



AN OBSERVATIONAL STUDY FOR LONG TERM OUTCOMES AND ERECTILE FUNCTION IN PERMANENT PERINEAL URETHROSTOMY FOR ANTERIOR URETHRAL STRICTURES

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ABSTRACT

Introduction: Urethral strictures are better managed by urethroplasty. But in patients of recurrent urethral strictures, it is difficult to decide the better method of management. In recurrent strictures, at some point of time and in some groups of patients, especially elderly, perineal urethrostomy (PU) appears to be the best management. **Aim:** To describe the long term functional outcomes and erectile function in patients who undergone perineal urethrostomy for anterior urethral stricture diseases. **Materials and Methods:** This prospective observational study was done in the department of Urology at Govt. Medical College and Hospital, Kota, Rajasthan, India. This was descriptive study of 50 patients who undergone perineal urethrostomy for anterior urethral stricture disease from January 2022 to July 2024 in our urology department as part of a plan for a staged urethroplasty repair of a complex urethral stricture. Quality of life is calculated using validated questionnaire by PROM-USS. Inclusion criteria are patients, age 40 to 70 years. Exclusion criteria are patients with Pelvic Fracture Urethral Distraction Defects and who has not completed family. **Results:** Most of our patients were in 60-70 years' age group 30/50 i.e. 60%. Most common aetiology of stricture was idiopathic (18) followed by iatrogenic (15), traumatic (9) and post infectious (8). Average length of stricture was more than 6 cm and involving anterior urethra. Patients were followed up for median 12 months. Preoperative IPSS score was 27 +/- 4.5 and postoperative was 9 +/- 5. SHIM scoring preoperative and postoperative were same ~ 21. PROM-USS for LUTS was significantly reduced from median of 19 to 8.5 and QOL from median of 5.5 to 2. Success rate with previous urethrotomy, urethroplasty, multiple treatment and no treatment patients were 15/17(88%), 9/12(75%), 11/14(78%), 7/7(100%) respectively. Most of the patients were satisfied with the procedure. And few of them (3) reported that postejaculatory dysfunction bothering them. In patients in whom second surgery was indicated that is in patients with bladder outlet obstruction the endoscopic procedure was done without any difficulty. **Conclusion:** Permanent PU is an acceptable option for long-segment anterior urethral strictures, especially in elderly patients, with an excellent long-term outcome. A majority of patients also maintain a satisfactory erectile function.

KEYWORDS : Anterior Urethral Stricture, Perineal Urethrostomy, Erectile Function

INTRODUCTION

Urethroplasty is the better option for patients of complex urethral strictures and recurrent urethral strictures. Urethral [1, 2]. Urethroplasty is the best option in case of urethral stricture disease but urethroplasty is associated with a failure rate of 10–50% that depends upon stricture etiology, stricture length, previous interventions, and the type of technique used [3–6]. After multiple attempts of urethroplasty if Stricture recurrence occurs then decision should be taken to avoid further attempts and should proceed for perineal urethrostomy [7] because perineal urethrostomy (PU) is a better option in such types of condition. The AUA (American Urological Association) guidelines recommends perineal urethrostomy as an option in patients with "recurrent or primary complex anterior stricture, advanced age, medical comorbidities precluding extended operative time, extensive lichen sclerosus, numerous failed attempts at urethroplasty. A successful perineal urethrostomy usually allows the patient to resume satisfactory voiding and sexual function and is generally supposed to be the last option before abandoning the urethral outlet. So this procedure is proved to be a satisfactory solution, mainly in the elderly [7]. There are also some cases in which PU is also needed like urethrectomy and/or penectomy [8, 9]. There are different types of perineal urethrostomy that are described [7, 10–12]. These different types of techniques of perineal urethroplasty are mainly derived from the first stage of the two-stage urethroplasty described by Johanson [13] and Blandy et al. [14], both renowned pioneers in the field of urethral surgery.

MATERIALS AND METHODS

This prospective observational study was done in the

department of Urology at Govt. Medical College and Hospital, Kota, Rajasthan, India. This was descriptive study of 50 patients who undergone perineal urethrostomy for anterior urethral stricture disease from January 2022 to July 2024 in our urology department as part of a plan for a staged urethroplasty repair of a complex urethral stricture. Quality of life is calculated using validated questionnaire by PROM-USS. Preoperative evaluation included clinical history, physical examination, post residual urine measurement, uroflowmetry, retrograde urethrography, IPSS, SHIM score and PROM-USS.

Study Period

The study was conducted from January 2022 to July 2024.

Inclusion Criteria

- Age 40 to 70 years, cases giving written informed consent.

Exclusion Criteria

- Patients with Pelvic Fracture Urethral Distraction Defects were excluded from the study.
- Those who has not completed family.

Follow Up

These patients were followed up on a regular basis with history taking, clinical examination, IPSS, SHIM, PROM USS and uroflowmetry at 3, 6, 12 months and later annually. In some patients suspicion of stenosis urethrography and urethroscopy were done. Patients who had required urethral instrumentation intervention (including dilation) was defined as failure for this study.

SURGERY

Lithotomy position was given to patient who planned for perineal urethrostomy. In Blandy PU, Perineal incision was given of Inverted-U shaped. Bulbus spongiosus was identified and dissected then bulbar urethra was exposed and opened ventrally. The urethrotomy was extended proximally until healthy mucosa of urethra was encountered. If patients had stricture at the membranous urethra then urethrotomy was extended into the membranous urethra up to the verumontanum. In this series, a complete transection of the urethra with mobilization of the proximal urethral stump towards the perineum was never done. In Blandy PU, apex of the inverted-U perineal flap was sutured to the most proximal part of the opened urethra. The edges of the perineal flap were further sutured distally to the urethral mucosal edges with Vicryl 3.0/4.0. From the moment tension occurred between the sutures, a midline incision was made at the posterior scrotal skin, and two scrotal skin flaps were mobilized to finalize the PU.

Statistical Analysis

Paired 't' test applied to table 2 for preoperative and postoperative IPSS score for which the 't' value was 14.12 and 'p' was 0.0001 (p < 0.05) which was statistically significant. Chi square test was applied in table 3 for SHIM scoring the Chi square value was 0.708, and 'p' value was 0.80 (p > 0.05) which was not significant. Other tables did not require any test.

RESULTS

Most of our patients were in 60-70 years' age group 30/50 i.e. 60% (table-1). Most common aetiology of stricture was idiopathic (18) followed by iatrogenic (15), traumatic (9) and post infectious (8). Average length of stricture was more than 6 cm and involving bulbar urethra (table-1). Patients were followed up for median 14 months (table-1). Preoperative IPSS score was 27+/- 4.5 and postoperative was 9+/-5 (table-2). SHIM scoring preoperative and postoperative were same ~ 21 (table-3). Pre operative Q-Max was in the range of 3-7ml/sec which got increased to 12-15ml/sec (table-7). PROM-USS for LUTS was significantly reduced from median of 19 to 8.5 (table-4) and QOL from median of 5.5 to 2 (table-4). Success rate with previous urethrotomy, urethroplasty, multiple treatment and no treatment patients were 15/17(88%), 9/12(75%), 11/14(78%), 7/7(100%) respectively (table-6). Most of the patients were satisfied with the procedure. And few of them (4) reported that postejaculatory dysfunction bothering them (table-5). In patients in which second surgery was indicated that is in patients with bladder outlet obstruction the endoscopic procedure was done without any difficulty

Tables for Perineal Urethrostomy

Table 1

	Idiopathic	Iatrogenic	Traumatic	Inflam-matory
No. of patients	18	15	9	8
Age(in year)				
41-50	2	2	1	1
51-60	5	3	2	4
61-70	11	10	6	3
Length of stricture(c.m)	6-8	6-7	3-4	3-4
Location of stricture	Penobulbar	Penobulbar	bulbar	Bulbar
Followup (month)	14-36	20-30	16-20	14-30

Table 2

IPSS score	Pre operative	Post operative	p-value
	27+/-4.5	9+/-5	.0001

Table 3

SHIM scoring	Pre operative	Post operative	p-value
Severe (1-7)	1	1	0.80
Moderate (8-11)	1	1	

More than mild (12-16)	2	2	
Mild (17-21)	13	17	
Normal (22-25)	25	21	

Table 4

PROM-USS	Pre operative	Post operative
LUTS	19 (16-22)	8.5(5-12)
QOL	5.5 (3-8)	2 (0-4)

Table 5

Ejaculatory Function Affecting QOL	
Yes	No
4	38

Table 6

Previous surgery	Ure-throtomy	Ure-throplasty	Multiple treatment	No previous surgery
Success rate %	15/17 (88)	9/12 (75)	11/14 (78)	7/7(100)

DISCUSSION

We evaluated our results according to patient age, stricture etiology, length and prior treatments. Our reconstructive approach for complex urethral stricture has gradually changed to with new evidences and refinement in technique. Although BMG continues at a stable rate, accounting for nearly two-thirds of complex cases, penile skin flap became less common and use of PU increases dramatically in elderly. Successful outcome without need for additional intervention remained nearly universal following PU. This high success rate (84%) (table-6) from PU occurred despite patients having older age, Pan urethral strictures, failed prior urethroplasty. Peterson et al first reported a success rate of 100% in 52 men undergoing perineal urethrostomy. Subsequently, Kulkarni et al, in a multicenter study, examined 215 patients treated with a variety of urethral surgeries for lichen sclerosis. This included 47 men who underwent perineal urethrostomy with a success rate of 72%. One possible explanation is that the rate of prior urethroplasty was relatively low in the report by Peterson et al (18%) compared with Kulkarni's population. Urethral stricture disease patients reported no significant difference in PROM scores after undergoing perineal urethrostomy in comparison to urethroplasty. When compared to baseline parameters, patients treated with perineal urethrostomy reported improved urinary function and no adverse effect on sexual function. Perineal urethrostomy often remains a last option for many urologists. Reasons why patient do not opt perineal urethrostomy is change in posture to urinate especially in those patients in which perineal urethrostomy was made more anteriorly on the urethra, appearance of perineum and change in ejaculation function, these things should be discussed with the patient preoperatively. Previous study showed the benefits of perineal urethrostomy but they used nonvalidated patient questionnaires including little about urinary or sexual function. And, they did not use preoperative questionnaires nor a control or comparison group. Another study reviewed 2 techniques of perineal urethrostomy (the Johanson and Blandy techniques) and found similar recurrence rates and urinary quality of life 25 outcomes. But they have not compared sexual outcome as well as post ejaculation function. Many patients 17 (table-6) have undergone prior endoscopic procedures. In the large subset of patients i.e 43/50 with complex and/or recurrent stricture, a history of repeated endoscopic interventions, prior failed urethroplasty and multiple treatments, it is becoming increasingly common. The increasing use of PU in these cases and its associated chronic, progressive and refractory natural history of stricture disease, likely contributes to patient treatment fatigue and preference for a surgery with the highest success rate. Although patients undergoing PU differed from those who underwent urethroplasty procedures with using various kind of graft/flap, on multivariate analysis only surgery year, stricture etiology, and patient age were associated with reconstructive approach. PU was more

commonly chosen in older men (>60yrs) who have completed their family compared to BMG and penile skin flap patients, who tended to be younger. Patient priorities for surgery change over time, and PU has been historically reserved for patients of advanced age. Patient satisfaction following PU has been reported up to 97.1% at a median age of 60 years which is identical to satisfaction in young age group men i.e. 97% satisfaction rate in men aged 23-49 years . We now increasingly offer PU for men less than 60 years of age, especially those who have completed their family. Among patients in which perineal urethrostomy was failed according to our definition of failure, 5 among 8 patients required endoscopic dilatation and rest 3 underwent transurethral incision of prostate. This data reflects a tertiary referral centre experience. The trend toward PU reflects awareness of the limitations of tissue transfer techniques to provide lasting relief of voiding symptoms in the presence of severely damaged tissue. Patients are counselled and given both surgery as their options, he need to understand the importance of this procedure and the avoiding of repeated interventions which both psychologically and financially demanding, and vultimately he will decide on their own reconstructive approach. Perhaps the trend toward PU is due to highest probability of success. We were not able to determine each patient's reasons for choosing or declining a particular reconstructive approach. Despite these limitations, this study offers value in describing the evolution in the management of difficult urethral stricture cases.

CONCLUSION

Perineal urethrostomy is choicest surgery in patients having complex urethral stricture disease and completed their family. After this surgical procedure patient satisfaction is good and quality of life is also not affected.

Declarations

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Conflict of Interest: None declared

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