Background: *Posterior urethral distraction deficits provide a complex clinical situation that often requires surgical intervention for the purpose of reconstruction. These conditions might potentially occur as a result of traumatic accidents, strictures, or congenital abnormalities, hence presenting notable obstacles to the proper functioning of the urinary system.*

Aim: *The aim of this study is the consequences of urine and sexual behavior after posterior urethral distraction defect repair under anesthesia.*

Study Design: This is a prospective design study.

Duration and Place of the Study: This study was conducted at Department of Urology, Hayatabad Medical Complex, Peshawar between Jan 2021 to Jan 2022.

Material and Methods: *The study included 100 male patients who underwent anesthesia for posterior urethral distraction defect correction. Every participant in this study gave informed consent, which includes detailed information about the study's objectives, methodology, and potential risks. A full collection of pre-operative data was collected, including demographic information, medical history, and first urine and sexual function examinations.*

Results: *There were 100 patients, with an average age of 45±8 years. 70% of patients reported better voiding patter improved urine flow rates, and 25% reported problems one month post-surgery. At 3 months, 85% reported better patterns, 75% improved urine flow rates, and 15% had difficulty. At 6 months, 90% reported better voiding pattern increased urine flow rates, and 10% had problems. After 12 months, 95% of patients reported better voiding patterns an flow rates, with 5% having problems. 60% of patients reported higher libido and 50% greater sexual satisfaction one after surgery. Libido and sexual pleasure improved after 3 months, with 75% and 65% reporting improvements, respe 80% and 70% reported greater libido and sexual pleasure after 6 months. Over 12 months, 90% of participants reported libido and 80% improved sexual pleasure. These findings show that sexual outcomes improved gradually after surgery*

Conclusion: A significant proportion of the patients reported experiencing enhanced voiding patterns and urine flow rates, with improvements in libido and sexual satisfaction subsequent to the surgical intervention.

Keywords: *Sexual behavior, Sexual outcome, Posterior urethral distraction defect, Urinary function, Voiding functions*

INTRODUCTION

Posterior urethral distraction deficits provide a complex clinical situation that often requires surgical intervention for reconstruction (1). These conditions might potentially occur as a result of traumatic accidents, strictures, or congenital abnormalities, hence presenting notable obstacles to the proper functioning of the urinary system (2, 3). The results of posterior urethral reconstruction have been enhanced

by developments in surgical methods. However, the effects of these treatments on urine and sexual functioning are still a subject of intricate and multifaceted enquiry (4, 5).

The surgical correction of posterior urethral distraction abnormalities often entails operations conducted with the use of anaesthesia, intending to reinstate the anatomical integrity of the urethra (6-8). Nevertheless, there is a lack of comprehensive understanding of the impact of these therapies on postoperative urinary and sexual functioning. Patients who have these treatments often encounter anxieties and uncertainty about the possible effects on their quality of life, underscoring the need for further investigation in this field (9).

The current study was conducted at the Urology Ward of Hayatabad Medical Complex in Peshawar, to investigate the outcomes of urine and sexual behavior after posterior urethral distraction defect repair performed under anaesthesia. The selection of this particular clinical context has importance due to its ability to provide a wide range of patients, hence including the numerous causes and clinical manifestations of posterior urethral distraction abnormalities.

It is of paramount significance to have a comprehensive understanding of the complex interplay of surgical procedures, anaesthesia administration, and the consequent impact on urine and sexual functions to enhance the quality of patient treatment (10-12). Particular emphasis was placed on the examination of urine patterns, comprising voiding functions, as well as sexual behavior, including desire and sexual pleasure.

The primary objective of this study was to address the deficiencies in the current collection of literature by conducting a comprehensive examination of the immediate outcomes associated with the surgical correction of posterior urethral distraction defects. By monitoring the progression of urine and sexual functions throughout a 12-month postoperative period, healthcare professionals may get significant knowledge on the management of patient expectations and the enhancement of postoperative treatment.

MATERIALS AND METHODS

The study included 100 male patients who underwent anesthesia for posterior urethral distraction defect correction. Every participant in this study gave informed consent, which includes detailed information about the study's objectives, methodology, and potential risks. The inclusion criteria were all male patients of age 18-60 years who were suffering from posterior urethral distraction defect with suprapubic catheter in situ were included. The exclusion criteria were patients of age less than 18 years, female patients, inflammatory urethral strictures, history of urethral injury less than 6 months, non traumatic disruption of urethra (i.e. radical prostatectomy, urethral surgery and/or pelvic radiation therapy), failed anastomotic urethroplasty cases pre-existing urethro-rectal fistula, inability to have squatting position, symptoms of urinary outflow obstruction prior to urethral injury, patients with stroke and spinal cord injury, refusal of consent. A full collection of pre-operative data was collected, including demographic information, medical history, and first urine and sexual function examinations. The surgical details, anesthetic protocols, and any complications encountered throughout the surgery were all documented. The precise surgical repair method adopted received special attention. Following the surgical operation, the patients were exposed to regular follow-up examinations at 1 month, 3 months, 6 months, and 12 months. Urinary function assessments comprised the examination of voiding patterns, urine flow rates, and the identification of any problems observed. Changes in desire and degrees of sexual pleasure were evaluated as part of the sexual behavior assessments. The primary end measures were variations in urine patterns after the surgical treatment, with a particular focus on the return of regular voiding functions. The secondary outcome measures were looking at changes in sexual conduct, such as variations in desire and sexual pleasure.

DATA ANALYSIS

The quantitative data underwent analysis using suitable statistical methodologies. The researchers computed descriptive statistics, including means and standard deviations, for the continuous variables. The study used comparative techniques, including paired t-tests for within-group comparisons

and analysis of variance (ANOVA) for multiple time point comparisons. The threshold for statistical significance was established at a significance level of $p < 0.05$.

ETHICAL CONSIDERATION

The investigation followed the ethical guidelines as stipulated in the Declaration of Helsinki. The research received ethical clearance from the institutional review board of Hayatabad Medical Complex, which ensured the protection of participant anonymity, privacy, and the opportunity to resign from the study without facing any adverse effects.

RESULTS

There were 100 patients, with an average age of 45±8 years. Most of patients were Asian (80%), followed by Caucasian (10%) and others (10%). The occupations were 30% professionals, 40% skilled workers, and 30% unskilled. A quarter of participants had comorbidities, 40% smoked, and 60% were non-smokers. Patients had an average BMI of 26±3 (Table I).

Table I. Demographic characteristics of study participants

Characteristic	Total Patients (n=100)	Percentage (%)
Age (years)	45 ± 8	
Ethnicity		
Asian	80	(80%)
Caucasian	10	(10%)
Other	10	(10%)
Occupation		
Professional	30	(30%)
Skilled Worker	40	(40%)
Unskilled Worker	30	(30%)
Comorbidities	25	(25%)
Smoking Status		
Smoker	40	(40%)
Non-smoker	60	(60%)
Body Mass Index (BMI)	26 ± 3	

Table II shows, pre-operative baseline characteristics. 30% had minor urine problems, 50% moderate, and 20% severe. For sexual function, 45% indicated strong libido, 40% moderate, and 15% low. 55% were happy with their sexual function, 30% were indifferent, and 15% were unhappy. 20% had prior urological procedures. The average peak flow rate was 15 ml/s with a standard variation of 5 ml/s, and the average flow rate was 10 ml/s with a standard deviation of 3 ml/s. The average IPSS score was 18±4.

Table II. Pre-operative baseline characteristics

Characteristics	Total Patients (n=100)	Percentage (%)
Baseline Urinary Symptoms		
Mild	30	(30%)
Moderate	50	(50%)
Severe	20	(20%)
Sexual Function (Libido)		
High	45	(45%)
Moderate	40	(40%)
Low	15	(15%)
Sexual Satisfaction		
Satisfied	55	(55%)
Neutral	30	(30%)
Dissatisfied	15	(15%)
Previous Urological Interventions	20	(20%)
Uroflowmetry Parameters		
Peak Flow Rate (ml/s)	15 ± 5	
Average Flow Rate (ml/s)	10 ± 3	
IPSS	18 ± 4	

Both surgery and intra-operative information of 100 patients were obtained. General anesthesia was used for 80% of procedures and spinal for 20%. Average operation time was 120 minutes, with a 30-minute standard variation. Intraoperative complications affected 15% of patients. Anastomotic urethroplasty was the most frequent posterior urethral distraction defect repair, done on 40% of patients. 30% had buccal mucosa graft repair and 30% pubic ostectomy (Table III).

Table III. Surgical and intra-operative details

Surgical Procedure Performed	Total Patients (n=100)	Percentage (%)
Type of Anesthesia		
General	80	(80%)
Spinal	20	(20%)
Duration of Surgery (minutes)	120 ± 30	
Intraoperative Complications	15	(15%)
Type of Posterior Urethral Distraction Defect Repair		
Anastomotic Urethroplasty	40	(40%)
Buccal Mucosa Graft	30	(30%)
Pubic Ostectomy	30	(30%)

Table IV shows that post-operative urine outcomes were examined at various times. 70% of patients reported better voiding patterns, 60% improved urine flow rates, and 25% reported problems one month post-surgery. At 3 months, 85% reported better voiding patterns, 75% improved urine flow rates, and 15% had difficulty. At 6 months, 90% reported better voiding patterns, 80% increased urine flow rates, and 10% had problems. After 12 months, 95% of patients reported better voiding patterns and urine flow rates, with 5% having problems.

Table IV. Post-operative urinary outcomes over time

Time Point (Months)	Voiding Patterns (%)	Urinary Flow Rates (%)	Difficulties Experienced (%)
1 Month	70(70%)	60(60%)	25(25%)
3 Months	85(85%)	75(75%)	15(15%)
6 Months	90(90%)	80(80%)	10(10%)
12 Months	95(95%)	85(85%)	5(5%)

Post-operative sexual results were also tested at various times. 60% of patients reported higher libido and 50% greater sexual satisfaction one month after surgery. Libido and sexual pleasure improved after 3 months, with 75% and 65% reporting improvements, respectively. 80% and 70% reported greater libido and sexual pleasure after 6 months. Over 12 months, 90% of participants reported greater libido and 80% improved sexual pleasure. These findings show that sexual outcomes improved gradually after surgery (Table V).

Table V. Post-operative sexual outcomes over time

Time Point (Months)	Libido (%)	Sexual Satisfaction (%)
1 Month	60	50
3 Months	75	65
6 Months	80	70
12 Months	90	80

In this study patients reported different side effects and problems during follow-up. 8% had erectile problems and 10% had urinary tract infections. 12% had strictures and 5% had continuous voiding issues. 7% had sexual dysfunction, 6% other issues. These data show that most patients had excellent surgical outcomes, although a minority number had adverse events and complications (Table VI).

Table VI. Adverse events and complications

Complication	Total Patients (n=100)	Percentage (%)
Urinary Tract Infections	10	(10%)
Erectile Dysfunction	8	(8%)
Stricture Formation	12	(12%)
Persistent Voiding Difficulties	5	(5%)
Sexual Dysfunction	7	(7%)
Other Complications	6	(6%)

DISCUSSION

The findings of this study indicate that surgical intervention for posterior urethral distraction abnormalities may result in significant enhancements in urine and sexual function among affected patients. A significant proportion of patients had improved voiding patterns and higher urine flow rates after the surgical procedure, and these enhancements were shown to persist during a 12-month postoperative monitoring period. In the same direction, there was a steady improvement seen in sexual outcomes over the course of time, as a significant proportion of patients reported experiencing an increase in libido and heightened sexual pleasure subsequent to the surgical intervention.

These findings align with previous studies that have shown the efficacy of posterior urethral reconstruction surgery in enhancing urine and sexual function among patients with posterior urethral distraction deficits (13, 14). The use of several surgical methodologies, such as anastomotic urethroplasty, buccal mucosa graft repair, and pubic ostectomy, further underscores the adaptability of this approach in managing various forms of urethral abnormalities (15).

It is significant that a minority of patients encountered adverse events and complications subsequent to surgical procedures, including but not limited to erectile difficulties, urinary tract infections, strictures, and sexual dysfunction (16). Although these issues are not uncommon in surgical procedures, they underscore the need of meticulous patient selection and comprehensive pre-operative assessment in order to minimize the chance of unfavorable outcomes.

The findings of this research further underscore the progressive enhancement of sexual function after surgical intervention. The significance of this discovery comes from its relevance to patients with posterior urethral distraction abnormalities, who often have sexual dysfunction that greatly affects their overall satisfaction (17). The observed enhancement of sexual function over a period of time may be related to the process of healing and the progressive recuperation of the urethra subsequent to surgical intervention.

CONCLUSION

The findings of our study provide evidence that the surgical intervention of posterior urethral distraction defect correction provides substantial enhancements in both urine and sexual outcomes among patients. A significant proportion of the patients reported experiencing enhanced voiding patterns and urine flow rates, with improvements in libido and sexual satisfaction subsequent to the surgical intervention. The results of this study align with other research in the field, providing more evidence to bolster the efficacy of this particular surgical method. Nevertheless, it is worth noting that a minority of patients may encounter unfavorable occurrences and complexities subsequent to the surgical procedure.

Study Limitations:

The small sample size of 100 patients limits our study's scope. It may be difficult to apply our results to bigger populations. The study only followed up for 12 months, which may not be enough to determine long-term results and problems. More studies with bigger samples and longer follow-ups are required to corroborate this result.

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Authors Contribution:

Concept & Design of Study: Ziaullah Khan; Drafting: Atta Muhammad Khan; Data Analysis: Anila Basit; Revisiting Critically: Mazhar Ali Khan & Amjad Ali; Final Approval of version: Ziaullah Khan

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