

# Treatment Outcomes of Short Segment Urethral Strictures after Urethral Dilatation

Treatment of Urethral Strictures after Dilatation

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## ABSTRACT

**Objective:** To determine the treatment outcomes of simple dilatation procedure for the management of short segment urethral strictures.

**Study Design:** Retrospective/observational study

**Place and Duration of Study:** This study was conducted at the Saidu Teaching Hospital Swat and PIMS Hospital Islamabad during from June 2019 to November 2019.

**Materials and Methods:** Total 104 patients presented with simple short segment urethral strictures were included. Patients detailed demographic including age, sex, clinical presentation and etiology of strictures were recorded after written consent. All patients receive simple urethral dilatation with antibiotics under local anesthesia. Pre and postoperative maximum flow rate on uroflowmetry and post-void residual urine (PVR) were recorded. Follow-up was taken at 4, 12 weeks and at 1 year. Overall improvement and recurrence rate was examined at final follow-up.

**Results:** The mean age of patients was  $38.52 \pm 11.46$  years. Majority of patients 80 (78.85%) had weak urine stream. 90 (86.54%) patients had iatrogenic strictures and 14 (13.46%) had idiopathic strictures. There is a significant improvement regarding maximum flow rate and PVR at 1, 3 and 6 months postoperatively with p-value 0.0001. At final follow-up, 95 (91.34%) patients showed full improvement. Recurrence found in 9 (8.65%) patients.

**Conclusion:** Simple dilatation under antibiotics cover is safe and effective treatment modality with fewer complications rate.

**Key Words:** Short Segment Urethral Strictures, Urethral Dilatation

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## INTRODUCTION

Urethral strictures are a common urological and complex disorder. There are currently various operations to treat this condition. However, there is the lack of an appropriate technology in the variety of treatment methods<sup>1</sup>. The urethra, in particular the bulbar tract, which is 46.9 percent<sup>2</sup>, mainly includes the urethra in the developing countries. Moreover, the penile urethra represents 30 percent, with the remainder in a blend of both and panurethra. Strictness also varies from site to location<sup>3</sup>.

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The urethral rigidity is unknown anatomy. Outside trauma typically induces partial or complete contact with a urethra which is otherwise intact.

Why stringency in other situations is unclear but, for some reason, a scar tends to arise as a result of changes in the urethral epithelium's structure and function and sub-epithelial spongy tissue that cause fibrotic urethra narrowing<sup>4</sup>. Surgical treatment is increasingly emerging for urethral rigorous disease. There are currently several ways in which the urethra can be repaired and nearly all identical for technical ease, related morbidity and consequence. However, it is not clear which one is the best technique<sup>5</sup>. The most popular treatments for urethral stringency diseases are Internal Urethrotomy and urethral dilatation. Laser urethrotomy, intraluminal stents and urethroplasty are other treatment choices<sup>6</sup>. Initial urethrotomy requires cold knife and laser surgery, the most up-to-date procedure for urethral stricture<sup>7</sup>. However, these techniques are flaws of strict repetition and the need for additional surgery. Therefore, some authors have described temporary expansion following internal urethrotomy in order to prevent stricture recurrence<sup>8</sup>. dilatation is one of the most common models used for patients with urethral surgery; urethral dilatation is less invasive and with limited side effects. A randomized study<sup>9</sup> compared internal dilatation and direct vision urethrotomy

(DVIU) with no difference in healing outcomes between the two modes. However, due to the high recurrence rate, urethral dilation is mostly performed as a palliative manoeuvre and a further urethral reparatory surgery would be needed for the majority of patients<sup>10</sup>. Many past studies have shown simple expansion for short segment urethral strictures to be safe and effective, with significant improvement and a lower rate of complications<sup>11-12</sup>. The present study analyzed the effects of a simple dilatation procedure in the treatment of urethral short-segment strings.

**MATERIALS AND METHODS**

This prospective study was conducted at Saidu Teaching Hospital Swat and PIMS Hospital Islamabad during from June 2019 to November 2019. There were a total of 104 patients with ages 20 to 60 years who had simple urethral strains in the short section. After written consent, the patients received comprehensive demographic details, including age, sex, clinical appearance and stricture etiology. Urethrogram retrograde has been completed. The study ruled out patients with unnecessary strictures, complicated and crumbling strictures.

Simple urethral dilatation with antibiotics under local anaesthesia was performed in all patients. Full uroflowmetry and postoperative residual urine (PVR) flow rate pre and postoperative (Qmax) were recorded. Follow-up was taken at 1, 3 and 6 months. At the final follow-up, overall progress and recurrence rates were examined. SPSS 24.0 was used to analyze the results. Student t'test was applied to compare the urine flow rate. P-value < 0.05 was set as significant.

**RESULTS**

The mean age of patients was 38.52±11.46. The median stricture length was 0.81 cm.

**Table No 1. Demographical details of all the patients**

Characteristics	Frequency No.	%age
<b>Mean Age (years)</b>	38.52±11.46	-
<b>Symptoms</b>		
Weak Urine Flow	80	78.85
Refractory UTI	7	6.73
Interrupted Urine Stream	5	4.81
Painful Micturition	5	4.81
Urinary Incontinence	4	3.85
Urinary Stream Deviation	3	2.88
<b>Types of Strictures</b>		
Iatrogenic	90	86.54
Idiopathic	14	13.46

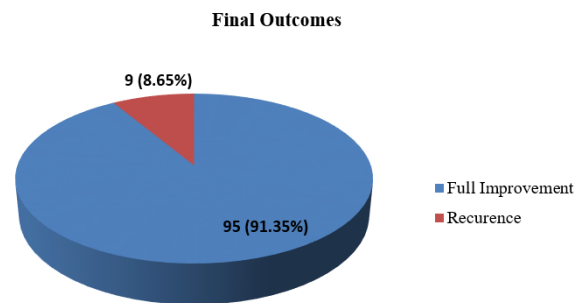
Majority of patients 80 (78.85%) had weak urine stream, 7 (6.73%) patients had refractory urinary tract infection, 5 (4.81%) patients had interrupted urine stream, 5 (4.81%) patients had painful micturition, 4 (3.85%) patients had urinary incontinence and 3

(2.88%) patient had urine stream deviation. 90 (86.54%) patients had iatrogenic strictures and 14 (13.46%) had idiopathic strictures. (Table 1). Preoperatively median maximum flow rate (Q<sub>max</sub>) on uroflowmetry was 5.9 ml/sec. A significant improvement was observed postoperatively at 1, 3 and 6 months with p-value <0.0001. The median post void residual on ultrasonography preoperatively was 70.65ml and a significant decrease in PVR was observed at 1, 3 and 6 months postoperatively with p-value <0.0001. (Table 2).

**Table No 2. Pre and postoperative findings of urine flow on uroflowmetry and PVR**

Variables	Preoperatively	At 1 month	At 3 Months	At 6 Months	P-value
Uroflowmetry ml/sec	5.9	18.2	17.4	16.8	<0.001
PVR (ml)	70.65	22	30.4	30.1	<0.001

At final follow-up, 95 (91.34%) patients showed full improvement. Recurrence found in 9 (8.65%) patients. (figure 1)



**Figure No 1. Findings at final follow-up**

**DISCUSSION**

Urethral stricture in men is one of the common highly morbid malignant disorders. Most surgical procedures were used to treat urethral strings, but due to their ease and lower rates of complications dilatation is one of the most common surgical techniques for short-range urethral strings<sup>13-14</sup>. The purpose of the present study was to determine the effects of simple dilation with the addition of antibiotics in short-specific urethral rigidity patients. In this study, 90.38% of patients had no significant complications completely recovered. Found repetition in 5 patients (9.62%). These findings demonstrated the same efficacy with some previous research in 85 to 95 percent repeat patients 0 to 10 per cent.<sup>15-16</sup>

In our study the mean age of patients was 38.52±11.46. The median stricture length was 0.81 cm. Majority of patients 80 (78.85%) had weak urine stream, 7 (6.73%) patients had refractory urinary tract infection, 5 (4.81%) patients had interrupted urine stream, 5 (4.81%)

patients had painful micturition, 4 (3.85%) patients had urinary incontinence and 3 (2.88%) patient had urine stream deviation. 90 (86.54%) patients had iatrogenic strictures and 14 (13.46%) had idiopathic strictures. These results were comparable to many previous studies<sup>15-17</sup>.

In present study we found significant improvement regarding maximum flow rate and PVR at 1, 3 months and at 6 months postoperatively with p-value <0.001. Preoperatively the median maximum flow rate ( $Q_{max}$ ) on uroflowmetry was 5.9 ml/sec ranges (4 to 15ml/sec) and median post void residual on ultrasonography was 70.65ml (40-190ml). Postoperative ( $Q_{max}$ ) improved to 18.2 at 1 month, 17.4 at 3 months and 16.8 ml/sec at 6 months. These results showed similarity to many of other studies in which patients showed significant improvement regarding maximum urinary flow rate with p-value <0.001.<sup>18-19</sup> In our study we found, post-operative PVR values were 22 (10–60) ml, 30.4 (10–70) ml and 30.1 (10–70ml) at 1, 3 and at 6 months, respectively. The median procedure time was 15.74 (10–25) minutes. These results were similar to several studies in which simple dilation procedure showed postoperatively significant difference regarding post void residual<sup>20-21</sup>.

In our study we found fewer rate of post-operative complications, 1 patients showed bleeding and no patient with wound infection. The overall patients satisfaction rate was 90%. These results were comparable to some other studies.<sup>22-23</sup>

## CONCLUSION

Urethral stricture in men is the one of the malignant and painful disorder with high morbidity rate. Early and accurate diagnosis and better treatment modality helps to reduce the morbidity rate. We concluded that simple dilatation with addition of antibiotics is safe and effective treatment modality with fewer complications rate.

### Author's Contribution:

Concept & Design of Study: Mumtaz Ali Shah

Drafting: Irfan Ahmed, Nizamud Din

Data Analysis: Fazal Elahi, Fazal Akbar, Rashidullah

Revisiting Critically: Mumtaz Ali Shah, Irfan Ahmed

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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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