ORIGINAL PROF-695

# URETHRAL STRICTURE;
## A PROSPECTIVE STUDY OF 150 CASES DEPARTMENT OF UROLOGY ALLIED HOSPITAL FAISALABAD

**DR MUHAMMAD AKRAM MALIK**
Senior Registrar
Allied Hospital Faisalabad

**DR. SAFDAR J. HASSAN SIAL**
Assistant Professor of Urology
Punjab Medical College Faisalanad

**ABSTRACT**

**Objective:** To demonstrate various etiological factors of urethral stricture II. To evaluate the various modes of treatment of stricture urethra. **Design:** A prospective study of 150 cases. **Setting:** The study was carried at Urology Department of Allied Hospital Faisalabad. **Period:** From 01-01-2001 to 30-06-2002. **Patient & Methods:** One hundred and fifty male patients with urethral stricture were included in the study. An analysis was carried out of the etiological factors responsible for urethral stricture formation and of the various treatment modalities. **Results:** The age range from 3 to 85 years with a mean age of 43 years. 58% patients presented with urinary retention Trauma caused stricture formation in 52 (34%) patients. Previous catheterization, pyuria, Trans vesical prostectomy and TURP were responsible for stricture formation in 35, 25,19 and 16 cases respectively. Anterior urethra was involved in 112 cases and 36 patients had posterior urethral involvement. Optical internal urethrotomy was treatment of first choice in strictures of <1 cm and it was successful in (92.7%) patients. Anastomotic urethroplasty was performed in 37 cases with success rate of 94% while substitution urethroplasty was successful in 80% cases. **Conclusions:** Anatomical sites and etiological factors of stricture urethra are comparable with other studies. Optical internal urethrotomy is reliable procedure in short and simple stricture. For long and complex stricture urethroplasty is the preferred treatment.

***KEY WORDS:*** Urethral stricture, Urological diseases, Etiology, Surgery management

## INTRODUCTION

Stricture urethra is a very challenging disease for the urologists. Trauma (direct and indirect), infections and iatrogenic causes are mainly responsible for urethral

stricture formation[1,2,3]. Patients present with symptoms of Boo bladder outflow obstruction like poor stream, dribbling, incomplete bladder evacuation or with urinary retention. Patients are assessed by contrast studies in addition to routine investigations. Retrograde urethrography is the investigation of choice[4]. Ante grade

urethrography is also performed in some cases to assess the length of stricture.

Untreated cases may develop urinary retention, uremia, urethral fistula formation, watering cane perineum, impotence or incontinence[5,7].

Dilatation, optical internal urethrotomy, anastomotic urethroplasty, substitution urethroplasty, LASER treatment, stenting etc are various treatment options. In some cases more than one treatment modality is required [8,9,10,11].

## AIMS & OBJECTIVES

1. To demonstrate various etiology factors of urethral stricture
2. To evaluate the various modes of treatment of urethral stricture.

## PATIENTS & METHODS

A total of 150 male patients with stricture urethra were included in this study. Study was conducted at the urology department Allied Hospital Faisalabadfrom01-01-2001 to 30-06-2002. All male patients irrespective of age with the diagnosis of stricture urethra were included in the study.

The protocol included detailed history and clinical examination. Base line investigations were done in all patients. Blood urea, serum creatinine and ultrasonography of urinary tract were done in every patient. Retrograde urethrogram was performed in all patients.

Patients were treated with optical internal urethrotomy, anastomotic urethroplasty, substitution urethroplasty and exteriorization of urethra and perinealy urethrostomy followed by reconstruction. Dilatations and clean intermittent self catheteriza^ion (CISC) were employed as adjuvant procedures.

The follow up ranges from 02 to 18 months.

## RESULTS

Total of 150 patients were included in the study. Age ranges from 3 to 85 years with mean age of 43 years (table I). Majority of patients (58%) presented with urinary retention and urine had to be diverted as emergency measure in these. 42 patients presented with lower urinary tract symptoms like poor stream, dribbling , incomplete evacuation etc.

Trauma caused stricture formation in 52 (34.6%) patients and out of these 28 had indirect injury and 24 suffered direct trauma. Previous catheterization was responsible for stricture formation In 35 (23%) patients. Pyuria, transvesical prostatectomy, and TURP were responsible in 25, 19 & 16 cases respectively. In 3 patients no cause could be found (Table II).

Anterior urethra was involved in 112 (74.6%) cases and 36 (24%) patients had posterior urrethral stricture. Two patients had stricture of both anterior and posterior urethra. Anterior urethral strictures were caused by direct trauma, previous catheterization and infection as well as TURP & TVP. 75% of posterior urethral strictures were caused by indirect trauma but in 25% of these strictures TVP was performed for enlarged prostate in the past.

**Table-I. Age distribution of patients with stricture urethra**

| Age | No of Patients | % age |
|---|---|---|
| 0-20 | 26 | 17.33 |
| 21-40 | 52 | 34.66 |
| 41-60 | 38 | 35.33 |
| 61-80 | 31 | 20.66 |
| 81-100 | 3 | 2 |

**Table-II.. Etiological factors responsible for stricture formation**

| Causes | No of patients | % age |
|---|---|---|
| Trauma | 52 | 34.6 |
| Catheterisation | 35 | 23.3 |
| Infection (Pyuria) | 25 | 16.6 |

| | | |
|---|---|---|
| T V P | 19 | 12.6 |
| TURP | 16 | 10.6 |

Optical internal urethrotomy was the treatment of first choice in most of the cases. It was performed in 110 cases and it was successful in 102 (92.7%) patients. It failed in 8 (7.2%) cases and in these open surgery was performed. Anastomotic urethroplasty alone was performed in 37 patients. Out of these 37 cases, internal urethrotomy had to be done in 18 (48.6%) cases followed by CISC. In two of these re-do surgery had to be done (table III).

Substitution urethroplasty and it was done in 5 patients. In two patient free penile skins graft was applied and it was successful in one patient. In 3 patients pedicle graft was used as only procedure. It was successful in all cases.

Exteriorization of urethra and perineal urethrostomy had to be performed in 6 cases, which had long anterior strictures. 2nd stage urethroplasty was done in one patient by using theirish patients Duplay technique but it was unsuccessful. Five patents did not opt for second surgery. They were satisfied with their perineal urethrostomies as permanent stroma.

Clean self cateterization and active dilatation was applied as adjuvant therapy in some patients.

**Table III. Various treatment modalities for urethral stricture**

| Treatment modality | No of patients | Success rate |
|---|---|---|
| Internal urethrotomy | 110 | 92.7% |
| Anastomotic urethroplasty | 37 | 94.6% |
| Subsitution urethroplasty | 5 | 80% |
| Perineal urethrostomy = exeriorization of urethra | 6 | 80% |
| 2nd stage urethroplasy | 1 | - |

## DISCUSSION

Urethral stricture is a very troublesome disease of human male. It is very challenging to the treating urologists. Major causes of stricture in this study were trauma, previous catheterization, infections and iatrogenic causes like other series[1,2,12].

Internal urethrotomy was applied as treatment of choice in majority of cases. It was less time consuming and associated with less morbidity and shorter hospital stay. It was successful in short strictures. In long strictures (>1.5 cm) it had to be carried out for more than one time along with active and passive dilatations. Open surgery had to be performed in 30% cases. These results are comparable to other studies[8,13,14,15]

Open surgery in failed internal urethrotomy cases was more difficult as compared to cases in which open surgery was the primary treatment of urethral stricture. Blind strictures, strictures of more than 2 cm in length and anatomically type III, IV, V, strictures were best managed by anastomotic urethroplasties. Internal urethrotomy, active and passive dilatations were employed as adjuvant procedures to anastomotic urethroplasties with comparatively better results than other series[8,16].

Results of treatment for strictures > 3 cm in length, posterior strictures and complicated strictures were not as good as compared to other series. They were found difficult to manage by perineal approach[5,6,17].

Substitution by free penile skin has also 50% success rate butnumber of patients were only two1[11,17,18].

Perineal urethrostomies were done as temporary procedures along with exteriorization of urethra. Majority of patients accepted this as permanent and refused second surgery. In only one patient we could reconstruction with poor results as compared it international series reconstruct.

Results of treatment with laser and self expanding urethral stents are promising but long term follow up is required. These techniques were not available in our setup.

## CONCLUSIONS

Anatomical sites of urethral strictures and its etiological factors are comparable to other studies. Previous catheterization is very important and preventable cause of urethral stricture.

Optical internal urethrotomy was proved to be reliable procedure for the treatment of simple and short strictures. In blind, and complete strictures anastomotic and substitution urethroplasty should be considered.

Strictures formed due to previous catheterization and TURP were easily managed. Strictures formed due to indirect urethral injury were very difficult to manage. Active dilatation and clean self catheterization had very little role in managing or preventing urethral strictures.

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