

## Intermittent Self Dilation – An Option For The Prevention of Urethral Stricture Recurrence After Filliform Follower Urethral Dilatation

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### ABSTRACT

**Background:** Urethral stricture and its recurrence is still a major problem in male. Several procedures are present for the treatment of the disease. Lapiques introduced the concept of intermittent self dilatation (ISD) which has decreased the incidence of recurrence of urethral stricture if done properly. The aim of this study was to report the outcomes of ISD for the treatment of urethral stricture after Filliform follower urethral dilatation (FFUD). **Method:** This was a prospective comparative study, conducted in the department of surgery, urology unit from March 2013 to February 2016. Total of 49 patients were enrolled and were randomly divided into Group A and Group B. In Group A, all the patients were taught ISD with Nelaton Catheter after FFUD. In group B, all patients underwent only FFUD for urethral stricture. In both groups, Foley's catheter was removed after 2 weeks of FFUD. These patients who had difficulty in passing urine or having lower urinary tract syndrome after removal of catheter, were evaluated for urethral stricture recurrence by clinical symptoms, ultrasonography, urine test for culture and sensitivity, cystoscopy/urethrogram as necessary. **Result:** In Group A, 4 patients out of 20 (20%) developed urethral stricture recurrence whereas in Group B, 18 patients out of 23 (78.26%) developed urethral stricture recurrence. Therefore, the rate of urethral stricture recurrence is significantly more in group B than the Group A ( $p < 0.001$ ). **Conclusion:** ISD is an effective way for the prevention of urethral stricture recurrence after FFUD.

**Key words:** FFUD, ISD, recurrence urethral stricture

### INTRODUCTION

Urethral Stricture is a scarring process involving either urethral mucosa / submucosa or spongy erectile tissue of the corpora. This scar reduces the internal size of the urethral lumen which causes blockage or reduction in the flow of urine leading to complications such as urosepsis and renal failure<sup>1</sup>. So it is still one of the major problems in the male population. In general, urethral stricture refers to mainly anterior urethral constriction. The length of stricture may vary from less than 1 centimeter to full length of it.

In previous days, Gonorrhoea was supposed to be the most common cause for stricture. However, at present the concept has been changed. It is idiopathic and iatrogenic disease. Unnecessary urethral catheterization and repeatedly urethral instrumentations often cause stricture. Therefore, these methods should be minimized to prevent urethral stricture<sup>2</sup>. Other causes include noticed / unnoticed straddle injury, Balanitis xerotica obliterans (BXO)<sup>3</sup>. There are various treatment options which aimed to widen the narrow part of the urethra. However, the best technique has not been clearly defined yet<sup>4</sup>. Internal urethrotomy and urethral dilatation are the most commonly performed treatments for the urethral stricture. The other treatment options are laser urethrotomy, urethroplasty<sup>5</sup>.

Optical internal urethrotomy by cold knife and laser are first line of surgical treatment for short length of urethral stricture<sup>6,7</sup>.

However, there is a chance of recurrence of urethral stricture after any type of surgery for stricture. So, some additional procedure is needed to prevent recurrence after primary treatment. Temporary intermittent self dilatation after any type of primary surgical treatment is also described by some authors for the prevention of recurrence of it<sup>8,9</sup>.

Lapiques introduced the concept of self dilatation to prevent recurrence of urethral stricture<sup>10</sup>. ISD is a simple, short and cheap procedure in which the patient himself catheterizes with a well lubricated hydrophilic catheter or Nelaton catheter twice, once a day or in a different time interval. Therefore, the present study compares the incidence of recurrence of urethral stricture with or without self dilatation after FFUD at Nepalgunj Medical College.

### MATERIALS AND METHOD

It is a comparative study conducted in the Department of Surgery, Urology unit, in NGMC from March 2013 to February 2016. All patients having difficulty in passing urine, were examined with Ultrasonography, x-ray kidney ureter bladder (KUB), urine for routine, culture and sensitivity, retrograde urethrogram and cystourethroscopy. In patients who had stricture, Urethroscopy was done. Stricture site was located. Guide wire inserted through the strictured area and gradual urethral dilatation was done with Filliform follower dilator up to 20 Fr. 16 Fr. Foley's catheter was placed which was kept for 2 weeks. After 2 weeks, Foley's catheter was removed.

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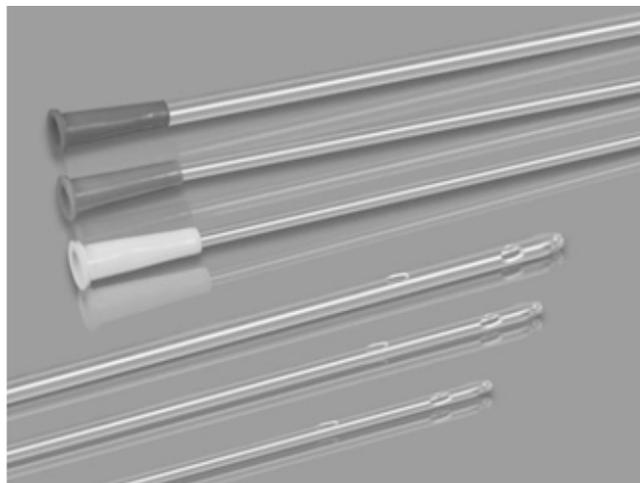


Figure 1: Nelaton catheter



Figure 4: Urethrogram showing bulbar urethral stricture

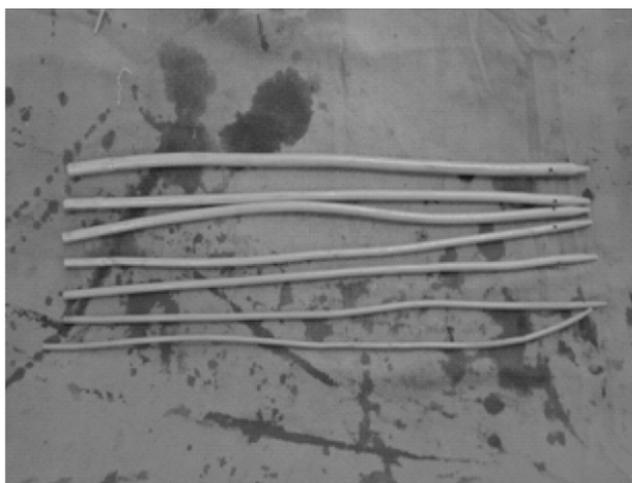


Figure 2: Filliform Follower Dilators

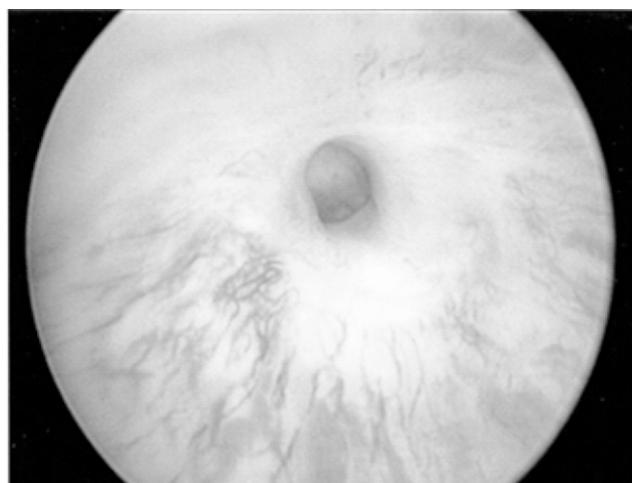


Figure 3: Cystoscopic view of urethral stricture

**Inclusion criteria:**

- Short stricture less than 1 cm.
- Patient willing for follow up
- No prior history of stricture and dilatation.
- Male patient
- Age between 20 to 85 years.

**Grouping and treatment:**

After doing FFUD and the removal of Foley's catheter the patients in Group A were taught ISD with 16 Fr Nelaton catheter. They underwent intermittent self dilatation once a day for 1 month then alternate day for next one month. Group B consisted the patients who underwent only FFUD but no ISD. Patients of both groups were observed for 3 months in each month or when he developed symptoms of LUTS or retention of urine.

Patients who presented with difficulty in passing urine or lower urinary tract syndrome (LUTS) were reevaluated with ultrasonography, urine for culture /sensitivity, x ray KUB. Cystoscopy and urethrogram were done only in those patients in whom the LUTS was present but the imagings and the urine culture were normal.

Data analysis was performed with SPSS version 17. For the parametric test of two groups, independent samples t-test was used. A p-value less than 0.05 was considered statistically significant<sup>11</sup>.

**RESULT**

A total 49 patients were enrolled in this study however 43 patients completed this study. Group A consisted 25 patients in which 4 patients discontinued ISD and 1 patient lost the follow up. Group B consisted 24 patients in which 1 patient lost the follow up. In group A mean age of the patients was  $49 \pm 14.261$  and in group B the mean age was  $51.09 \pm 13.714$ .

Urethral stricture recurrence rate:

In group A, out of 20 patients 6(30%) patients even doing ISD complained of LUTS at different time interval during follow up. These patients were investigated to find out the cause. In 2 patients urinary tract infection was found and 4 patients had urethral stricture. In group B, out of 23 patients, 18 (78.26%) patients had LUTS and restructure formation on investigations ( $p < 0.001$ ) Table I.

Variables	Group A	Group B	P-Value
Number of patients	20	23	
Urethral stricture recurrence rate	4(20%)	18(78.26%)	<0.001

**Table I : Urethral stricture recurrence**

## DISCUSSION

This is the first prospective study conducted at Nepalgunj Medical College Kohalpur about the role of ISD for the prevention of recurrence of urethral stricture after FFUD. The present study has revealed that 20% in Group A patients developed a recurrence of urethral stricture within three months which was significantly less when compared with Group B patients in which 78% of patients developed recurrence of urethral stricture. But ISD did not prevent the recurrence in all patients. These findings are supported by the study of Khan S et al (2011)<sup>12</sup>. To evaluate the effect of ISD, this study did follow up of patient for 3 months and in the study of Khan S et. al the follow up was done for one year. Therefore, there is an evidence that till one year ISD decreases the reoccurrence of urethral stricture. However, the long term follow up is needed to evaluate the long term effect of ISD in prevention of the urethral stricture.

The drop-out patients in the Group A is significantly higher than Group B. In Group A, 5 patients stopped to do self catheterization due to laziness. These patients came again with LUTS. Cystoscopy revealed urethral stricture. This revealed that all patients do not have much interest to perform ISD with interest, however, the study of Mubasher H et, al. mentioned that ISD has considerable social advantage and patients can easily handle the ISD at home. And is economy by reducing the cost by preventing recurrence of stricture<sup>13</sup>.

## CONCLUSION

The present study showed that ISD is the effective method of reducing the stricture recurrence after FFUD. Therefore, all the patients must be taught about the intermittent self dilatation after FFUD.

## REFERENCES

- Jordan GH, Schlossberg SM. Surgery of the penis and urethra. Walsh PC, Retik AB, Vaughan ED, Wein AJ, editors. Campbell's Urology. 8th ed. London: Saunders 2002: 3886-952.

- Fenton AS, Morey AF, Aviles R, Garcia CR. Anterior urethral strictures: aetiology and characteristics. *Urology* 2005; 6a5: 1055-8.
- Mallo N, Garat JM, Santaularia J, Hernandez J. Urethral strictures: aetiology and characteristics. *Eur Urol* 1978; 4: 9-12.
- Andrich DE, Mundy AR. What is the best technique for urethroplasty? *Eur Urol*. 2008;54:1031-41.
- Oosterlinck W. Treatment of bulbar urethral strictures a review, with personal critical remarks. *ScientificWorldJournal*. 2003;3:443-54.
- Dutkiewicz SA, Wroblewski M. Comparison of treatment results between holmium laser endourethrotomy and optical internal urethrotomy for urethral stricture. *Int Urol Nephrol*. 2012;44:717-24.
- Jin T, Li H, Jiang LH, Wang L, Wang KJ. Safety and efficacy of laser and cold knife urethrotomy for urethral stricture. *Chin Med J (Engl)*. 2010;123:1589-95.
- Dubey D. The current role of direct vision internal urethrotomy and self-catheterization for anterior urethral strictures. *Indian J Urol*. 2011;27:392-6.
- Lauritzen M, Greis G, Sandberg A, Wedren H, Ojdeby G, Henningsohn L. Intermittent self-dilatation after internal urethrotomy for primary urethral strictures: a case-control study. *Scand J Urol Nephrol*. 2009;43:220-5.
- Lapides J, Diokno AC, Silber SJ, Lowe B S. Intermittent self-catheterization in the treatment of urinary tract disease. *J urol* 1972;107:458-61
- Marusteri M, Bacarea V. Comparing groups for statistical differences: how to choose the right statistical test? *Biochemical Medica*. 2010;20(1):15-32.
- Khan S, Khan RA, Ullah A, Haq F, Rahman et al. Role of Intermittent self catheterisation (CISC) in the prevention of recurrent urethral strictures after internal optical urethrotomy. *J Ayub Med Coll Abbottabad* 2011;23(2):22-25.
- Akkoe A, Aydin C, Kartalmis M, Topaktas R. Use and outcomes of amplatz renal dilator for treatment of urethral strictures. *Int. braz J urol*. 2016;42(2):356-64.