ORIGINAL ARTICLE

End to End Urethroplasty in Bulbar Stricture: Long Term Results

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ABSTRACT

Background: Urethral Stricture (US) is a lifelong disease with high morbidity. Bulbar Urethra is most common site for the stricture. Trauma, STDs, repeated UTI, instrumentation and rarely the malignancy are the causes of US. The hallmark of US is weak stream. Antegrade/retrograde urethrogram are done for diagnosis and treatment. Most commonly used treatment options are urethral dilatation, IOU, laser urethrotomies and self intermittent dilatation.

Aim: To assess the long term outcome of end to end bulbar urethroplasty.

Methods: 150 patients were included in our study treated between Jan-2011 to Dec-2015. Preoperative urethrogram was done routinely. Patients who were treated previously by end to end urethroplasty were not included in the study. Operation was performed under GA with patient in extended lithotomy position. The urethra was dissected, the fibrosed narrow part excised and ends were spatulated and four detached sutures with 4/0 vicryl at 3,,6,9 and 12'oclock position were applied over 16Fr foleys catheter. The catheter was retained for four weeks. Cathether was removed when there was no extravasation on pericatheter urethrogram. If extravasation is present then catheter is retained for two more weeks. Wound closed in layers. The patients were followed at 3rd, 6th and 12th months post operatively.

Results: Mean age was 29.8 (Range 18 to 70). Mean stricture length was 15mm (Range 5 to 30 mm). Mean operation time was 95 minutes (Range 90 to 175 minutes). The stay was 5+/- 3 days. 83 patients (55.3%) had stricture due to trauma including iatrogenic, 67 patients (44.6%) had stricture due to other causes. 117 patients (78%) were symptoms free at last follow up. 25 patients (16.6%) needed IOU at first or second follow up and were considered as cured. 7 patients (4.6%) needed augmentation Urethroplasty. 7 patients (4.6%) required one pint of blood transfusion. 9 patients (6%) had minor wound infection treated by sitz bath and antibiotic according to culture and sensitivity. Out of 150 patients, 143(95.3%) were symptoms free at last follow up and were considered as cured. Out of 25 patients who required one or two sessions of IOU post operatively, 17 patients (68%) were those whose stricture was non traumatic in origin.

Conclusion: End to end urethroplasty is treatment of choice in short bulbar stricture with cure rate near to 95%.

Keywords: Urethral Stricture, IOU, Internal Optical Urethrotomy, Direct Visual Internal Urethrotomy.

INTRODUCTION

Urethral stricture (US) is a scaring in or around the urethra that narrows or blocks the passage of urine. A urethral stricture is narrowing of urethra caused by injury, instrumentation, infection and certain non infective lesions[1]. A US is a scar in subepithelial tissue of corpus spongiosum which constricts the lumen of urethra. Since it is only anterior urethra surrounded by corpus spongiosum, so by consensus, US are said only to affect anterior urethra. A narrow caliber of posterior urethra is termed as stenosis[2]. Pelvic fractures, catheter insertion, surgery on prostate, treated untreated UTI, STD and rarely a tumor are other causes of US[3]. US is a lifelong disease, more common in male than female as male has longer urethra. Signs and symptoms are, slowing of urinary stream sudden or gradual, spraying of urinary stream, pain on urination, episodes of acute or chronic retention of urine, blood stained discharge from penis, pain hypogastriun, and CKD due to obstructive uropathy. Tha hallmark of US is weak sream. complications of US are, urinary retention, prostatitis, periurethral abscess, urethral fistulae, recurrent UTI, urethral diverticulum, urinary calculi, B/L hydronephrosis, CKD & Fournier's gangrene[4]. Diagnosis is by history, examination, ante/ retro grade urethrogram and cystoscopy. Treatment options most commonly used are urethral dilatation, IOU, laser urethrotomies and self intermitent dilatation. However these approaches are associated with low success rate and may worsens the stricture, making future attempts to repair the urethra surgically more difficult. Most common site for US is bulbar urethra and this part lies under the scrotum, the

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perineal area. Bulbar urethra is not well protected so more prone to straddling trauma. After the trauma urethra is crushed against the bone[5].

PATIENTS AND METHOD

The study was conducted at the department of urology Jinnah Hospital Lahore. 150 Patients were included in the study treated between Jan-2011 to Dec. 2015. Patients who were treated previously by end to end urethroplasty or augmentation urethroplasty were not included in the study. The patients who underwent one or two sessions of IOU were included in the study. Detailed history and examination was performed. Informed consent was taken. Routine investigation were done. Preoperative urethrogram was done routinely. The procedure explained to patients in detail. The operation performed under GA with patient in extended lithotomy position. Midline perineal incision made, skin, sub cutaneous tissue and perineal muscle cut. The urethra dissected and mobilized fully. The fibrosed narrow part of the urethra excised, the ends were spatulated. Four detached suture with 4/0 vicryl at 3,6,9 and 12 o clock position were applied over a 16 Fr Foleys catheter. The wound closed in layers over a suction drain. The catheter was retained for 4 weeks. The patients were followed at 3rd, 6th and 12th month postoperatively.

RESULTS

One hundred and fifty patients were included in the study according to the inclusion criteria. 83 patients (55.3%) had stricture due to trauma including iatrogenic. 67 patients (44.6%) had stricture due to other causes. Mean age was 29.8 (range 18-70 years). Mean stricture length was 15mm (range 5 to 30 mm). The mean operating time was 95 minutes (range 90-175 minutes). The hospital stay was 5+/-3 days. 117 patients (78%) were symptoms free at last follow up. 25 patients (16.6%) needed IOU at first or second follow up and they were symptoms free at last follow up so were considered as cured. 7 patients (4.6%) needed augmentation urethroplasty latter on. Out of 150 patients, 143 (95.3 %) were symptoms free at last follow up and were considered as cured. 7 patients (4.6%) required one pint of blood transfusion. 9 patients (6%) had minor wound infection treated by sitz bath and antibiotics according to culture and sensitivity. Out of 25 patients who required one or two sessions of IOU, 17 patients (68%) were those whose stricture was non traumatic in origin.

DISCUSSION

Urethral Stricture is one of the known oldest urological diseases and remains a common problem with high morbidity. Male urethral stricture accounts for 5000 in patients visits per year in USA. Stricture has profound effect on quality of life. All stricture result from injury to urethral epithelium or underlying corpus spongiosum, which causes fibrosis during healing process. Small tears in epithelium cause urinary extravasation, leading to fibrosis. Normal pseudostratified columnar epithelium is replaced by squamous metaplasia. The progressive fibrosis causes urethral narrowing. In extracellular matrix, connective tissue is replaced by dense fibers interposed with bibroblast and there is decrease in ratio of type III to type I collagen fibers. There is also decrease in ratio of smooth muscle to collagen[6]. Short bulbar stricture can be successfully treated by internal urethrotomies. Internal urethrotomy refers to any procedures that open the stricture by incising or ablating it transurethrally to allow the scar to expand. As IOU is most commonly used first line procedure in treatment of stricture urethra, so it is discussed in detail. Internal urethrotomy does not provide an epithelial approximation, so healing occurs by secondary intention. Exact pathophysiology of healing process after IOU is not fully understood. However it is assumed that if epitheliazation progresses completely before the wound contraction, IOU may be a success. But if wound contraction occurs before epitheliazation, the stricture recurs. Any drug or procedure that can prevent fibroblast activity and inhibits collagen synthesis can delay stricture recurrence. There is confusion in literature regarding the curative rate of internal urethrotomy. A recent report by Santucci and Mc Aninch, using actuarial technique, showed the curative rate of IOU 20%[7]. Marberger in his study suggested that for a short stricture two internal urethrotomies can be attempted before urethroplasty is needed. Short bulbar stricture <1.5cm with minimal spongiosis/ fibrosis, IOU is best option[8]. However repeated urethrotomies has not given better results, indeed they increase periurethral fibrosis and worsens the stricture and make subsequent urethroplasty more difficult[9]. IOU or DVIU offers faster recovery, minimal scarring, less risk of infection although higher recurrence is common[10]. The bulbar stricture upto 3cm in length can be straight forward managed by end to end urethroplasty after one or two sessions of internal urethrotomies. The bulbar urethra is easy to approach and mobilize, therefore after the excision of

the scar tissue; the end to end urethroplasty gives excellent results. Various studies gives more than 90% success rate. For the patients who want the best chances of long term cure, excision and reanastomosis is best option[11]. Jun-Gyosuh et al in his study found end to end bulbar urethroplasty for short bulbar stricture with acceptable success rate[12]. A P Vanden Heever in his study found end to end bulbar urethroplasty a safe and effective procedure[13]. Mayank M Agarwat et al found excellent long term success rate of end to end bulbar urethroplasty[14]. Wright J I et al found in his study that end to end bulbar urethroplasty is a cost effective procedure[15]. End to end bulbar urethroplasty has shown high enduring success rate, low stricture recurrence rate and minimal complications making it very attractive and gold standard procedure[16]. Gupta N D, Ansari MS et al in their study found success rate of end to end bulbar urethroplasty more than 95%[17]. End to end bulbar urethroplasty remains the best procedure to gaurantee a high success rate. In our study we found the success rate of 95.3%.

CONCLUSION

End to end Bulbar Urethroplasty for short bulbar stricture is treatment of choice with cure rate near 95%.

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