

## Epidemiologic Profile of Stricture Urethra In Males: Our Single Centre Experience

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### Abstract

**Introduction:** The term stricture urethra usually refers to disease involving anterior urethra. It is one of the commonest urologic conditions requiring surgical management. Here we present our institutional experience in management of stricture urethra.

**Materials and methods:** A retrospective study was done by reviewing records of patients with urethral stricture admitted in the urology department of our hospital over a period of three years from March 2013 to March 2016.

**Results :** A total of 112 patients were admitted and operated for stricture urethra over the three years. Mean age at presentation was 44.8 years. Most common cause of stricture was idiopathic. Bulbar urethra was the most common site of stricture. Buccal mucosal graft urethroplasty was the most common surgery performed.

**Conclusion :** Stricture urethra is predominantly a disease of middle age. The cause is idiopathic in most cases with urethroplasty using buccal mucosal graft being the commonest mode of treatment

**Keywords :** Stricture, Idiopathic, Bulbar urethra, Urethroplasty, Buccal mucosal graft

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### I. Introduction

Urethral stricture refers to narrowing of urethra secondary to scarring of spongy tissue of corpus spongiosum. The term usually is applied for anterior urethra. Narrowing of posterior urethra is usually due to fibrosis secondary to trauma or post surgeries like prostatectomy. Urethral stricture is one of the commonest urologic conditions requiring surgical therapy. Though it can affect any age group most cases are seen in middle aged individuals and no definite cause can be established in most cases. Urethroplasty using buccal mucosal graft is the most common surgery performed. This study was performed at our institute to evaluate the epidemiologic profile of stricture urethra cases and their management.

### II. Materials And Methods

A retrospective study was done by evaluating hospital records in the urology department of our hospital from March 2013 to March 2016. Patients admitted with a diagnosis of stricture urethra after retrograde urethrogram were included in the study. Data was collected in terms of the age of the patient, cause of the stricture, location of stricture on retrograde urethrogram and type of surgery performed. The data was analysed using Microsoft excel software. The results are presented as numbers and percentages.

### III. Results

The total number of cases admitted and operated during the study period was 112. Mean age at presentation was 44.8 years. The cause of stricture was idiopathic in 46% of cases. Strictures associated with balanitis xerotica obliterans (BXO) were next most common. Post traumatic strictures secondary to straddle injury to perineum and posterior urethral fibrosis secondary to pelvic fracture urethral distraction injuries were seen in 16% of cases. Iatrogenic urethral injuries secondary to instrumentation like during transurethral prostatic surgeries, endoscopic stone surgeries and traumatic catheterization constituted 14 % of cases (Table 1).

Bulbar urethra was the most common site of stricture (50.8% of cases). Panurethral strictures in patients with associated BXO and meatal stenosis were seen in 29.5 %. Posterior urethral fibrosis secondary to transurethral resection of prostate and pelvic fracture injuries were seen in 10.7 % of cases (Table2).

Buccal mucosal graft urethroplasty was the most common surgery performed (69.7%). Visual internal urethrotomy was done in 14 % of cases with short segment bulbar urethral strictures. Anastomotic urethroplasty was performed in 16 % of cases with strictures secondary to trauma (Table3).

#### IV. Discussion

Stricture implying narrowing of urethra is one of the most common urologic diseases in developing countries. Urethra is divided into anterior urethra comprising penile and bulbar urethra. Posterior urethra is formed by membranous and prostatic urethra. The term stricture is generally used to refer to anterior urethral narrowing secondary to damage to urothelium or corpus spongiosum which heals by scarring [1]. The most common cause of stricture previously was inflammation secondary to urethritis (gonorrhoea) which is rarely seen these days. Another inflammatory cause is lichen sclerosis et atrophicus or BXO which involves penile skin as well as proximal urethra but its exact etiology is not known [2]. Strictures secondary to trauma can occur either due to straddle injury to perineum causing bulbar urethral injury or pelvic fracture causing posterior urethral distraction injury [3]. There is an increase in incidence of iatrogenic strictures secondary to more number of transurethral surgeries and procedures performed these days. The cause of stricture still remains unknown in some cases [4].

Urethral stricture can affect any age group. Strictures in young patients are most commonly secondary to trauma or iatrogenic injury while inflammatory and idiopathic causes are more common in middle aged and elderly patients. Bulbar urethra is the most common site of stricture [5]. Panurethral stricture involving penile and bulbar urethra is mostly seen in patients with BXO.

Diagnosis can be established by the typical history of painful and obstructed micturition combined with retrograde urethrogram and uroflowmetry [6]. Uroflowmetry quantitates the severity of stricture while retrograde urethrogram gives an anatomical orientation to plan surgery. A simple ultrasound of the abdomen can identify any upper tract injury and any residual urine in bladder. Emergent treatment by urinary diversion via a suprapubic cystostomy is required for patients presenting with acute urinary retention or with upper tract deterioration.

Definitive treatment of stricture may involve endoscopic or open surgery. Visual internal urethrotomy using an endoscopic knife was found to be useful in short segment (<1.5 cm) and fresh bulbar urethral strictures [7]. It has a high recurrence rate of 50-60% in some series. Open reconstructive surgery is the gold standard. Urethroplasty using various grafts like oral mucosa, penile skin, bladder mucosa, colonic mucosa etc have been documented [8, 9]. Urethroplasty using buccal mucosa is one of the most common surgeries performed with a high success rate [8]. It is most suitable for bulbar urethral strictures. Penile foreskin is preferred for distal urethral strictures and meatal stenosis. For post traumatic strictures complete excision of scar tissue and direct end to end anastomosis of the urethral ends is the preferred modality of surgery [10].

#### V. Tables

**Table 1:** Etiology of stricture

Etiology of stricture	No. of cases	Percentage
Idiopathic	52	46.4 %
Lichen sclerosus (BXO)	26	23.2 %
Post traumatic	18	16 %
Iatrogenic (post instrumentation/surgery/catheterisation)	16	14.2 %

**Table 2:** Location Of Stricture On Retrograde Urethrogram

Location of stricture	No. of cases	Percentage
Bulbar	57	50.8 %
Panurethral	33	29.5 %
Penile urethra	10	9 %
Posterior urethra	12	10.7 %

**Table 3:** Type of surgery performed

Type of surgery	Number	Percentage
Buccal mucosal graft urethroplasty	78	69.7 %
Visual internal urethrotomy	16	14.3 %
Anastomotic urethroplasty	18	16 %

## **VI. Conclusion**

Urethral stricture can affect any age group though it is most common in middle aged individuals. Prompt intervention is required to relieve the symptoms and improve quality of life. Most common cause being idiopathic, several other etiologies have been documented. Bulbar urethra is the most common site affected and open reconstructive surgery is the gold standard treatment to achieve satisfactory results.

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