



## Original Research

### A clinical study of stricture urethra and their management

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#### Abstract

**Aim:** Urethral stricture is a relatively common urological problem. This study aims to find out common causes and common sites of urethral stricture and to compare VIU, Primary urethroplasty and simple dilatation in their management.

**Material & Methods:** This was a Retrospective study that included all patients of stricture urethra admitted in Department of Surgery, J.A. Group of hospital associated with Gajra Raja Medical College, Gwalior from Sept.2008-Aug.2013. Data were collected from the patient's record which is available in Medical Record Department.

**Results:** A total of 89 patients were studied (86 males & 3 females). Etiologies found were pelvic trauma (41.57%), urethral catheterisation (19.10%), urinary infection (30.33%), TURP (5.67%) and idiopathic (3.37%). Bulbomembranous urethra was the commonest site (39.32%) followed by membranous (30.33%), bulbar (20.22%), penile (5.61%) and prostatic urethrae (4.49%). 43 patients were treated with VIU followed by CIC, 25 patients with simple dilatation only and 21 patients with primary urethroplasty. Success rate was high in VIU group (79.06%) followed by urethroplasty (61.40%) and dilatation groups (48%).

**Conclusion:** Urethral stricture disease is seen predominantly in young male population. Most common causes are pelvic trauma followed by UTI and urinary catheterisation. In this series bulbomembranous urethra was the most common location of the stricture. In our center VIU was opted as the most common intervention and it carried better outcome as compared to primary urethroplasty and dilatation groups. Despite that urethral stricture remains a difficult problem to treat and patients carry lifelong morbidities.

**Keywords:** Urethral stricture, dilatation, VIU, CIC, Urethroplasty

#### Introduction

Currently urethral stricture disease is relatively common affecting young males especially, most strictures being acquired from injury or infection. Blunt perineal trauma causes injury to the bulbar

urethra; pelvic fractures result in urethral distraction defects in the posterior urethra, but iatrogenic causes, including urological instrumentation and placing indwelling catheters, which results in strictures anywhere in the urethra, are the most

common causes.

Depending on the patient and surgeon preferences many options are there in management of urethral strictures ranging from simple dilatation to endoscopic methods to open surgeries.

### Material and Method

This retrospective study included all patients of stricture urethra admitted in our center from Sept. 2008-30Aug.2013. Data were collected from the patient's record which is available in Medical Record Department. The records were analysed to identify 89 patients diagnosed of urethral stricture. Age and sex wise distribution of the patients were done. Analysis was done focussing on the etiology and the site of strictures, management done and it's outcome. Interventions noted were Visual Internal Urethrotomy (VIU), urethral dilatation and primary urethroplasty. Patients were categorized into 3 groups based on the management done. Their follow up in our department at 1 month, 3 months , 6 months and 1 year was studied to find out the outcome of intervention based on 3 factors, patient satisfactorily voiding (PSV), easy dilatation (ED) and poor stream (PS).

### Results

Out of 89 patients studied only 3 were females (3.37%). Altogether 86.52% of patients belonged to below 60 years, most common being 20-40 years group. Regarding etiology of the stricture, pelvic trauma was the most common (41.57%).

**Table 1** Etiology of urethral stricture

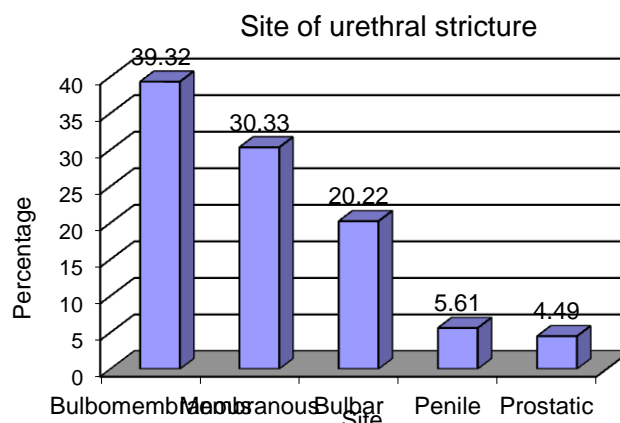
Etiology	No. of cases	Percentage (%)
Pelvic trauma	37	41.57
Post-catheterization	17	19.10
Infection	27	30.33
Post - TURP	5	5.61
Unknown	3	3.37
Total	89	100

Patients were presented with different clinical presentations like poor stream of urine, urinary retention and dribbling. 42 patients had symptom of poor stream (47.19%) followed by retention of urine (34.83%) and dribbling(17.98%).

**Table 2** Clinical presentations

Sign & symptoms	No. of cases	Percentage (%)
Poor stream	42	47.19
Retention of urine	31	34.83
Dribbling	16	17.98
Total	89	100

Out of 89 patients 35 had stricture at bulbomembranous urethra(39.32%) membranous urethral stricture was seen in 27 patients and bulbar urethral stricture was seen in 18 patients, penile urethral stricture and prostatic urethral stricture was seen in 5 and 4 patients respectively.



**Figure 1** Bar diagram showing different sites of urethral strictures

Patients were managed by primary urethroplasty, urethral dilatation and VIU followed by CIC depending on the type and length of stricture. 43 patients were managed by VIU followed by CIC(48.31%) and 25 patients by dilatation(28.08%). 21 patients underwent primary urethroplasty (23.59%). Since ours was a retrospective study and surgeries were performed by different surgical teams, there was no specific criteria for allocation of the patients in to different treatment modalities; but in general patients with strictures of 1cm length or below underwent VIU.

All the patients included in the study had their OPD visits in 1<sup>st</sup>, 3<sup>rd</sup>, 6<sup>th</sup> months and at 1 year. Their records were analysed and based on the factors PSV, ED and PS outcomes were measured as shown in table 2.

**Table 3** Treatment outcome

Treatment	No. of cases	Success rate	
		No.	%
VIU Follow by CIC	43	34	79.06
Dilatation only	25	12	48
Primary urethroplasty	21	13	61.40

## Discussion

Studies on this topic are not rare to find as urethral stricture is an age old problem perplexing medical practitioners all over the world. This study was first on the topic from our tertiary referral hospital.

Urethral strictures are seen commonly in men and are rare in women as found in our study. This was also observed by Smith and colleagues in the USA in an active search for urethral stricture in women where they found only 7 women within a period of six years<sup>1,2,3</sup>. Most of the literature has the common age group in the middle age. Our study had a mean age of 39.17 years with a range of 14- 80 years comparable to studies by Mathur et al<sup>4</sup> (mean age- 39 years) and Chhetri et al<sup>5</sup> (mean age- 36.2 years). Trauma due to accidents or catheterization in this study was found to be the leading cause of urethral stricture across all the age groups(60.62%) although blunt pelvic trauma was the commonest individual cause(47.52%). Balindi had 53.3% of the patients having stricture at the bulbomembranous urethra<sup>6</sup>. Our study, similar to the data in the literature had commonest site at the bulbomembranous urethra (39.32%) followed by membranous urethra (30.33%).

Most of the literature shows more than 90% success rate for procedures like VIU and urethroplasty. Mathur et al reported 90% success rate in 30 patients studied for VIU and 93.6% success in urethroplasty<sup>4</sup>. In a study by Nyongole showed 93% success rate for VIU and 90% success rate for urethroplasty. Our study too showed better results with VIU and primary urethroplasty, but since in our retrospective study we had different surgeons operating, success rates are not comparable to those derived by the above mentioned study groups

## Conclusion

Urethral strictures are relatively common and frustrating problem both for the patient and the surgeon, primarily because of a comparatively higher failure rate. We compared VIU, Simple dilatation and primary urethroplasty in our study which showed a higher failure rate for dilatation alone and comparable success rate for other two

modalities. So it may be concluded that VIU and Primary urethroplasty are better methods of management of urethral strictures provided that patient selection is accurate.

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**Conflicts of Interest:** The authors declare that they have no competing interests.

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