

A CLINICAL AND RADIOLOGICAL STUDY OF ETIOLOGY AND SITE OF STRICTURE URETHRAGaurav Thami¹, Devender Kaur², Deepak Singla³, Mukesh Sangwan⁴, Richa Kansal⁵, Nivesh Agrawal⁶**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Urethral stricture disease imposes a significant burden both on the health and quality of life in men. The majority of men with stricture urethra present with obstructive and voiding symptoms and many require repeated surgical procedures for the management. The present study is designed to look into the etiological factors and site of urethral stricture.

KEYWORDS: Stricture urethra, Obstructive symptoms, Irritative symptoms.

INTRODUCTION: Urethral stricture is a disease process that significantly hampers the quality of life of an individual and may require prolonged treatment for relieve of symptoms. It is more common in males as compared to females.¹ The true incidence of Urethral stricture disease in men is unknown. The majority of men with stricture urethra present with obstructive and voiding symptoms and many experience hematuria, recurrent urinary tract infections and need for repeated procedures like urethral dilatation, optical internal urethrotomy and urethroplasty. More severe complications like acute urinary retention, Fournier gangrene and renal failure have been reported in small percentage of men with this disease.² With respect to etiology, the majority of urethral strictures encountered are idiopathic, traumatic, inflammatory or iatrogenic. Strictures owing to genitourinary tract infections like gonorrhoea and Chlamydia occur with much frequency with the advancement of antibiotic therapy.³

MATERIAL AND METHODS: A retrospective review of all cases diagnosed as urethral stricture was done in Department of General Surgery, BPS Government Medical College, Khanpur Kalan Sonapat over a period of two years (2013-2014). A total of 50 cases were diagnosed as urethral stricture in the surgical department. The data was collected with particular emphasis on the etiology and site of the stricture. Detailed clinical history was analyzed on the prior catheterization, instrumentation, pelvic trauma and urethral discharge. Local examination with keen attention towards any fistula formation, abscess formation, visible external injury and previous scar marks were recorded. The findings of Ultrasonography of Abdomen were recorded with particular attention to residual urine and presence of backpressure changes. The findings of retrograde/micturating cystourethrography (RGU/MCU) were recorded for the evaluation of location, length of stricture and presence of multiple strictures. The patients below 20 years of age, multiple site strictures and previous history of surgical treatment for stricture were excluded from the study.

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OBSERVATIONS:

Age (in years)	No. of patients
20-30	3 (6%)
30-40	22(44%)
40-50	14 (28%)
50-60	10 (20%)
70-80	1 (2%)
Total	50

Table 1: Depicting age distribution

The maximum incidence of stricture was observed during 30-40 years age group (44%) and it was further observed that 92% of cases were between age group 30-60 years. The extremes of age had the least incidence of stricture.

Sr. No.	Clinical Symptoms	No. of Patients
1	Diminution of urinary stream	46(92%)
2	Postmicturition dribbling	43(85%)
3	Frequency of micturition	40(80%)
4	Dysuria	34(67%)
5	Suprapubic fullness/pain	30(60%)
6	Retention urine	25(50%)
7	Haematuria	7(20%)

Table 2: Depicting clinical symptomatology of urethral stricture

Diminution of urinary stream was the most common symptom observed in 92% of the patients followed by post micturition dribbling and frequency of micturition observed in 85% and 80% of patients respectively.

Site of Stricture (As per Urethrogram)	No. of Patients
Bulbous urethra	32 (63%)
Membranous urethra	9 (18%)
Prostatic urethra	2 (5%)
Penile urethra	7 (14%)

Table 3: Depicting distribution according to site of urethral stricture as per Urethrogram

Bulbous urethra was the most common site for urethral stricture noted in 63% of the patients followed by membranous urethra and penile urethra in 18% and 14% of patients respectively.

Site of stricture	Trauma(32)	Inflammatory(1)	Idiopathic(17)
Bulbous urethra	21(63%)	-	10(61.76%)
Membranous urethra	6(20%)	-	3(14.7%)
Prostatic urethra	2(7%)	-	1(2.94%)
Penile urethra	3(10%)	1(100%)	3(20.55%)

Table 4: depicting distribution of patients as per the etiology and site of urethral stricture

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Trauma was observed to be the underlying cause of stricture urethra in 32(64%) patients whereas no cause could be ascertained in 17(34%) patients. Inflammatory stricture was present in one (2%) patient only.

In traumatic urethral strictures, bulbar urethra was the most common site in 63% of the patients followed by membranous urethra and penile urethra in 20% and 10% of patients respectively.

In idiopathic urethral strictures, bulbar urethra was the most common site in 61.76% of the patients followed by membranous urethra and penile urethra in 14.7% and 20.55% of patients respectively.

Bulbar urethra is the most common site of urethral stricture found in the 62% of the patients followed by the membranous urethra in 18% of the patients.

DISCUSSION: Urethral stricture has perplexed the urologists for centuries and still continues to pose strong challenges despite the advancements in the fields of urology. The majority of strictures in the past were infectious due to gonococcal urethritis. However, this clinical entity is quite rare in the developed world. In the present era, the majority of strictures are due to trauma (Iatrogenic/accidental), inflammation and idiopathic causes. Lichen sclerosus, formerly known as balanitis xerotica obliterans (BXO) and non-specific urethritis are most common causes of the inflammatory urethral strictures.^{2,4,5}

Trauma which could be either iatrogenic or accidental is increasingly being recognized as the cause of urethral strictures. Urethral catheterisation, cystourethroscopy, urethral dilatation, TURP, hypospadias surgery is the common causes of iatrogenic trauma that lead to stricture formation. However, accidental trauma may also be sustained as a result of road traffic accidents which lead to injuries to the bulbar urethra and pelvic fracture related injuries to the membranous urethra and bulbo-membranous junction. The etiology of many strictures remains unknown (Idiopathic) but many of them are seen to occur at the junction of the proximal and middle sections of the bulbar urethra in adolescents and young adults.^{2,4,6}

The underlying cause is related to the patient's age and to the site of the stricture. Meatal strictures may be due to ammoniacal dermatitis in the very young, lichen sclerosus (LS) in the adolescent and young adults and instrumentation or poor hygiene at any age. LS is recognized now as the commonest identifiable cause of penile strictures in young and middle-aged adults. It starts at the meatus and may then spread proximally up the penile urethra. Strictures in this segment are otherwise uncommon and tend to follow catheterization, affecting the bulbo-penile junction primarily, or are idiopathic affecting the mid-segment.⁶

The bulbar urethra is segment of urethra enclosed by the bulbospongiosus muscle and is the commonest site for a stricture. Idiopathic strictures tend to occur in adolescent and young adults. Iatrogenic strictures occur at any age and are typically found at the junction of the bulbar and penile urethra after catheterization or in the proximal bulbar urethra, commonly involving the membranous urethra and urethral sphincter mechanism, after TURP).⁶

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