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# The Role Clean Self Intermittent Catheterization Following Direct Vision Internal Urethrotomy in Reduction of Recurrence of Urethral Stricture

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**Objectives:** To investigate the effect of clean self intermittent catheterization on recurrence rate following direct vision internal urethrotomy and to assess rate of complication of direct visual internal urethrotomy (DVIU) alone versus DVIU with self catheterization.

**Patients and Methods:** This double blind case control study was conducted in Soba university hospital (SUH). A total of sixty two patients were selected randomly in to treatment group B (31 patients) and control group A (31 patients) all patients were treated with DVIU followed with indwelling catheter for three days.

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THE ROLE CLEAN SELF INTERMITTENT CATHETERIZATION FOLLOWING DIRECT VISION INTERNAL URETHROTOMY IN REDUCTION OF RECURRENCE OF URETHRAL STRICTURE

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# The Role Clean Self Intermittent Catheterization Following Direct Vision Internal Urethrotomy in Reduction of Recurrence of Urethral Stricture

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**Results :** Twenty Four (77.41%) out of 31 patients in control group A developed urethral stricture recurrence while six (19.35%) patients in treatment group B had stricture recurrence ( $p < 0.000$ ). In control group A 14 patients (58.3%) out of 24 had their recurrence in the first six months of follow-up while five (83.3%) out of six in group B had their recurrence in the next six months of follow-up. In control group A four patients developed urinary tract infections all were positive for E.coli. In treatment group B urinary tract infections were found in three patients, culture was positive for E.coli in two patients and Klebsiella for the third one, and one patient developed epididymo-orchitis.

**Conclusion :** Clean self intermittent catheterization is a simple, safe, cost effective and easy to perform procedure for prevention of urethral stricture with good acceptability, compliance, better outcome and with few complications.

## I. INTRODUCTION

Urethral stricture is common urological disorder and its oldest disease known to mankind. Previously infections and gonorrhoea were the common causes of urethral stricture [1, 2]. In developed world, gonococcal strictures are rare and most strictures today are either iatrogenic or idiopathic [3, 4] because

more and more urological procedures are being done transurethrally. Dilatation was often the first intervention chosen to deal with small urethral stricture but long term results with dilatation have high failure rate. Direct vision internal urethrotomy, has greatly improved the treatment of urethral strictures. This procedure is now the preferred method of treatment of urethral strictures less than 1.5 cm in length and which are located in the bulbar or penile urethra.

Despite good immediate results there is considerable risk of recurrence between 10-50% [5, 6].

Self catheterisation has been popularised to reduce the risk of recurrent of urethral stricture disease after urethrotomy [7].

The concept of clean intermittent self catheterisation was introduced by Lapides in early 1970s who proposed that strict aseptic technique is not necessary for clean intermittent self catheterisation.

In this study we have investigated the effect CSIC on the frequency of recurrence of urethral stricture in a randomised controlled manner including complications.

## II. PATIENTS AND METHODS

Sixty two adult male patients with urethral stricture disease booked for direct vision internal urethrotomy (DVIU) divided into two groups: group A (31) patients underwent DVIU where group B (31) were put on CISC following DVIU.

All the patients had the same investigation include urine general, culture and sensitivity test, renal function and ascending urethrogram.

Both groups of patients had DVIU in urology unit at soba university hospital .The DVIU performed by consultant urologist.

All patients had a size 16F urethral catheter following DVIU for 3-5days.

All were given a single dose of antibiotic with the start of the procedure.

The two groups randomized in to DVIU alone and DVIU plus CISC.

The group for CSIC performed the procedure CISC safely by well trained theatre attendant. The follow-up at 3, 6 and 12<sup>th</sup> month. In each follow up the patient history of urinary stream, urine analysis and ascending

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urethrogram (for only symptomatic one) assessed. The rate of recurrence assessed mainly by ascending urethrogram.

### III. DATA COLLECTION

Data was collected by structure questionnaire for each patient, from date of operation until discharge from hospital, and out patient follow-up at three months, sixth months and 12th months. Patients or their relatives either had written or verbal consent before being enrolled in this study a flow chart will be used for data collection.

#### a) Study Duration

The study was conducted in the period from 2nd of July 2012 to 3<sup>rd</sup> of December 2013.

Data was analyzed by computer using statistical package for social science (spss) program. The result was in texts, tables, and figures. Post hoc multiple comparison were done with difference was considered significant when probability ( $p < 0.05$ ).

### IV. RESULTS

A total of sixty two patients were included in the study 31 patients in treatment group B and 31 patients in control group A. No drop-outs occurred apart of one patient in control group who was dead because of renal failure but after he had a recurrence of urethral stricture. The mean age in control group A ( $52.3 \pm 13.23$ ) range (28-79). In group B the mean age  $47.03 \pm 12.96$  range (28-68). Incomplete bladder empty in 49 patients (79%) and poor stream in 48 patients (77.4%) were the most common presentation followed by terminal dribbling in 34 patients (54.8%), hesitancy in 27 patients (43.5%) and urine retention in eight (12.9%) of all patients with urethral stricture. The most common etiology of urethral stricture were infections and gonorrhoea in 24 patients (38.7%) followed by idiopathic in 14 patients (22.6%), instrumentation in eight patients (12.9%), post prostatectomy in 10 patients (16.1%), trauma a cause of urethral stricture in five patients (8.1%) while surgery for hypospadias being the least common cause in one patient (1.6%) (figure 1). Concerning site of strictures bulbar stricture was the commonest one found in 35 patients (56.5%) followed by membranous in 13 patients (21%), prostatic in 11 patients (17.7%) and penile stricture least one in three patients (4.8%) (figure 3). Most of patients had complications related to urethral stricture 43 patients (69.4%), of these 17 patients (39.5%) had urinary tract infections, 15 patients (34.9%) had bladder diverticulum, chronic cystitis and urine retention in four patients (9.3%) for each, renal impairment in two patients (4.7%) and vesical stone in only one patient (2.3%) (figure 2).

The result showed 24 patients (77.41%) had recurrence of stricture in control group A and six

patients (19.35%) had a recurrence in treatment group B (figure 4). At the end of the first three month of follow-up five patients (20.8%) in the control group A had urethral stricture recurrence in compare to one patient (16.7%) had recurrence in the treatment group B. At the end of six month of follow-up nine patients (37.5%) in the control group A developed recurrence while no patient (0.0%) in the treatment group B had stricture recurrence. By the end of follow-up at one year ten patients (41.7%) in the control group A had recurrence of urethral stricture while five patients (83.3%) had recurrence in treatment group B (figure 3).

In the control group A 14 patients (58.3%) their recurrence in the first six months of follow-up, while five patients (83.3%) in the group B had their recurrence in the second six months ( $n=5$ ) 83.3% (figure 4).

In the control group A, four patients had urinary tract infections were positive for E.coli. In the treatment group B three patients had urinary tract infections two were positive E.coli and one positive for klebsiella and one patient developed epididymo-orchitis.

Figure 1 : Distribution of the study population according to the etiology of urethral stricture

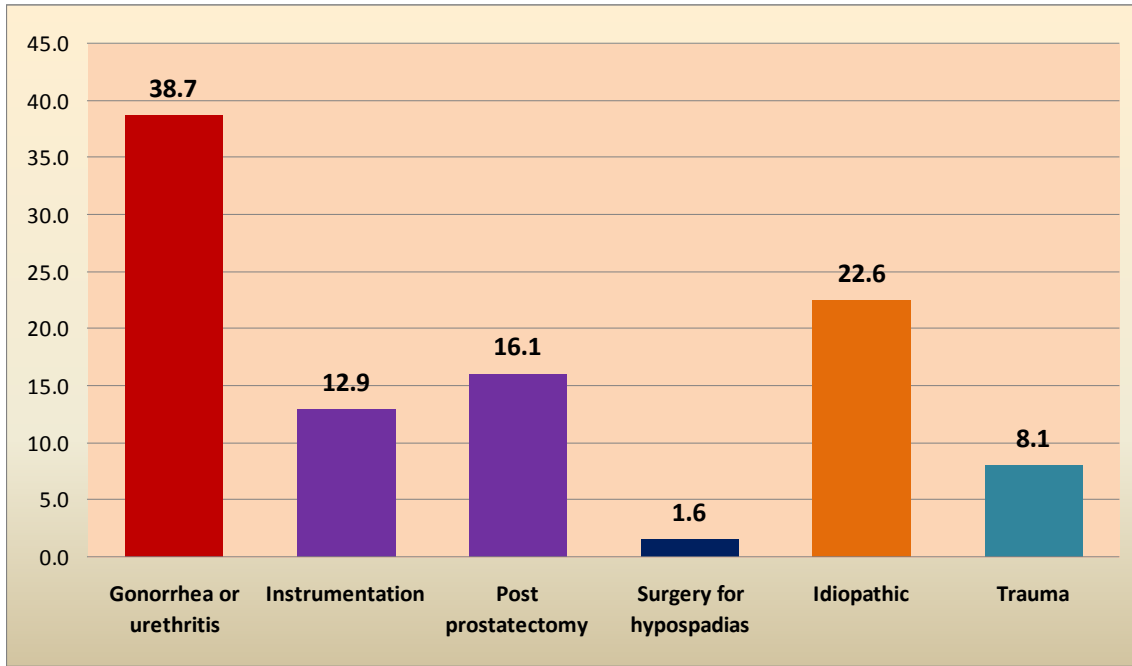


Figure 2 : Distribution of the study population according to The Complications of urethral stricture

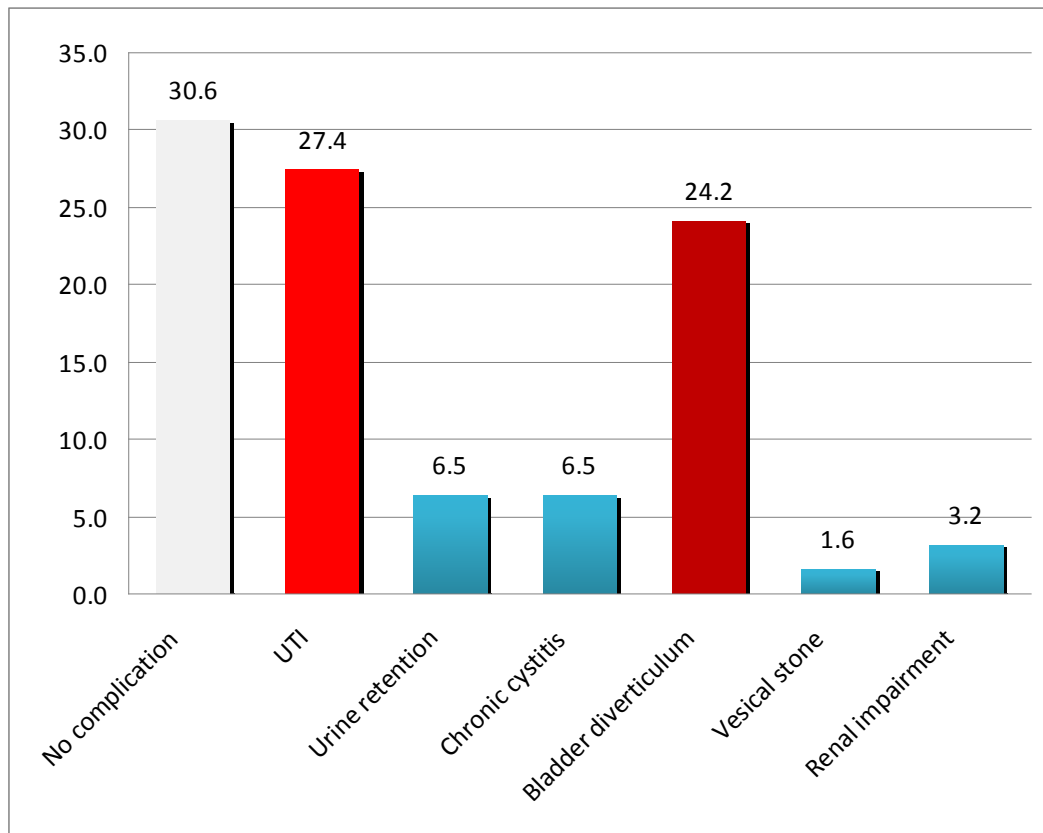


Figure 3 : Recurrence of urethral stricture in the control and treatment groups

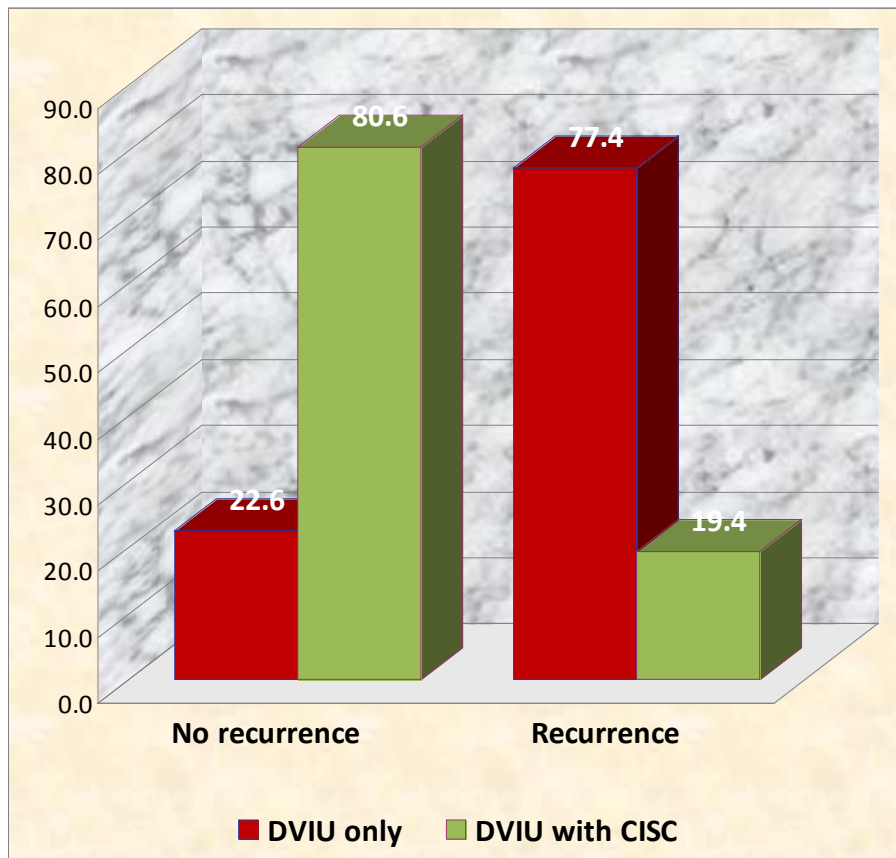
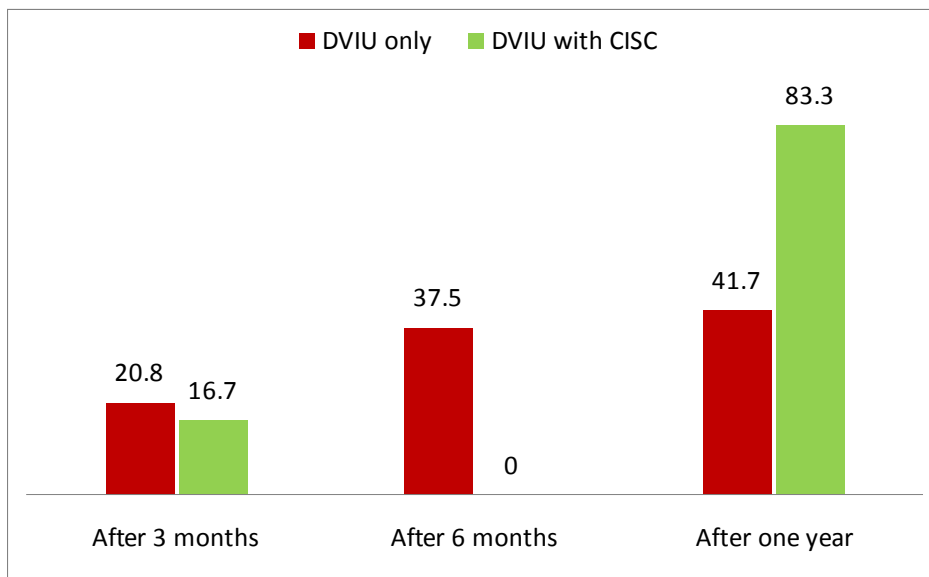


Figure 4 : Time of stricture recurrence during period of follow up



## V. DISCUSSION

Analysis of age in our study showed that 28 (45.5%) of these patients were aged between 31 to 50 years old, this mean that most of patients are middle age groups may be due to the etiology in which

gonorrhoea and urethritis were the most common cause of stricture. In our study gonorrhoea and urethritis were the most common cause of urethral stricture (38.7%) and this may be attributed to unprotected sexual practice or in complete ineffective treatment of

gonorrhoea. However study in Benin, Nigeria [8], showed that 55.9% of stricture disease traumatic in origin and this similar to that reported from developed countries [3,4]. This reflects that development is not without its drawbacks while underdevelopment has its own health implications. Bulbar urethral stricture is the most common site of stricture 35% followed by membranous one 13% and this may be related to the aetiology of stricture. In this study most of recurrence occurred in the control group A 24 (77.41%) patients in compare to six (19.35%) in the treatment group B P value < 0.005 this mean that clean self intermittent catheterisation significantly reduce the rate of stricture recurrence, similar result obtained from different studies[7,9,10,11,12,13] . In the first three months of follow-up five patients in the control group A had stricture recurrence in compare to one patient in the treatment group B, this mean that no significant difference in short term of use of self catheterisation. Our observation is similar to study by Bodker A, etal [12]. By the end of six months of follow-up the total number of recurrence in the control group A is 14 in compare to one in the treatment group B. At end of follow-up at one year the overall recurrence in the control group A is 24 out of 31 and six out of 31 in the treatment group B P value < 0.005. This high rate of recurrence compare to international literature may be due to careful assessment of patients using history ascending urethrogram as an imaging to confirm urethral stricture recurrence. Most of recurrence in the control group A occurred in the first six months of Follow-up 14 (58.3%) patients in compare to only 16.7% in the treatment group B while most of recurrence in the treatment group B occurred in the next six months of follow-up 83.3%.this mean that the disease free interval is better in patients treated with clean self intermittent catheterisation[11].

In our study four patients in the control group A developed urinary tract infection all of them were positive for E.coli while in the treatment group B patients three patients had urinary tract infections and only one patient developed epididymo-orchitis, of those with urinary tract infections two were positive for Ecoli and one patient was positive for Klebsiella. No urethral bleeding or pain reported in patients on self catheterization so no difference in the two groups [14,15], this reflect that clean intermittent self catheterisation is simple, safe and easy to perform procedure with good patients compliance associated with minimal morbidity, this may be attributed to good education of all patient involved in clean intermittent self catheterization, good patients compliance, quality of catheter and proper application of good catheterisation technique.

## VI. CONCLUSION

Urethral stricture is the major health urological problem among male middle age group of patients

associated with much morbidity, direct visual internal urethrotomy in spite of short effective out come, minimally invasive, with avoidance of false passage associated with high rate of recurrence. Perform of Clean intermittent self catheterization for three months following direct visual internal urethrotomy is an effective method to reduce rate of urethral stricture recurrence.

Clean self intermittent catheterization easy, acceptable procedure by the patients, less invasive and associated with minimal morbidity.

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