

ORIGINAL ARTICLE

Urethrotomy and End-to-End Urethroplasty in Anterior Urethral Strictures upto 1.5cm

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Aim: To compare internal optical urethrotomy with end-to-end urethroplasty in treatment of anterior urethral stricture (<1.5cm) in terms of recurrence.

Study design: Cross-sectional Study.

Place and duration of study: Mayo hospital, department of urology. June 2016 to July 2018

Methodology: Only 80 patients (40 individuals in each class) were included in the study with nonprobability convenience sampling. Urethral stricture of the same length was treated by class-A and class-B, but with different methods. 3 months after the initial diagnosis, the recurrence rate was examined. SPSS-22 was used to enter and analyse the data.

Result: Patients' recurrences three months later indicated a significant difference ($P=0.002$) as a P value less than 0.05. A recurrence rate of 20% was found in class A end-to-end urethroplasty patients, whereas a stricture-free rate of 80% was found in the other 32. Stricture recurrence was seen in 52.5% of the patients in class B (internal optical urotomy), compared to 47.5% in class A.

Conclusion: A urethroplasty is the best therapy for urethral strictures of 1.5 cm or more, according to this research. For the most part, the fundamental distinction between the two procedures is that urethroplasty has a lower rate of repeat surgeries than that of the other procedure.

Keywords: Stricture urethra, Urethroplasty, Recurrence, Dilation, Urine obstruction,

INTRODUCTION

Urethral stricture is a medical term that describes any restriction of the urethra that has an effect on the passage of urine from the bladder. There is a significant incidence of stricture of the urethra; it affects between 0.6 and 1.4% of the male population at some point in their lives¹. There is a 3-4% prevalence of stricture urethra among males in Pakistan². The male urethra is composed of two distinct parts: the anterior and the posterior. The fossa navicularis, penile, and bulbar urethra make up the anterior section of the urethra. In the posterior region, you'll find both the membranous and the prostatic urethra. It is generally agreed upon that urethral strictures affect the anterior urethra, which is the portion of the urethra that is encompassed by the corpus spongiosum³.

The quality of life of family members can be negatively impacted, as can their mental, social, and physical health, when a member of the family suffers from a restrictive disease. Untreated patients with stricture often suffer from persistent infections and discomfort in the urethra, which can lead to more serious problems such as acute urine retention, detrusor myogenic failure, urethra-cutaneous fistulae, renal failure, sepsis, or sexual dysfunction⁴. Typically, a serial voiding antegrade and retrograde urethrogram is performed in order to determine the length of the urethral stricture as well as its level⁵.

Urinary dilatation, endoscopic urethrotomy, and open surgical repair are typically the therapy choices that are accessible to choose from. End-to-end urethroplasty and substitution urethroplasty are both types of procedures that are included in open surgical repair. Both end to end urethroplasty and internal optical urethrotomy have been the subject of debate because of their potential for complications and rates of recurrence⁶.

We evaluated the recurrence rate between internal optical urethrotomy and end to end urethroplasty in anterior urethral stricture up to 1.5cm with an acceptable sample size. This was done so that we could better understand why these findings were so diverse.

Aim of the study was to prove IOU has a high recurrence rate, we will investigate urethroplasty as a potential primary therapy option. If it is equivalent, then IOU is the option that will be taken.

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METHODOLOGY

After receiving clearance from KEMU's board of study and institutional review board After meeting the inclusion and exclusion criteria, patients who have been admitted to either class A (end to end urethroplasty) or class B (internal optical urethrotomy) will each have the opportunity to be recruited in the study.

In order to determine what caused the stricture, a detailed history of the patient's urinary symptoms, catheterization, instrumentation, UTI, and trauma will be collected. The preoperative complete blood count, renal function test, liver function test, and urine comprehensive examination are all part of the investigation process. Additionally, a retrograde urethrogram is performed to diagnose the condition and measure its severity. The length of the stricture will be determined based on the results of either open surgery or endoscopy.

RESULT

It was the goal of this study to compare internal optical urethrotomy with end-to-end urethroplasty in treatment of anterior urethral stricture (<1.5 cm) in terms of recurrence at KEMU Mayo Hospital Lahore, Pakistan. Patients from both classes were surveyed for information. SPSS was used to analyse the collected data. The following are the findings. 40 patients in class A (end to end urethroplasty) and postoperative complications such as wound infection, UTI, fistula development, recurrence of stricture within three months were included in this study. SPSS-22 class was used to do statistical analysis on the data gathered and recorded on the authorised proforma.

Data such as age were provided using the mean and standard deviation (SD). It was provided as a frequency and percentage of Gender. The chi-square test was used to compare the two classes (urethrotomy vs. urethroplasty), and a p-value of 0.05 was considered significant for class B's forty patients' results. 40 (internal optical urethrotomy).

The age ranges are 16-45, 31-45 and >45 years old, respectively. Patients in Class A ranged in age from 16 to 45 years old, with 37.5% of those in the 16-30 age range, 17.5% in the 31-45 age range, and 45% in the 45+ age range. 11(27.5%) of the patients in Class B were between the ages of 16 and 30 years; 11 (27.5%) of these patients were between the ages of 31 and 45

years; and 18(45%) were above the age of 45. More over half (P-0.471) of the patients were above the age of 45.

Class-wise distribution of patients in wound infection was not statistically significant p value (0.241). Only three patients (7.5% of patients in class A) reported having wound infection, while 37 patients (92.5% of patients in class B) said they had none. Only 0% of people in class B said yes, whereas 40 (100%) said no. Both classes' distribution of patients with urinary tract infections, when examined on a class-by-class basis, revealed no differences of note (P-0.712).

When asked if they were concerned about urinary tract infection, 5 patients (12.5%) in class A (end-to-end urethroplasty) said yes, whereas 35 others (87.5%) said no. There were 3(7.5%) affirmative answers and 37(92.5%) no answers from class B (internal optical urethroplasty). More over three-quarters (73%) of the total 80 patients in both classes opted out of participating in the study. Only 2(5%) of those in class A had a urethrocutaneous fistula, whereas 38 out of the 40 in class B did not.

There were no patients in class B who said yes, and there were 40 patients who said no. This was not statistically significant (P-0.494). 78 of the 80 patients who had fistula surgery responded "no" (97.5%). P value of 0.002 indicates a significant difference in patients' recurrence after three months. Class A had a recurrence rate of 20%, whereas class B had a recurrence rate of 8%. Patients in class A (End to End Urethroplasty) average 42.75 years old, whereas those in class B (Internal Optical Urethrotomy) average 44.07 years old. There is no substantial age difference between the two groups.

After surgery, there is a significant difference between the two therapy groups (P.000.05) in the length of time spent in the hospital. There is a 3.32 0.83 day average hospital stay in Class A (End to End Urethroplasty), and a 1.22 0.42 day average hospital stay in Class B (Internal Optical Urethrotomy).

Table 1: Details of the of age groups of all patients enrolled

Age groups	Group-A	Group-B	Total	P value
16-30 years	15(37.5%)	11(27.5%)	26(32.5%)	0.471 Pearson Chi Square
31-45 years	7(17.5%)	11(27.5%)	18(22.5%)	
>45 years	18(45%)	18(45%)	36(45%)	

Significant (p<0.05*, p<0.01**)

Table 2: Recurrence of condition after 3 months of treatment on follow up

Recurrence after 3 months	Group-A	Group-B	Total
Yes	8(20%)	21(52.5%)	29(36.3%)
No	32(80%)	19(47.5%)	51(63.7%)

P value 0.002*

*Pearson Chi Square

Significant (p<0.05*, p<0.01**)

DISCUSSION

Although urethroplasty is considered the gold standard by the majority of medical professionals, the surgical treatment of urethral stricture is still considered controversial. Some people believe that internal urethrotomy and even urethral dilations are viable therapy options that should be considered⁸. In cases of urethral stricture, some surgeons favour endoscopic urethrotomy, also known as internal optical urethrotomy, while others favour end to end urethroplasty for the same length of stricture. According to the findings of a survey carried out in the United States, around 70% of urologists believe it is necessary for their patients to have a second IOU (internal optical urethrotomy) procedure following a first recurrence⁹.

According to the findings of yet another study conducted in the UK, males who had had urethroplasty for stricture urethra had a history of having four urethrotomies in the past. In comparison to urethroplasty, the advantages of IOU include its simplicity of execution and short duration of hospitalisation¹⁰. The findings of the study conducted by Deepak Dubey demonstrated that the recurrence rate following IOU ranged from 28 to 51%, depending on the size of the stricture.

Another study conducted by Rasool and colleagues¹¹ came to the same conclusion, finding that the recurrence rate of anterior urethral stricture 11 was 21.67% after internal optical urethroplasty. IOU is not suggested as the therapy of choice for anterior urethral stricture because of the significant recurrence rate associated with it. Urethroplasty is an open treatment that requires competence and is associated with a higher risk of complications than IOU.

According to the findings of a research that was carried out by Suh et al., the recurrence rate following end to end urethroplasty for anterior urethral stricture was around 12.1%^{12,13}. There has been very little study done on this subject, thus our understanding of the circumstances that might result in urethroplasty failing is limited at best. Failure was characterised by the development of a new stricture or a fistula that required medical attention. The criteria of failure was quite open to interpretation, which may be one explanation for the disparities in results that were observed in studies discussing urethroplasty. A research indicated that individuals with a body mass index (BMI) of 25-35 were more likely to develop recurring strictures than those with a lower BMI.

When the length of the stricture is less than 1.5 cm, we propose urethroplasty as the first option, and we advocate urethroplasty if the length is longer than 1.5 cm or if the therapy fails, as it did with our patients who had to have urethroplasty after internal urethrotomy.

CONCLUSION

To cure urethral stricture of more than 1.5 cm, we found urethroplasty to be the most effective method of therapy. In terms of recurrence rates, the fundamental difference between urethroplasty and urethrotomy is that urethroplasty is less risky. An urethroplasty, in our opinion, would be the best course of action in this situation. While both procedures have their advantages and disadvantages, it's the recurrence rate that sets them apart. As a result, we have come to the conclusion and recommendation that urethroplasty is the optimal procedure.

Patients consent: All data were acquired legally and in accordance with the guidelines set out by Performa.

Conflict of interest: No competing interests.

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