Comparison of Recurrence Rate between Internal Optical Urethrotomy and End to End Urethroplasty in patients with Anterior Urethral Stricture upto 1.5cm

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ABSTRACT

Aim: To compare recurrence rate between internal optical urethrotomy and end to end urethroplasty in patients with anterior urethral stricture up to 1.5 cm.

Methodology: Comparative Cross-Sectional Study was conducted in Department of Urology, Mayo hospital during June 2016 to July 2018. Sample size of eighty patients (forty patients in each group A&B respectively) were estimated by using Nonprobability convenience sampling. Group A treated with End to End urethroplasty where group B Patients treated with IOU for same length of stricture. Recurrence rate was evaluated on follow up after 3 month. Data was collected and entered in SPSS-20.

Results: Recurrence after three months in patients showed significant difference as p value is (0.002) which is less than 0.5 also 0.1 % of level of significance. In group A i.e. end to end urethroplasty 8 (20.0 %) patients respond on yes and 32 (80.0 %) patients respond on no. Which indicate that less chance of recurrence in end to end urethroplasty. In group B i.e. internal optical urethrotomy 21 (52.5 %) patients respond on yes and 19 (47.5 %) patients respond on no. which indicates that the chance of recurrence is more in internal optical urethrotomy than end to end urethroplasty.

Conclusion: study concluded that urethroplasty is best for the treatment of urethral stricture up to 1.5 cm. In few cases the urethroplasty option may also be best in outcome after a subsequent urethroplasty. The main difference in urethroplasty and urethrotomy is the recurrence and the rate of recurrence is less in urethroplasty. So we conclude and proposed that urethroplasty is best option.

Keywords: stricture urethra, urethroplasty, recurrence.

INTRODUCTION

Urethral stricture is known as narrowing of urethra which affects the flow of urine from bladder. In Pakistan incidence of stricture urethra is 3 to 4% in male. Untreated stricture patient experience chronic infections and urethral pain, may develop more severe complications of acute urinary retention, detrusor myogenic failure, urethrocutaneous fistulae, renal failure, or sepsis and sexual dysfunction. Urethral stricture has usually established by antegrade and retrograde urethrogram. Available treatment options are urinary diversion, dilatation, endoscopic urethrotomy and open surgical repair. In urethral stricture some surgeon preferred internal optical urethroscopy (Endoscopic Urethrotomy) where as some prefer end to end urethroplasty for the same length of stricture up to 1.5cm with appropriate sample size.

Untreated stricture patient experience chronic infections and urethral pain, may develop more severe complications of acute urinary retention, detrusor myogenic failure, urethrocutaneous fistulae, renal failure, or sepsis and sexual dysfunction. Urethral stricture has usually established by serial voiding anterograde and retrograde urethrogram.

Usually available treatment options are dilatation, endoscopic urethromy, open surgical repair and urinary diversion. Open surgical repair include end to end urethroplasty and substitution urethroplasty. In urethral stricture some surgeon preferred internal optical urethrotomy (Endoscopic Urethrotomy) where as some prefer end to end urethroplasty for the same length of stricture.

Recurrence rate of internal optical urethrotomy is high as a result this leads to multiple hospital admission, repeated use of hospital resources and skilled manpower for the same patient. This is the burden to the hospital and ultimately to the whole nation in terms of economy. There are controversies regarding recurrence rate and complication of end to end urethroplasty and internal optical urethrotomy.

In this study the recurrence rate between internal optical urethrotomy and end to end urethroplasty in anterior urethral stricture up to 1.5 cm with appropriate sample size was done. If the recurrence rate of IOU will be high in our study, we considered urethroplasty as first line treatment.

MATERIALS AND METHODS

Comparative Cross-Sectional Study design was selected. Sample size of 80 patients (40 patients in each
Internal Optical Urethrotomy and End to End Urethroplasty

group) is estimated by using 1% level of significance, 90% power of test with expected % age urethroplasty as 47.8% and urethrotomy as 86.4%[1] in Mayo Hospital, KEMU, Lahore. Patients of age > 16 years male, with a diagnosis of primary or recurrent anterior urethral stricture up to 1.5 cm length were selected. Posterior urethral stricture, Co-morbidities as hypertension and diabetes mellitus. Patients with coexistent benign prostatic hyperplasia and patients with coexistent neurogenic bladder were excluded. Detail history of urinary symptoms, catheterization, instrumentation, UTI, trauma was taken to obtain the cause of stricture. Investigations included preoperative complete blood count, renal function test, liver function test and urine complete examination, retrograde urethrogram for diagnosis and length of stricture. Length of stricture was confirmed on open surgical or endoscopic findings. Other parameters of study were, hospital stay, postoperative complication such as wound infection, UTI, fistula formation, recurrence of stricture within three months. Quantitative variable like age was presented as mean ± SD. Qualitative variables like gender was presented as frequency & percentages. For difference in two groups (urethroplasty and urethroplasty) chi-square was applied; p-value ≤ 0.05 was taken as significant.

RESULTS

This study was conducted to compare recurrence rate between internal optical urethrotomy and end to end urethroplasty in patients with anterior urethral stricture up to 1.5 cm at KEMU Mayo Hospital Lahore with aim that recurrence rate of end to end urethroplasty is less than internal optical urethrotomy. Data was collected from patients of the two groups. Collected data was analysed by using SPSS the results are as follows.

Group wise distribution of age groups in patients are as total patients of our study was 80. 40 in group A (end to end urethroplasty) and 40 in group B (internal optical urethrotomy). The defined age groups are 16-30, 31-45 and >45 years. From Group A 15(37.5%) patients belonged to 16-30 years age group, 7(17.5%) patients are belongs to 31-45 years age group and 18 (45%) patients are from > 45 years age group.

From Group B 11(27.5%) patients belonged to 16-30 years age group, 11(27.5%) patients belonged to 31-45 years age group and 18(45%) patients were from > 45 years age group. Most of the patients were from > 45 years age group. The p value (0.471) shows not significant difference in age groups.

In wound infection group wise distribution of patients not showed significant difference p value (0.241). When asked about wound infection from patients of both groups A and B only 3(7.5%) from group A respond on yes and 37 (92.5%) respond on no. In group B 0% respond on yes and 40(100%) respond on no.

Group wise distribution of patients of both group in urinary tract infection also showed no significant difference p value is (0.712). In group A (end to end urethroplasty) 5(12.5%) respond on yes and 35(87.5%) respond on no when asked about urinary tract infection. Similarly when asked from group B (internal optical urethroplasty) 3(7.5%) respond on yes and 37 (92.5%) respond on no. From total 80 patients of both groups 72(90%) respond on no.

Urethrocutaneous fistula from both study group just 2(5%) from group A respond yes and 38 (95.0%) respond on no. Similarly from group B 0 patients respond yes and 40 (100%) respond on no. There is also no significant difference in both group p value (0.494). From total 80 patients 78 (97.5%) respond on no after operation on fistula.

Recurrence after three months in patients showed significant difference as p value is 0.002. In group A, 8 patients (20%) presented with recurrence and 32 patients (80%) presented without recurrence. Which indicate that less chance of recurrence in end to end urethroplasty.

In group B, 21 patients (52.5%) presented with recurrence and 19 patients (47.5%) presented without recurrence. Which indicates that the chance of recurrence is more in internal optical urethrotomy than end to end urethroplasty. These results also support the objectives of our study that recurrence rate is less in end to end urethroplasty than internal optical urethroplasty in the treatment of urethral stricture up to 1.5 cm.

The mean age of group-A patients (End to End Urethroplasty) is 42.75 ± 17.15 and the mean age of group B (Internal Optical Urethroplasty) is 44.07 ± 17.15. There is no significant difference in both groups according to age. In hospital stay after operation in both treatment group there is significant difference p value is less than alpha i.e. 0.000 < 0.05, 0.01. In Group-A (End to End Urethroplasty) the mean of stay in hospital is 3.32 ± 0.83 days and in group B (Internal Optical Urethroplasty) the mean of stay in hospital is 1.22 ± 0.42 days.
DISCUSSION

The results got in our assessment make us favor urethroplasty as the hidden treatment when the length of the injury is 1.5 centimeters, and we positively recommend urethroplasty if the length is more conspicuous than 3 cm or in circumstances where inside urethrotomy isn’t appeared and treatment dissatisfaction occurs as it was found in our patients who therefore expected to encounter urethroplasty. Male urethral injury happens at a pace of 0.6–1.9% and is ensnared in excess of 5,000 inpatient visits every year in the United States. Notwithstanding the high disappointment rates related with DVIU and urethral enlargement, they remain the most generally performed strategies for the treatment of urethral injuries. Hugh reappearance rate later DVIU, upto 100%, liable on the amount of recurrences, also after enduring follow up. In this manner, urethroplasty strategies have developed throughout the decades and now have an a lot higher achievement rate than DVIU, despite the fact that, a few
repeats exist [10]. In this examination, we broke down the recurrence of repeat and explained the kind of re-mediation that would give the best result, as pertinent rules are missing [11].

Data gathering of patients was comparatively informal, as it’s like review of retrospective chart. Be that as it may, to introduce the discoveries openly was troublesome because of the heterogeneous nature and decent variety of the information. An outline of this is when patients had experienced one up to seven re-interventions, for instance three DVI, one EA and one SU and winding up with a PU. Such subject get further complex by the reason that entire patients had these re-interventions in exceptional blends. Standard shifts in the surgical dealings of bulbar strictures, beginning internal urethrotomy towards open urethroplasty, is the recent gold-standard treatment designed for urethral strictures. When designing this research, there was some argument about optimal urethrotomy technique as well as most advantageous procedure for evading sexual dysfunction, yet, there are still discussions about the best technique. However, pretreatment with urethrotomy does not influence the subsequent results after performing urethroplasty [12] and may thus be an initially less invasive treatment, based on the surgical risks and patient preferences. However, we must emphasize that over the years, the results of urethrotomy have been worse than those of urethroplasty [13,14]. In the current series of patients with long-term follow-up, we found a low degree of sexual function. While other studies have reported ED in 1–40% of patients [15,16]. In any case, this result relies upon when the patients are addressed with respect to sexual brokenness. All things considered, one ought to consistently illuminate the patient pre-operatively that sexual brokenness may show up as an entanglement. One restricting component is that we didn’t utilize approved polls for estimating the sexual capacity [17]. In our examination, the most utilized strategy was urethroplasty with start to finish anastomosis. Conversely with the discoveries saw by different creators [17], the nearness of associative sickenesses, for example, diabetes mellitus, smoking or cardiovascular malady, had no impact on the outcomes got after treatment, in spite of the fact that the short development and modest number of patients with these pathologies can impact these outcomes. Generally speaking, performing urethroplasty either by start to finish anastomosis or by join or fold situation has a triumph pace of 85% to 95% [17,18]. Careful treatment disappointment after urethroplasty might be identified with early bladder catheter expulsion or exorbitant fibrosis after the medical procedure [19].

CONCLUSION
As this study was conducted to compare recurrence rate between internal optical urethrotomy and end to end urethroplasty in patients with anterior urethral stricture up to 1.5 cm at KEMU Mayo Hospital Lahore with aim that recurrence rate of end to end urethroplasty is less then internal optical urethrotomy. We concluded that urethroplasty is best for the treatment of urethral stricture greater than 1.5 cm. In few cases the urethrotomy option may also be best in outcome after a subsequent urethroplasty. The main difference in urethroplasty and urethrotomy is the recurrence and the rate of recurrence is less in urethroplasty. So, we conclude and proposed that urethroplasty is best option.

REFERENCES