

1 The Role Clean Self Intermittent Catheterization Following 2 Direct Vision Internal Urethrotomy in Reduction of Recurrence 3 of Urethral Stricture

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8 **Abstract**

9 Background : Urethral stricture is major health urological problem; urethral dilatation and
10 internal optical urethrotomy were the only treatment. Clean Self catheterization follow direct
11 visual internal urethrotomy has greatly decreased the recurrence of stricture. Objectives : To
12 investigate the effect of clean self intermittent catheterization on recurrence rate following
13 direct vision internal urethrotomy and to assess rate of complication of direct visual internal
14 urethrotomy (DVIU) alone versus DVIU with self catheterization. Patients and Methods :
15 This double blind case control study was conducted in Soba university hospital (SUH). A total
16 of sixty two patients were selected randomly in to treatment group B (31 patients) and control
17 group A (31 patients) all patients were treated with DVIU followed with indwelling catheter
18 for three days. The treatment group B was taught to perform self clean intermittent
19 catheterization by inserting size 16 Nelaton catheter daily for the first month then every other
20 day for the next month and once weekly for the last third month. All patients were followed
21 regularly at 3,6,12 months. Results : Twenty Four (77.41

22

23 **Index terms—**

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25 of Recurrence of Urethral Stricture Zahir Abdlegadir Mohamed Elhaj ? Mr. Adil Ibrahim ? & Professor Sharfi
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34 (31 patients) all patients were treated with DVIU followed with indwelling catheter for three days. The treatment
35 group B was taught to perform self clean intermittent catheterization by inserting size 16 Nelaton catheter daily
36 for the first month then every other day for the next month and once weekly for the last third month. All patients
37 were followed regularly at 3,6,12 months.

38 Results : Twenty Four (77.41%) out of 31 patients in control group A developed urethral stricture recurrence
39 while six (19.35%) patients in treatment group B had stricture recurrence ($p < 0.000$). In control group A 14
40 patients (58.3%) out 24 had their recurrence in the first six months of follow-up while five (83.3%) out of six
41 in group B had their recurrence in the next six months of follow-up. In control group A four patients developed
42 urinary tract infections all were positive for E.coli. In treatment group B urinary tract infections were found in

7 RESULTS

43 three patients, culture was positive for E.coli in two patients and Klebsiella for the third one, and one patient
44 developed epididymo-orchitis.

45 1 Conclusion :

46 Clean self intermittent catheterization is a simple, Introduction rethral stricture is common urological disorder and
47 its oldest disease known to mankind. Previously infections and gonorrhoea were the common causes of urethral
48 stricture [1,2]. In developed world, gonococcal strictures are rare and most strictures today are either iatrogenic
49 or idiopathic [3,4] transurethrally. Dilatation was often the first intervention chosen to deal with small urethral
50 stricture but long term results with dilatation have high failure rate. Direct vision internal urethrotomy, has
51 greatly improved the treatment of urethral strictures. This procedure is now the preferred method of treatment
52 of urethral strictures less than 1.5 cm in length and which are located in the bulbar or penile urethra.

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

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

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

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

60 2 II.

61 3 Patients And Methods

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

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

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

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

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

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

72 The group for CSIC performed the procedure CISC safely by well trained theatre attendant. The followup at
73 3, 6 and 12 th month. In each follow up the patient history of urinary stream, urine analysis and ascending

74 4 Data Collection

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

78 5 a) Study Duration

79 The study was conducted in the period from 2nd of July 2012 to 3 rd of December2013.

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

83 6 IV.

84 7 Results

85 A total of sixty two patients were included in the study 31 patients in treatment group B and 31 patients in
86 control group A. No drop-outs occurred apart of one patient in control group who was dead because of renal
87 failure but after he had a recurrence of urethral stricture. The mean age in control group A (52.3 ± 13.23) range
88 (28-79). In group B the mean age 47.03 ± 12.96 range (28-68). Incomplete bladder empty in 49 patients (79%)
89 and poor stream in 48 patients (77.4%) were the most common presentation followed by terminal dribbling in 34
90 patients (54.8%), hesitancy in 27 patients (43.5%) and urine retention in eight (12.9%) of all patients with urethral
91 stricture . The most common etiology of urethral stricture were infections and gonorrhea in 24 patients (38.7%)
92 followed by idiopathic in 14 patients (22.6%), instrumentation in eight patients (12.9%), post prostatectomy in
93 10 patients (16.1%), trauma a cause of urethral stricture in five patients (8.1%) while surgery for hypospadias
94 being the least common cause in one patient (1.6%) (figure ??). Concerning site of strictures bulbar stricture
95 was the commonest one found in 35 patients (56.5%) followed by membranous in 13 patients (21%), prostatic
96 in 11 patients (17.7%) and penile stricture least one in three patients (4.8%) (figure3). Most of patients had
97 complications related to urethral stricture 43 patients (69.4%), of these 17 patients (39.5%) had urinary tract

98 infections, 15 patients (34.9%) had bladder diverticulum, chronic cystitis and urine retention in four patients
99 (9.3%) for each, renal impairment in two patients (4.7%) and vesical stone in only one patient (2.3%) (figure ??).
100 The result showed 24 patients (77.41) had recurrence of stricture in control group A and six patients (19.35%)
101 had a re (figure ??). At the end of the first three month of follow-up five patients (20.8%) in the control group
102 A had urethral stricture recurrence in compare to one patient (16.7%) had recurrence in the treatment group B.
103 At the end of six month of follow-up nine patients (37.5%) in the control group A developed recurrence while no
104 patient (0.0%) in the treatment group B had stricture recurrence. By the end of follow-up at one year ten patients
105 (41.7%) in the control group A had recurrence of urethral stricture while five patients (83.3%) had recurrence in
106 treatment group B (figure ??).

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

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

112 8 Discussion

113 Analysis of age in our study showed that 28 (45.5%) of these patients were aged between 31 to 50 years old, this
114 mean that most of patients are middle age groups may be due to the etiology in which gonorrhoea and urethritis
115 were the most common cause of stricture. In our study gonorrhoea and urethritis were the most common cause
116 of urethral stricture (38.7%) and this may be attributed to unprotected sexual practice or in complete ineffective
117 treatment of showed that 55.9% of stricture disease traumatic in origin and this similar to that reported from
118 developed countries [3,4]. This reflects that development is not without its drawbacks while underdevelopment
119 has its own health implications. Bulbar urethral stricture is the most common site of stricture 35% followed by
120 membranous one 13% and this may be related to the aetiology of stricture. In this study most of recurrence
121 occurred in the control group A 24 (77.41%) patients in compare to six (19.35%) in the treatment group B P value
122 < 0.005 this mean that clean self intermittent catheterisation significantly reduce the rate of stricture recurrence,
123 similar result obtained from different studies [7,9,10,11, ??2,13]. In the first three months of follow-up five
124 patients in the control group A had stricture recurrence in compare to one patient in the treatment group B, this
125 mean that no significant difference in short term of use of self catheterisation.

126 Our observation is similar to study by Bodker A, etal ??12]. By the end of six months of follow-up the
127 total number of recurrence in the control group A is 14 in compare to one in the treatment group B. At end
128 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
129 treatment group B P value < 0.005. This high rate of recurrence compare to international literature may be due
130 to careful assessment of patients using history ascending urethrogram as an imaging to confirm urethral stricture
131 recurrence. Most of recurrence in the control group A occurred in the first six months of Follow-up 14 (58.3%)
132 patients in compare to only 16.7% in the treatment group B while most of recurrence in the treatment group B
133 occurred in the next six months of follow-up 83.3%.this mean that the disease free interval is better in patients
134 treated with clean self intermittent catheterisation [11].

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

143 9 VI.

144 10 Conclusion

145 Urethral stricture is the major health urological problem among male middle age group of patients associated
146 with much morbidity, direct visual internal urethrotomy in spite of short effective out come, minimally invasive,
147 with avoidance of false passage associated with high rate of recurrence. Perform of Clean intermittent self
148 catheterization for three months following direct visual internal urethrotomy is an effective method to reduce
149 rate of urethral stricture recurrence.



Figure 1:

150 Clean self intermittent catheterization is an easy, acceptable procedure by the patients, less invasive and
151 associated with minimal morbidity. ^{1 2 3 4 5 6 7}

¹safe, cost effective and easy to perform procedure for prevention of urethral stricture with good acceptability, compliance, better outcome and with few complications. I.

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