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Original Research

Internal Urethrotomy for Anterior Urethral Strictures, its Place in the Current Management of Stricture Disease and Role of C.S.I.C in Prevention of Recurrence

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ABSTRACT

Background: Simple urethral dilatation (sequential) and, DVIU have been used for long time for the ease and simplicity of the procedure and low morbidity for anterior Urethral strictures (Bulbar and Penile). The present study was done to assess the role of DVIU (Direct Vision Internal Urethrotomy). Its success and failure including recurrence of stricture disease and role of Clean Self-Intermittent Catheterization (CSIC) following DVIU. **Materials and Methods:** The present study was done on 265 patients, between 2014 to 2019, retrospective uncontrolled study at Balrampur Hospital, Lucknow. Characteristics such as cause, location, length of stricture, recurrent stricture disease free period following repeat DVIU were recorded. USG, RGU/MCU, Cystourethroscopy apart from AUA symptom index and PROM (Patient reported outcome measure.) were taken into consideration Role of CSIC was evaluated. **Results**: Out of 266 patients of anterior urethral stricture who underwent DVIU overall success rate (one year follow up) was 54%, short bulbar stricture less than 2cm gave best results with recurrence rate of only 25%. We could find identifiable cause only in 122 out of 266 patients, hence maximum being idiopathic 54.1% (144 patients) followed by Inflammatory 19.5% (52 patients). Success rate was best in inflammatory strictures 74% followed by Idiopathic stricture 55% and worst prognosis was that for recurrent strictures 28%. CSIC improves the outcome significantly with success rate of 73% in pts practicing CSIC as compared to 27% for those who were inconsistent or defaulted. **Conclusion:** DVIU is best for short bulbar stricture and has poor outcome for recurrent strctures. CSIC enhances success rate significantly.

Key words: Anterior urethral stricture, Direct Vision Internal Urethrotomy (DVIU), RGU (RETROGRADE URETHROGRAM), MCU (Micturoting Cystourethrogram), CSIC (Clean Self Intermittent Catheterization)

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INTRODUCTION:

DVIU was popularized after the initial report of Sachse in 1972. Original description of Urethral dilatation for Urethral Stricture disease has been described in "Susruta Samahita". Male Urethral stricture is a challenge for the medical fraternity ad is best referred to your best friend. Urethral dilatation and Internal Urethrotomy are very popular for the simplicity of the procedure inspite of their not so encouraging long term results. Urethroplasty is the answer after failure of DVIU.[1-3]

In 1980, concept of Clean Self Intermittent Catheterizahon (CSIC) following DVIU emerged. The

present study was conducted to assess the role of Internal Urethrotomy in the management of Anterior Urethral Stricture disease and place of SIC in furthering the prospects of better success rate following DIVU.

Aim and Objectives: To evaluate the role of DVIU and SIC following DVIU in Anterior Urethral Stricture disease.

Materials and Methods: Present study was undertaken by the department of Urology, Balrampur Hospital, Lucknow, conducted on 266 male patients, aged between 20years to 70years from 2014 to 2019. It was a retrospective uncontrolled study.

Inclusion criteria

- Male patients aged between 20 to 70 yrs.
- Patients suffering from LUTS especially obstruction to urinary flow or thinning of Urinary stream.
- Patients with Anterior Urethral stricture (Pendular and Bulbar)

Exclusion Criteria

- Recurrence of stricture following repeat urethrotomy for recurrence ie. recurrence after 2nd DVIU**.**
- Patients having Neurogenic bladder dysfunction
- Patients having prostate enlargement, calculus or raised PSA.
- Patients with Posterior Urethral Stricture.
- Hypertensive patients not controlled by medication.
- Patients with bleeding diathesis.

History and General Examination was done. Complete physical examination was done in all patients, Urethral Calibration, Uroflometry, Cystourethroscopy, Urethrographic Studies (RGU, MCU) were done along with Clinical assessment and symptoms scoring (AUA). Outcome assessment for follow up patients was done including USG for PVR, 2 week after removal of catheter and RGU done 3 monts after DVIU.

Techniques: We follow sachse technique. Patient is put under spinal anesthesia and optical urethrotome is introduced, guide wire is passed and following its lead, we make a cut at 12 O'clock position by sache's cold knife all along stricture length and bladder is entered. Guide wire is retained and no 16 All silicone catheter is introduced for 2 weeks. Catheter is removed after 2 weeks and patient is trained to do CSIC with xylocaine jelly.

We used the following protocol for SIC-

- Once a day for one month.
- Twice a week from second month onwards.
- Once a week from 3rd month onwards.

RESULTS

The study was conducted on 266 males; aged between 20 yrs to 70 yrs. Stricture recurrence rate was directly proportional to stricture length. The strictures less than 2 cms had a recurrence rate of 25 % and those above 2 cms had a recurrence rate of 60% for a follow up period of one year. Of these 266 patients, 40% were bulbar strictures, 32 % penile and 28% mixed (Penile + Bulbar)
Recurrence rate for Bulbar Strictures was 40% i.e. 42 patients out of 106 patients, 82% i.e. 70 patients out of 85 patients for penile and 78 % i.e. 59 patients out of 75 patients for Bulbo penile strictures.
Etiology wise, out of 266 patients we had 32 iatrogenic i.e. 12%, 52 inflammatory i.e. 19.5%, 20 traumatic i.e. 7.5%, 18 recurrent i.e. 6.8%, and idiopathic 144 i.e. 54.1%.
Etiology wise success rate over a period of one year follow up of all 266 patients was, for (1) Iatrogenic 44% i.e. 14 out of 32 patients, (2) Inflammatory 74% i.e. 38 out of 52 patients, (3) Traumatic 35% i.e. 7 out of 20 patients, (4) Recurrent 28% i.e. 5 out of 18 patients and, (5) Idiopathic 55% i.e. 79 out of 144 patients.
Overall result over a period of one year follow up showed success in 143 out of 266 patients i.e. 54% and we encountered failure in 123 cases i.e. 46%.
Thus in our study we found that inflammatory and idiopathic strictures had a much better prognosis and success rate as compared to iatrogenic, traumatic and recurrent strictures.
Results show low rate of recurrence in CSIC group VS non CSIC group (as per our protocol).
In our study, we advised CSIC to all patients after catheter removal as per our protocol and we found that recurrence rate of stricture during one year of follow up was 27% for those who practiced CSIC and 73% for those who defaulted CSIC. Thus there is significant difference in ultimate outcome of favourable results in CSIC patient as compared to those who defaulted on CSIC.
Outcome assessment for follow up was done based on Urethral Calibration, Uroflowmetry (Peak flow rate of <15 Ml/sec Can diagnose stricture recurrence), Urethrograptic studies (RGU/MCU) Cystourethroscopy, Clinical assessment and symptom scoring (AUA).

DISCUSSION

DVIU has been very popular over years for anterior urethral stricture disease for the Simplicity and ease of operation and its being minimally invasive in nature.

Case selection is very important for ultimate long term success. After this study in 266 cases we concluded that it's best done for soft and short strictures confined to anterior urethra esp. bulbar Urethra (Less than 2 cm in length), DVIU gives poor result for recurrent strictures and success rate increases significantly if the patient follows prescribed "Clean self Intermittent Catheterization' schedule (CSIC).

Stricture patients present with a myriad of complaints including LUTS, (obstruction with voiding Problem) irritative symptoms or with complications such as UTI, Prostatitis, epididymorchitis or even with renal failure. Diagnosis is confirmed by urethral calibration, urethral lmaging (RGU /MCU) for delineation of length and location of stricture, uroflometry, cystourethroscopy. Now a days use of sonourethrogram to assess the degree of spongiofibrosis and urethral MRI is being used.

In the present study of 266 males, aged between 20 to 70 years retrospective study conducted in our Hospital between 2014 to 2019, we found that DVIU overall showed success rate of 54% (143 out of 266 patients), over a follow up period of one year and failure rate was 46% (123 out of 266 patients) in 266 patients of anterior urethral strictures. Idiopathic and Iatrogenic strictures gave the best results for 55% and 44% respectively. The results in recurrent strictures and traumatic strictures were the worst after one year follow up, with success rate of 28% and 35%v respectively, or in terms of failure we can sasy 72% and 65 % respectively. The strictures less than 2 cms had a recurrence rate of 25% as compared to 60% for strictures over 2 cms. Recurrence rate (one year follow up) was least for Bulbar (40%) and worst for penile (82%) CSIC certainly improved the outcome, over a period of one year follow up, 27% for those who practices CSIC against 73% for those who defaulted.

Table 1: Total 266 patients (Etiology wise success/failure rate)

Etiology	Number of Patients	Successful results	Failure Results
Iatrogenic	32	14 (44%)	18 (56%)
Inflammatory	52	38 (74%)	14 (26%)
Traumatic	20	7(35%)	13 (65%)
Recurrent	18	5(28%)	13 (72%)
Idiopathic	144	79 (55%)	65 (45%)
TOTAL	266	143 (54%)	123 (46%)

CONCLUSION

DVIU is a good modality of treatment for short & soft bulbar strictures less than 2 cms in length and with lesser amount of spongiofibrosis i.e lumen diameter not markedly reduced. Role of DVIU in cases of recurrence is very limited and outcome is poor. There is no role of repeat DVIU (2^{nd} time) after recurrence i.e. no role of second DVIU after a repeat Urethrotomy. CSIC as per protocol following DVIU, if practiced property gives a much better rate of success than patients who don't follow the protocol or are defaulters.

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