

INTERMITTENT URETHRAL SELF DILATATION FOR PREVENTION OF RECURRENT STRICTURE

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ABSTRACT

Objective: To find out the role of clean intermitting self dilatation (CISD) for the prevention of recurrent urethral stricture.

Material and Methods: This comparative study of patients undergoing optical urethrotomy for anterior urethral stricture was conducted in Surgical Unit Hayatabad Medical Complex, Khyber Medical Centre and Khyber Teaching Hospital Peshawar from July 2004 to June 2008.

Results: A total of 146 male patients were included in the study. They were divided into two groups of 73 each on alternate basis. Group A was control group and group B with clean intermitting self dilatation and were followed upto 8 months. Study results showed a high rate of recurrence in control group A i.e. 42 patients (57.53%) in comparison to self dilatation group B i.e. 26 patients (35.61%).

Conclusion: Clean intermitting self dilatation is an effective procedure in the prevention of recurrent urethral strictures for primary strictures and deep strictures between 0.5-1.5cm length after optical urethrotomy.

Key words: Urethral stricture, Optical urethrotomy, Urethral dilatation, Clean Intermitting Self Dilatation (CISD).

INTRODUCTION

The treatment of urethral stricture is usually not difficult but the problem lies in high rate of recurrence¹. Previously infections and urethral injuries were the common causes² but now iatrogenic trauma, including inflammation from use of latex catheter is the leading cause of urethral stricture formation³⁻⁵. The deeper and longer the stricture, more are the chances of recurrence^{6,7}.

The modality of treatment changes with the advancement in technology and technique but the recurrence rate remains high⁷.

Previously urethral dilatation was common practice but now optical urethrotomy is the gold standard for open urethral stricture, which has many advantages over urethroplasty⁸. This procedure is cost effective and associated with fewer complications. The disappointment lies in high rate of recurrence⁹.

Incidence of urethral stricture is on the

rise because more and more urological procedures are being done transurethrally^{10, 11}. Reported incidence of urethral stricture following trans urethral resection of prostate is 9%^{12,13} which is reported to be significantly reduced by preliminary internal urethrotomy to 32 Fr^{14, 15}. Using small caliber silastic catheter, for a short duration can also prevent formation of urethral stricture. This study was thus planned to find out the role of clean intermitting self dilatation (CISD) for the prevention of recurrent urethral stricture.

MATERIALS AND METHODS

Between July 2004 to June 2008, 146 male patients underwent optical urethrotomy for anterior urethral stricture attended at Hayatabad Medical complex, Khyber Teaching Hospital and Khyber Medical Centre. Follow up record was maintained at all these three sites.

All patients had urethrotomy using cold knife via stortz 24 Fr Urethrotome by a single surgeon. Incision was given under vision at 12, 5

and 7 o'clock position. For stricture longer than 1 cm or when active bleeding was encountered a 16 Fr Foleys catheter was left for 24- 48 hours.

All the patients with Posterior urethral stricture; Post Urethroplasty urethral stricture; not able to perform self dilatation of urethra; with more than 3 simultaneous urethral stricture or stricture longer then 4cm; with completely closed urethral stricture; having para urethral abscess or urinary fistula were excluded from the study.

Pre operative assessment included retrograde and voiding cystourethrogram. Midstream urinalysis was done and urine culture and sensitivity only if infection was present. All urinary tract infections were treated pre operatively with antibiotics.

The patients were divided into two groups on alternate basis. Group A patients had only optical urethrotomy, while Group B patients were put on Clean Intermittent Self Dilatation (CSID)-regime starting from 2nd post operative week. This involved self dilatation with 14 Fr, nelaton catheter which was lubricated with lignocane jelly. The regime consist of daily dilatation for 4 weeks, then alternate day for 4 weeks, followed by every 3rd day dilatation for 4 weeks and finally weekly for 8 weeks.

The patients were followed in out-patient departments at 6 weeks, 4th months, 6th months and on 8th month post operatively. All patients had urethrogram on 2nd and 4th visit but if symptoms of recurrent stricture develops or if the nelaton

catheter couldn't pass through then they were asked to come early for follow up and had an additional urethrogram.

RESULTS

The commonest etiology of urethral stricture was iatrogenic trauma; including history of previous catheterization 43.15%, followed by trauma 28.08%, while urethritis being the least common cause 18.49% (Table 1).

The result showed a high rate of recurrence in control Group A i.e. 42 pts (57.53%) in comparison to self dilatation Group B i.e. 26 pts (35.61%).

Majority of recurrence in Group A occurred in first 4 months i.e. 26/42 patients (61.90%), while in Group B majority of the recurrence occurred between 4-8 months i.e. 16/26 patients (61.53%) (Table 2).

The recurrence rate is much higher in secondary stricture “those treated previously” i.e. 55.55 % in Group B and 74.19% in Group A, compared to primary stricture i.e. 23.91% in Group B and 45.23% in Group A (Table 3).

The recurrence rate is higher in long stricture > 1.5 cm (Table 4). It is also higher in trauma and infection group 20% in Group A and 36.84% in Group B in comparison to those occurring due to iatrogenic or catheter trauma.10.81% in Group A and 24.39% in Group B (Table 5).

Table 1: Causes of stricture formation

	Iatrogenic	Trauma	Urethritis	No. Cause
Group A(n=73)	29	23	12	9
Group B(n=73)	34	18	15	6
Total (n=146)	63 (43.15%)	41 (28.08%)	27 (18.49%)	15 (10.27%)

Table 2: Time of recurrence of stricture following optical urethrotomy

	1 ½ month	1 ½ - 4 months	4 - 6 months	6 - 8 months
Group A	8	18	9	7
Group B	3	7	11	5

Table 3: Recurrence in primary urethral stricture compare to secondary stricture

	Group A		Group B		P value
	No. of Patients	Recurrence	No. of Patients	Recurrence	
Primary stricture	42	19 (45.13%)	46	11 (23.91%)	0.05*
Secondary stricture	31	23 (74.19%)	27	15 (55.55%)	0.22

* Significant

Table 4: Recurrence of strictures in relation to length of stricture

Stricture length	Group A		Group B		P value
	No. of Patients	Recurrence	No. of Patients	Recurrence	
<.5 cm	38	15 (39.47%)	31	7 (22.58%)	0.21
.5 – 1.5 cm	21	16 (76.19%)	24	10 (41.66%)	0.04*
> 1.5 cm	14	11 (78.57%)	18	9 (50%)	.19

* Significant

Table 5: Recurrent stricture in relation to an etiology

	Group A		Group B		P value
	No. of Patients	Recurrence	No. of Patients	Recurrence	
Iatrogenic	18	10 (55.55%)	22	6 (26.08%)	0.13
Catheter	11	4 (36.36%)	12	4 (36.36%)	0.77
Trauma	23	16 (69.56%)	18	9 (50%)	0.34
Infection	12	9 (75%)	12	5 (41.66%)	0.21
No Cause	9	3 (33.33%)	6	2 (33.33%)	0.57

* Significant

DISCUSSION

This study showed a high rate of recurrence (57.53%) after optical urethrotomy which is considered a gold standard for treatment of anterior urethral stricture since 1974^{16, 17}. Similar recurrence rates have been reported by other studies¹⁸⁻³⁰. The longer the patient are followed, the more recurrence occurs and those studies where patients were followed for more than 5 years the success rate drop to as low as 22%³¹⁻³³. The recurrence rate in subsequent re-urethrotomy is also much higher.

In spite of high recurrence, this procedure is still widely used because it is usually a day case procedure, which is easy to perform, cost effective and has good short-term success rate. Most importantly, it is associated with less complication rate.

The only problem is high rate of recurrence which to some extent can be tackled by clean intermittent self dilatation^{34, 35}. This study shows that recurrence rate dropped to 35.61% in patients who had CISD especially in those patients who had a urethral stricture of 0.5-1.5 cm and those with primary urethral stricture. Some other studies have reported much lower recurrence rate (9.43%)³⁶.

In this study, the benefit of CISD is quite obvious in urethral stricture of 0.5-1.5 cm. Patient compliance with self dilatation is very good, especially if the problem of recurrence is discussed

with them and first couple of dilatation is done by clinician. Due to unavailability of lofric catheter and keeping in view the cost effectiveness, nelaton catheter size 14 Fr after lubrication with lignocane jelly is a good alternate. Patient disinfects it by keeping the catheter in dettol solution for 30 minutes before use. The efficacy of CISD has been shown in many other studies^{37, 38}.

The other important aspect is that if the stricture do occurs the patient is warned well in advance and he seeks medical advice early. Such recurrent strictures are managed electively by optical urethrotomy. If the patient presents late with urinary retention and completely occluded urethra, then the only option left will be emergency suprapubic catheterization and delayed urethroplasty.

CONCLUSION

Clean intermitting self dilatation (CISD) is an effective procedure in the prevention of recurrent urethral strictures. The study shows that clean intermitting self dilatation (CISD) following urethrotomy is beneficial in primary stricture and deep strictures between 0.5 - 1.5cm length.

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