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Original Research Article

To compare the effect of various interventional methods such as open versus closed methods (endoscopic methods/ urethral dilatation) and their respective outcomes in stricture urtethra patient.

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Abstract:

Introduction-The urethra becomes narrower in the Urethral Stricture. It is caused due to inflammation. It may be asymptomatic in some cases, while it shows concerning symptoms too in many cases. There may arise problems associated with urination. Those problems include pain while urinating and slowing of the urine stream than normal. When it is left untreated or delayed treatment is done it may lead to complications like damage to the kidneys and bladder and infertility.

In this study, we have evaluated the causes, anatomical locations, clinical and radiological presentation, and compared the outcomes of various management methods available for anterior urethral strictures, such as:

- Urethral dilatation
- Internal urethrotomy
- Urethral stents (not included in present study)
- Open reconstruction

In patients undergoing these above mentioned treatment procedures, the commonest complication seen in clinical practice is stricture recurrence.

Methods: This study was conducted on 50 consecutive patients diagnosed with urethral stricture attending the Outpatient department and getting admitted to Department of surgery, J.A. Group of hospitals, Gwalior during the period of September 2020-September 2021

Result: -Closed methods (78%) were preferred to open methods, considering the length of strictures and owing to COVID - 19 pandemic situation, with internal urethrotomy being the most frequently used method.Short segment strictures were more frequently seen during the course of this study, as 86% of patients had stricture length less than 2cms.

Conclusion: Anterior urethral stricture disease is one of the commonest complications of urethral injuries and has a substantial impact on quality of life resulting in infection, bladder calculi, fistulas, sepsis and ultimately renal failure.proper catheterisation was attempted under aseptic precaution.

KEY WORDS :- Stricture Urethra, Lichen planus sclerotica

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1. INTRODUCTION

The urethra is the small tube that carries urine from the bladder outside the body. The urethra is much longer in men since it runs the length of the penis. A urethral stricture is a narrowing of this tube that can occur anywhere from the bladder neck to the urethra opening. This narrowing can lead to serious urinary conditions if left untreated.While strictures can occur in both men and women, they are more common in men due to the length of the male urethra (approximately 10 inches long). When men develop a stricture along the first two inches of the posterior urethra, this is called a posterior stricture. The posterior urethra is located deeper inside the body around the area of the bladder neck (bladder opening) – a stretch that is typically one to two inches long. If the restriction is found past this point, it is called an anterior stricture. Strictures are typically caused by scarring, injury, inflammation or an infection that causes the urethra to narrow.

- Injury – A stricture can be caused by trauma to the penis, scrotum or pelvis. Men or women can also sustain a straddle injury between the thighs. This can be caused by any forceful impact between the legs.
- Medical injury – The urethra can be damaged when a scope or other instrument is inserted during an in-office medical procedure or surgery. It can also be damaged by intermittent or long-term catheter use.
- Treatment for urethral or prostate cancer may cause a urethral stricture.
- Sexually transmitted diseases such as Gonorrhea or Chlamydia
- Inflammations, infections and swelling – Infections such as Prostatitis and Urinary Tract Infections (UTIs)
- Radiation therapy to the pelvic area

In this study, we have evaluated the causes, anatomical locations, clinical and radiological presentation, and compared the outcomes of various management methods available for anterior urethral strictures, such as:

- Urethral dilatation
- Internal urethrotomy
- Urethral stents (not included in present study)
- Open reconstruction

In patients undergoing these above mentioned treatment procedures, the commonest complication seen in clinical practice is stricture recurrence. Various factors responsible for recurrence have been investigated in this study like age of the patient, length of the stricture, site of the stricture, etc. and whether outcomes improve over time or additional methods are required to correct stricture recurrence. Another debilitating problem faced by patients with urethral strictures is erectile dysfunction which has a serious impact on the quality of life, post-intervention methods for stricture urethra. We have tried to address the causes responsible, outcomes of various treatment protocols in current practice, complications associated with this disease and the results of the procedures underwent by the patients at our centre.

AIMS AND OBJECTIVES

To compare the effect of various interventional methods such as open versus closed methods (endoscopic methods/ urethral dilatation) and their respective outcomes in stricture urethra patient.

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2. MATERIAL AND METHODS

Sample Size- A minimum of 50 Patients
Type of study: Observational study (Prospective)
Source of data: Patients diagnosed with anterior urethral stricture attending the Outpatient department and getting admitted to Department of surgery, J.A. Group of hospitals, Gwalior.
Inclusion Criteria :
All patients of anterior urethral stricture between 15 – 75 years of age.
Combined anterior and posterior urethral strictures.
Participant or a family member must be willing to give written and informed consent.

Exclusion Criteria:
Patient of pure posterior urethral strictures.
Patients not giving written/informed consent.
The patients lost to follow up.
Female patients with disease under study.
Patients younger than 15 years and patients aged more than 75 year
STATISTICAL ANALYSIS
All Statistical calculations were done with the help of Chi–Square test with degree of significance <0.5% with SPSS software version 22.0
Results were tabulated and represented by suitable graphs and compared with other similar studies.

OBSERVATION & RESULTS
Following observations were made

Table 1: Types of interventional procedures performed

Type of intervention	Number of patients (n)	Percentage
Closed	39	78
Open	11	22

Of the total 50 patients who underwent this study, 39 patients underwent a closed interventional procedure, accounting for a majority of 78%, while 11 patients underwent open surgical procedures. (22%)

Closed methods included urethral dilatation, internal urethrotomy (optical internal urethrotomy / visual internal urethrotomy) while open surgeries include end-to-end anastomosis and Augementation/ Substitution urethroplasty using buccal mucosal graft in this present study.

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Table 2: Distribution of different interventional methods

Name of procedure performed	Number of patients (n)
Urethral endo-dilatation	7
Internal urethrotomy	39
End to end anastomosis (EEA)	10
Buccal mucosal graft (BMG)	1

Optical internal urethrotomy (OIU)[3] was the predominant method of intervention as 39 patients underwent the same, amounting to 78% of study subjects.

The next most commonly used method was end to end anastomotic urethroplasty in 10 patients (20%).

Urethral dilatation was the preferred method in 7 patients (14%) who came for follow-up.

Buccal mucosal graft was done in one patient (2%)

INTERVENTIONAL METHODS:

The majority of patients in this study underwent closed interventional methods as compared to open surgery. This can be explained by the fact that approximately 78% of patients in this study had only a short segment partial narrowing of urethra and were better suited for internal urethrotomy. This is consistent with the fact that Optical internal urethrotomy is being preferred by urologists worldwide for treatment of short segment bulbar urethral strictures, which was the overwhelming finding seen in patients enrolled in our study. Moreover, the number of open surgeries was greatly reduced due to COVID - 19 pandemic situation and temporary suspension of planned surgeries.

Optical internal urethrotomy (OIU) was performed in 39 patients (78%), while 22% of patients who had complete blockage of urethra, where guidewire could not be passed beyond the stricturous segment and patients with past history of OIU / endo-dilatation, who were not symptomatically relieved were identified as candidates for urethroplasty. Out of 22% patients who underwent open surgery, 20% patients underwent end – to – end anastomotic urethroplasty while 2% patients underwent buccal mucosal graft (augmentation) urethroplasty[1].

FOLLOW-UP AND OUTCOMES:

The patients were assessed at periodic intervals – on the 7th post-operative day, at 3 months, 6 months and at 1 year post intervention. The patients who underwent internal urethrotomy were advised removal of Foley's catheter after a period of 5-7 days, while patients who underwent urethroplasty were initially advised supra-pubic catheter (SPC) clamping with removal of per-urethral catheter (PUC) after 2 - 3 weeks and removal of SPC once patient voids satisfactorily.

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All patients were taught clean intermittent self-catheterisation (CISC) and were advised to self - dilate with 14fr Tiemann / K90 urethral catheter.

3. CONCLUSION

Urethral strictures are a significant cause of morbidity even today and affect the quality of life of patients.

The most common cause of anterior urethral strictures is a blunt force trauma to the perineum, although idiopathic strictures and iatrogenic factors are also significant causes. The present study also shows that urethral strictures are more prevalent in young adult males, who are prone to trauma.

There was a predominance of proximal and mid-bulbar strictures in this study as evidenced by radiological investigations and intra-operative findings.

The management of urethral strictures is continually evolving and no single strategy can be applied universally in all cases.The results of our study and other previous studies indicate that internal urethrotomy has emerged as the preferred method in short segment bulbar strictures in recent times, owing to the simplicity of the procedure and relatively low morbidity in comparison to open urethroplasty, although there are various limitations to the procedure.

Urethroplasty remains the gold standard procedure for treatment of urethral strictures due to less recurrence rates post-operatively as seen in our study and in other studies worldwide.

4. REFERENCE

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