

OUTCOME OF URETHROPLASTY IN THE MANAGEMENT OF TRAUMATIC URETHRAL STRICTURES

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ABSTRACT

Objective: To assess the outcome of end to end urethroplasty for traumatic urethral strictures.

Material and Method: This study was conducted at Urology Department, Lady Reading Hospital, Peshawar for January 2009 to December 2011. Study design was descriptive case series. Patients having blind traumatic strictures were included. All patients had antegrade and retrograde urethrogram done. Surgery was performed in lithotomy position. Patients were followed for one year. Success was defined as good fair and poor at the end of one year depending upon symptoms relief, radiographic and urodynamic evaluation.

Results: Forty patients were included in the study. Majority of patients 32 (80%) were in 2nd to 4th decade of life. Mean age was 35 years. Urban population 30(75%) was predominantly affected. Road traffic accident 22 patients (55%), Fall astride 12 patients (30%) were the common etiological factors. Mean operation time was 2.5 hours and mean hospital stay was 14 days. Catheter was removed after three weeks and immediate antegrade urethrogram was performed. Patients were followed for one year at three months Interval. 4(10%) Patients developed minor wound infection 2 patients (5%) had epididymo orchitis, two patients (5%) had erectile dysfunction managed conservatively. 20 patients (50%) needed no further treatment, 14 patients (35%) needed single internal optical Urethrotomy and 4(10%) were planned for redo urethroplasty as they required multiple endourological procedures.

Conclusion: Urethroplasty offers good results to patients with blind traumatic stricture disease.

Key Words: Urethroplasty, traumatic, blind stricture, antegrade, retrograde urethrography.

INTRODUCTION

Urethral stricture is an ancient disease mentioned in Greek, Egyptian and Vedak literature. Young population is mostly affected with an estimated prevalence of 40 per 100000 men at risk¹. The blind traumatic strictures treatment has always been a challenge for urologists as Endoscopic internal optical urethrotomy has got high failure rate is more than half². Urethral dilatation is the oldest surgical procedures but complications like haematuria, bacteremia, false passage, Paeriuethral abscess and fistula has made it quite unpopular^{3,4}.

Urethroplasty was the gold standard procedure before Sachtel in 1974 reported the endourological Management that is Internal optical urethrotomy is widely employed as minimally invasive procedure but in blind traumatic and posterior urethral distraction injuries associated with pelvic fractures there is high failure rate whereas Urethroplasty involves stricture excision and end to end anastomosis to restore urethral continuity with or without substitution of buccal mucosa, bladder mucosa or skin graft. It remains the affective method

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of management of complicated blind strictures but routinely it is not done because of the high cost, lack of ideal graft material and the need for specialized surgical care⁵.

MATERIAL AND METHODS

This descriptive case series study was conducted at the Department of Urology Government Lady Reading Hospital, Peshawar from January 2009 to December 2011. Forty patients suffering from traumatic blind stricture or malalignment were included. All the patients had urinary diversion in the form of Suprapubic cystostomy. Urethroplasty was planned after minimum three months interval of trauma. Admitted patients were clinically and biochemically assessed. Retrograde and antegrade urethrogram were performed to evaluate the site and length of the stricture.

The procedure was performed in general or spinal anesthesia in extended lithotomy position through midline perineal incision. Bulbar urethra was explored by separating bulbo cavernous muscles. The urethra dissected out from corpora cavernosa distally upto penoscrotal junction and proximally to the stricture at pelvic diaphragm. The stricture site was confirmed by retrograde urethroscopy or putting bougie in catheter. Antegrade cystoscopy was performed to check the urinary bladder neck and beam of light down. The stricture segment was completely excised until healthy

pliable tissue reached. A tension free end to end anastomosis of urethral mucosa was performed with 3/0 absorptive polyglytactin over silicon catheter after spatulation and eversion of proximal urethral mucosa. The sutures were placed symmetrically initially at 12, 3 & 9 O'Clock position. They were clearly demarcated so that jumbling is avoided. The rest of sutures were applied at 4, 6 and 8 O'Clock position. Buccal mucosal graft was employed either as inlay or only when the defect was more than 3 cm in posterior urethral defects. Perineal body was anchored with urethra. Bulbospongiosus muscles closed, vacume drain placed and patient was retained in bed for three to four days with restricted mobility. Anticholinergic, Antiandrogens and sedative were given for a week. The same principle of end to end anastomosis was applied for anterior urothoplasty. Urethral catheter removed after two weeks and suprapubic 'Catheter after three weeks. Antigrade urethrogram was performed immediately. All the patients were advised to visit the department at one months, 3 months, 6 months and yearly for follow up. Retrograde urethrogram performed after 3 months and one year interval.

The success was defined as: (a) Good:- Satisfactory voiding Urethrogram showed Patient urethra. No further procedure was required Urine flow rate was more than 15ml/ scc. (b) Fair. Difficulty in voiding persisted in the form of thin stream. some irregularity was there in retrograde urethrogram. Flow rate was between 10-15ml/sec. Self dilatation an single endoscopic procedure required. (c) poor. Voiding was poor and the patient could not pass urine in a stream. Flow rate was less then 10 ml/sec.

RESULTS

Forty patients with blind traumatic stricture were included in the study. Ten patient (25%) presented with anterior and thirty patients (75%) with posterior urethral stricture. Age range was between 22 to 60 years. Mean age was 35. Thirty patients (75%) belonged to urban while ten patients 10 (25%) from rural. The peak incidence was in 2nd and 3rd decade of life. Twenty two patients (55%) attain urethral injury as a result of road traffic accidents resulting in fracture pelvis and distraction injury leading to posterior urethral defect. Fall from height 14 (35%) fire injury 2 (5%) and instrumentation 2 (5%) patient were other causes resulting in anterior urethral stricture. All had suprapubic catheter in place and presented to us between 20 days to 5 years post traumatic interval. Eight (20%) patients had urethral dilatation, 6 (15%) patients had endoscopic internal optical urethrotomy, one (2.5%) had history of rail road catheterization. Surgery was decided after minimum three months of the trauma. Retrograde and antigrade urethrogram was performed in all cases while 20 patientrs (50%) had uroflometry done. The stricture length varied between 03-05cm. Two patients 5% had urethrocucutaneous fistula, one urethral stones (2.5%),

two (5%) diabetes mellitus; and two (5%) had erectile dysfunction. Mean operative time was 2.5 hours and mean hospital stay was 14 days. One patient had buccal only graft and two had perputial and full thickness skin grafts applied. Four patients received blood transfusion during surgery. There were no major post-operative complications except minor wound infections in 4 (10%) cases epididymoorchitis in two (5%) erectile dysfunction in two 2(5%) cases. Those were managed conservatively. Patients were followed after 3 weeks, 3 months 6 months and 1 years interval 20 (50%) needed no further treatment and labeled as good 6 (15%) patients needed single endoscopic procedure labeled as fair and 4 (10%) patients required further procedure and planned for revesion and labeled as poor or failure.

DISCUSSION

Once a stricture is always a stricture, this is an old saying and the urologists have been trying to disprove it for years and years. Good continence stream is the dream of treating urologist. Urethral dilatation, rail road catheterization have become obsolete due to its inherent Complications, Sacle visual urethortomy in 1974 was a breakthrough in the management of stricture disease with success rate of 56-85%^{6,7,8}. Attempts have been made for the management of blind strictures with variable results but many urologists disagree in dealing with such strictures endoscopically as every cut of urethrotome increase the chances of fibrosis.

Although cohort studies such as ours are graded low in the era of evidence based medicine, they are of value in less common conditions and traetments to establish standards of outcome on the basis of which the institutional audits can be done, similarly they also provide a solid base and useful data for multi-centre controlled trials which are necessary to establish different treatments of urethral stricture disease.

Blind urethral strictures, nonalignment of urethra longer than 1.5 cm, complicated strictures with secondary stones and urethro cutaneous fistulas are the real challenge. There is a rise of interest in urethroplasty in recent years with remarkable achievements. Urethroplasty was introduced as two staged procedure by johson in 1953 which was later modified as single stage by turner warworik and Blendy, reducing morbidity with good results 66-95%^{9,10}. Bedenoch pull through operation for inaccessible posterior Urethral stricture is now history as transpubic bone cutting urethroplasty has managed some complicated strictures successfully. Buccal mucosal grafts perputial full thickness grafts and urinary bladder mucosal grafts have filled the larger gapes as onlay or inlay replacements. In Our study of 40 patients with traumatic posterior urethral strictures complicated anterior nonaligned stricture were managed our urban population figures were 30(80%) and rural 10 (20%) are comparable to Hussain et al and Nisar Sheikh et al^{11,12}. The mean age 35 years in our study is similar to the reported data in literature¹³.

The association of pelvic fractures in our study 22 (55%) is also mentioned in other series¹⁴. The duration of Urethral injury ranged from three weeks to 5 years in our study is similarly reported by other authors^{7,11,14}. Urological factors road traffic accidents 22 (55%) patients fall astride 14(35%), gunshot injuries 2(5%) in our study match the study of other urologists¹⁵.

Mean operative time 2.5 hours, is 1 hour less as compare to the international literature¹³. Grafts are widely applied in major gapes we also applied buccal mucosal and per putial full thickness skin graft in two cases The success rate of our study was 85% comparable to other series^{16,17}. Most of the failures occurred in first year similar to other series implicating technical errors^{18,19}. As shown in the international literature the rate newly developed erectile dysfunction secondary to urethroplasty is equal the one developed secondary to circumcision, in our study the erectile dysfunction was rare²⁰.

CONCLUSION

Urethroplasty is a better alternative to repeated Urethrotomy and self dilatation.

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