



ORIGINAL RESEARCH PAPER

Urology

REVIEW OF MALE URETHRAL STRICTURE AT PATNA MEDICAL COLLEGE AND HOSPITAL (PMCH) FOR THE LAST 3 YEARS

KEY WORDS:

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ABSTRACT

Introduction: Urethral Sticture disease remains a common cause of morbidity among men. This study was done to assess the etiological factors, symptoms and management option in PMCH, Patna.

Materials and Methods: This is a prospective study done from March 2017 to Feb 2019. Data was collected from patients visiting Urology OPD and admitted in IPD for Urethral Stricture during the study period.

Result: In this study urethritis was the main etiological factor and Iatrogenic was 2nd most common etiology, for which H/O catheterisation was the main contributing factor.

Conclusion: Urethritis is still the most common single etiological factor in urethral stricture disease in this rural community and iatrogenic in the urban communities. Modern techniques has better treatment outcome in the patients.

INTRODUCTION

Male urethral stricture disease is a common condition which results in narrowing or obliteration of the urethral lumen and may involve any segment of the urethra from the urethral meatus to the membranous urethra. The urethra measures about 16-22cm in the adult males and 4cm in adult females¹. In Males, it is anatomically divided into posterior and anterior segments. The posterior segments traditionally referred to the posterior urethra measures about 4cm and traverses the prostate and pelvic membrane beginning at the bladder neck. The anterior urethra which is in continuity with the posterior includes the bulbar and penile urethra². This subdivision is important for clinical reason related to the treatment of urethral disease.

Narrowing of the urethra is a common cause of presentation in urological OPD/ Emergency. There are numerous cause of urethral stricture like trauma, instrumentation, catheterisation, TURP, open prostatectomy, post-hypospadias repair, lichen Sclerosis and urethritis. The management begins with a good history. Affected men usually, in uncomplicated cases, present with lower urinary tract symptoms (LUTSs) while confirmation is with a retrograde urethrography³, sometimes in combination with micturating cystourethrography. The oldest known method of treatment is dilatation which is often palliative⁴. Over the years, the treatment has evolved⁵ through urethrotomy and urethroplasty of various techniques. Often, the method used depends on the expertise of the urologist and the available tools.

MATERIALS AND METHODS:

This is a prospective study. Patients with urethral strictures presenting to Urology Opd, PMCH from March 2017 to Feb 2019 were identified. Information extracted included age at presentation, etiology, presenting symptoms, confirmatory investigation, number of strictures, length of stricture, complications, treatment method. The main outcome

variables assessed were the different methods of treatment used. P < 0.05 was considered statistically significant. Information obtained was analyzed using the Statistical Package for Social Sciences (SPSS) Version 21.

RESULTS:

A total of 92 patients with urethral stricture were analyzed within the study period. All were males. The mean age was 53.11 years with a range from 19 to 96. Of the 92 patients, 64 (69.6%) complained of LUTS, 18 (19.6%) had urinary retention while 4 (4.3%) had drainage of urine from the perineum (watering can perineum). The remaining 6 (6.5%) patients presented with uncommon complaints such as hematuria. Clinical findings on examination were urinary retention or suprapubic catheter in 64 (69.6%) patients, induration along the urethra in 10 (10.9%), and perineal fistula in 4 (4.3%). Hypertension was the most common comorbidity found among these men. While it was present in 34 (37%) patients, it occurred in association with diabetes mellitus in 2 patient. Diabetes mellitus was present in 6 (6.5%) patients, Of the 92 men, urethritis accounted for 28 (30.4%) while 30 (32.6%) were catheter associated (a dual etiology of inflammation or trauma), making urethritis the most common single etiology. Bulbar urethral stricture was the most common in this study, accounting for 32 (69.6%) patients.

Urethritis was the most common cause of bulbar urethral stricture while penile strictures were most commonly associated with catheter usage. Various treatment modalities used were anastomotic urethroplasty in 10, dilatation and subsequent anastomotic urethroplasty in 4, buccal mucosal graft (BMG) urethroplasty in 40, and two-stage urethroplasty in 10. Four of the patients who had BMG urethroplasty for bulbar urethral stricture from 2013 to 2016 had surgical site infection with stricture recurrence in 1 (7.7%) patient. This method of treatment had a statistically significant correlation (P = 0.007) with the year of treatment.

Table 1: Stricture site in relation to etiology

Site	Catheter	Post TURP	Infective	Traumatic	Others	Post hypospadias repair	total
Prostatic	0	2	0	0	0	0	2
Membranous	0	0	0	2	0	0	2
Bulbar	18	6	20	18	2	0	64
Penile	10	0	4	0	0	2	16
Panurethral	0	2	2	0	0	0	4
Penoscrotal	2	0	2	0	0	0	4
Total	30	10	28	20	2	2	92

DISCUSSION:

Stricture of the urethra results from narrowing of the urethral lumen due to spongiofibrosis⁶. The consequence of this is a loss of distensibility and compliance, leading to a reduction in the caliber of the urine stream. Urethral stricture disease is prevalent, and it is a common cause of presentation to the urologist worldwide⁷. Over the decades, there have been remarkable changes in the demographics of men with urethral stricture. For instance, in the 1960s, poorly treated gonococcal urethritis accounted for the majority of cases⁸. Currently, trauma, instrumentation, TURP, lichen sclerosis, posthypospadias repair, catheterization, and prostatectomy are common causes while infection has taken the backseat at the global level. There are however geographical variations and some poor resource communities still have high contribution to stricture etiology from infective urethritis. This is replicated in this study in which urethritis accounted for 28 (30.4%) of the strictures representing the highest single etiological factor. This is similar to the findings of Olajide et al⁹. in Oshogbo.

In addition, the social awareness, economic well-being, genetic constitution, and lifestyle which contribute to road traffic crash, sexually transmitted diseases, genetic predisposition, and alcohol consumption to a large extent determine the etiology of urethral stricture.

The prevalence of hypertension varies between regions and communities. However, what is common to all is that the prevalence and its complications increase with age. This is sometimes the reason for delay or postponement of surgery, and in some cases, settling for less invasive treatment as uncontrolled hypertension may be a cause of intra- and or post-operative hemorrhage. This may jeopardize the graft in substitution urethroplasty. Hypertension may complicate obstructive nephropathy in long-standing urethral stricture. Proper care also requires that Diabetes mellitus, second to hypertension in this study, should be controlled before any form of surgery in these men.

The bulbar urethra was the most commonly afflicted by urethral stricture in this study, a finding which is similar to that of many authors¹¹. Several anatomical explanations have been given to account for this. The double curve in the bulbar urethra slows urine flow in that segment, and in conjunction with the presence of the periurethral glands and abundant corpus spongiosum, infection is more easily established. The inferior position of the urethra relative to the pubis predisposes it to fall astride crush injury which was common in this study.

The treatment of urethral stricture has evolved rapidly over the years from conservative procedures such as dilatation to direct vision internal urethrotomy and urethroplasty with varying successes claimed. For bulbar urethral stricture, we offer buccal mucosa graft urethroplasty and Johanson's two-stage urethroplasty for penile strictures. The use of two-stage approach in penile urethral stricture was premised on the fact that the patients had preoperative adverse conditions such as urethral stone and diabetes mellitus with a poor urethral plate. The presence of infection therefore meant that a single-stage ventral urethrotomy, a dorsal BMG patch, and closure (Asopa)¹¹, the other option, was not feasible. The patient who presented with panurethral stricture after the protocol was

offered a ventral onlay BMG urethroplasty for the bulbar segment and a two-stage Johanson for the penile stricture as advised by Santucci. A single-stage BMG pan urethroplasty of Kulkarni and Barbagli¹² was also offered to patients. Dilatation, the first treatment for urethral stricture, is palliative and similar to direct vision internal urethrotomy may actually worsen the stricture. The unit currently reserves dilatation for short-segment urethral stricture occurring concurrently with benign prostatic hyperplasia so that both can be treated at the same operating session.

CONCLUSION:

The demographics of men with urethral stricture appear not to have changed remarkably in this rural community as urethritis still contributes immensely to the etiology. Many urban centers in the country have however reported a change from urethritis to trauma as the leading etiology. Further training and establishment of a protocol with modern treatment methods as its bedrock enables the urologist to follow and adopt the global changes in the treatment of urethral stricture. Urethral strictures are a frequent problem that many urologists encounter. The classification and nomenclature of urethral strictures has been recently standardized, bringing greater uniformity to their study and treatment. The predominant age group suffering from this disease is older men, and the most common cause, in industrialized countries, is iatrogenic. As the severity of disease depends on the degree of spongiofibrosis, treatment of urethral strictures is varied. Currently, urologists are moving away from maintenance, i.e., dilation and DVIU, toward management, i.e., urethroplasty. Options for management of urethral stricture include EPA and augmented urethroplasty, most commonly with buccal mucosa grafts, and the choice of technique is dependent on the anatomic location within the urethra and length of the stricture. Evaluation and application of tissue engineering to urethral reconstruction have opened new avenues to treatment options using acellular and cellular tissue matrices. Other future therapies still awaiting transition from the laboratory to the clinical setting are the use of stem cells and secretomes. With each progression in the field of urethral reconstruction, the ultimate goal remains to create a successful, durable outcome, while maximizing patient quality of life.

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