



CLINICAL AUDIT OF MALE URETHRAL STRICTURE AT A TERTIARY INSTITUTE IN SOUTHERN INDIA.

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**INTRODUCTION:**

Act of passing urine without any complaint is bliss for those who can do so. Those who suffer know the real pain of the condition. Men have long length of urethra which makes them vulnerable for narrowing of passage by stricture formation. The cause can be identifiable or idiopathic also most of the time. There is no specific age group ascertained to stricture formation but it is seen more commonly with increasing age probably due to exposure to causative factors more frequently. Urologists are the best care provider for strictures. There remains vast difference in provision of treatment based on patient & doctor preference, patient conditions, inconsistent result of surgery, economic & compliance issues in Indian scenario. Very few high volume dedicated centers provide standard of care causing vast difference in scope of care provision. Our study was conducted in a tertiary care teaching institute in southern part of India. Mean age of patients was 46.4 years & majority population was more than 55 years of age (62%). Patient presented with various complaints & duration. Most patients were diagnosed in recent visit while 33% of population present with more than a year of diagnosis. There is variation in location of stricture most common involving bulbar area. As per our study outcome, cause for formation of strictures remains unidentified in maximum number of causes followed by history of instrumentation of urethra. There are many treatment modalities for treatment of stricture, in our study minimally invasive urethrotomy opted by maximum number (28.84%) patients for its ease of doing & intermediate results for the morbid problem.

**METHODOLOGY:**

It is an observational study conducted in a tertiary academic institute in department of urology. The study was conducted during January 2019 to December 2019 in our department. Written & informed consent was obtained from participants for enrolling information in study.

Inclusion criteria: male subjects more than 18 years of age with clinically diagnosed stricture urethra by appropriate radiological imaging were included in the study. Those who did not give consent were excluded from enrollment.

The proforma for data collection was filled based on the information provided by the patient in OPD & information related to intervention was noted after the procedure performed. Patient was the one choosing modality of his choice & investigators' role was to provide the information related to all the modalities along with their results.

**RESULTS:**

**Table 1**

Mean age of presentation and range of age.

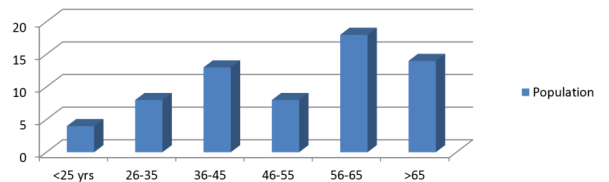
Sex	Mean age	Range of age
Male	46.4	23-86

**Table 2**

Age distribution of population.

Age group	Population	Percentage
<25 yrs	4	7.69
26-35	8	15.38
36-45	13	25
46-55	8	15.38
56-65	18	34.61
>65	14	26.92
Total	52	

**Population**



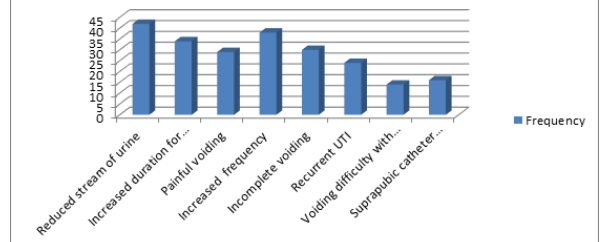
**Chart 1:**

**Table 3**

Frequency of presenting complaints

Presenting complaint	Frequency	Percentage
Reduced stream of urine	42	18.50
Increased duration for voiding	34	14.97
Painful voiding	29	12.77
Increased frequency	38	16.74
Incomplete voiding	30	13.21
Recurrent UTI	24	10.57
Voiding difficulty with skin Discolouration over glans	14	6.16
Suprapubic catheter insitu	16	7.04
Total	227	

**Frequency**

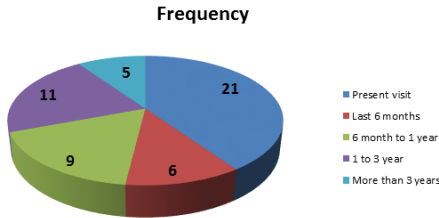


**Chart 2:**

**Table 4**

**Time since diagnosis for population**

Time since diagnosis	Frequency
Present visit	21
Last 6 months	6
6 month to 1 year	9
1 to 3 year	11
More than 3 years	5

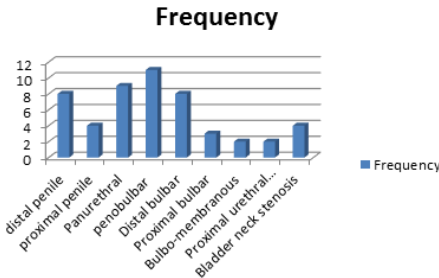


**Chart 3**

**Table 5**

**Probable location of strictures**

Location of stricture	Frequency
distal penile	8
proximal penile	4
Panurethral	9
penobulbar	11
Distal bulbar	8
Proximal bulbar	3
Bulbo-membranous	2
Proximal urethral stricture	2
Bladder neck stenosis	4



**Chart 4**

**Table 6**

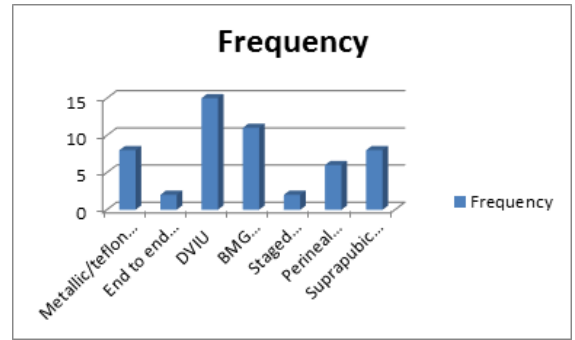
**Frequency of probable cause of stricture**

History as Probable cause of stricture	Frequency	Percentage
Idiopathic	19	36.53
Recurrent UTI	6	11.53
Previous catheterization/ endoscopic procedure	13	25
Trauma	3	5.76
Previous surgery for stricture	11	21.15
	52	

**Table 7**

**Intervention performed in number of cases**

Intervention performed for strictures	Frequency	Percentage
Metallic/teflon dilator cannulation	8	15.38
End to end anastomosis	2	3.84
DVIU	15	28.84
BMG Substitution urethroplasty	11	21.15
Staged urethroplasty	2	3.84
Perineal urethrostomy	6	11.53
Suprapubic catheter diversion	8	15.38



**Chart 5:**

**Discussion:**

In our study the mean age of the patients was 46.4 ranging from 23 years till as late as 86 years of age, suggesting this is more common in later decades of life. While study conducted by Wani B et al, the major group was men in age group of 21-40<sup>1</sup>. Majority of the patients with stricture at young age had some triggering factor such as instrumentation or trauma in past.

In this study reduced stream of urine was the major presenting complaint followed by increased duration for voiding urine. The duration of voiding was ranging from 2 minutes to 8 minutes. Patient usually complains of more than 1 complaint in various permutations & combinations. The diagnosis has to be suspected in cases where most obvious cause of the complaints is ruled out. Similar results were noted in study done in Indian population by Wani et al.<sup>1</sup>

Many patients were diagnosed in the initial visits of complaints based on the imaging study like ascending urethrography with or without micturition study. Some patients were known cases of stricture with 1 or more surgery in past by different modalities which ultimately failed to relieve the complaints making patient vulnerable for another procedure. This recurring nature of the disease creates physical & psychological morbidity compromising quality of life.

Historically, strictures were more or less associated with gonococcal urethritis.<sup>2</sup> But later on, it was found that a stricture was rarely due to a single infection and it takes 20 years for a stricture to develop after a single episode of untreated gonorrhoea.<sup>2</sup> Stricture has decreased dramatically in the developed world (less than 10%) due to prevention campaigns for sexually transmitted diseases, public awareness of these diseases, and rapid and effective antibiotic treatment for urethritis.<sup>3,4</sup> In the developed world, most strictures today are either iatrogenic or idiopathic.<sup>5,6</sup> Risk associated with TURP are traumatic insertion of the resectoscope with perforation of the bulbous urethra, instrument friction at the penoscrotal angle, and monopolar current leakage due to insufficient resectoscope insulation.<sup>7,8</sup> A history of urethral catheterization is another important iatrogenic cause.<sup>5</sup> Penile urethra, pan urethra, and multifocal anterior urethral involvement are also common. Improper urethral catheter insertion causes 3.2 urethral injuries per 1 000 patients.<sup>9</sup> Prolonged catheterization leads to urethral inflammation and ischemia, and leads ultimately to urethral stricture.<sup>5</sup> Idiopathic strictures or strictures without an apparent reason are surprisingly common.<sup>4,5</sup> It may be the delayed manifestation of unrecognized (childhood) trauma<sup>10</sup>, congenital in origin<sup>11</sup> (possibly due to an incomplete rupture of the urogenital membrane and related to what is called Cobb's collar<sup>12</sup> by some and Moorman's ring<sup>13</sup> by others) or mainly ischemic in origin, especially in elderly men.<sup>14</sup>

Lichen sclerosis (LS) is still commonly known by its initials BXO.<sup>14</sup> It is now the most common identifiable cause of penile

strictures in young and middle-aged adults.

In our study penobulbar strictures were most prevalent followed by pan urethral strictures. In similar study by Wani B et al, showed bulbar urethra was most common site<sup>1</sup>. This is probably due to being teaching institutes the patient we get are from lower middle class to lower income class population who do not priorities their health condition & present late, seeking cheap & least morbid treatment. They also have compliance issues & this affects their choice of treatment most importantly.

Patients who cannot afford appropriate treatment for condition end up choosing dilatation of urethra using metallic or Teflon dilators as it can be done with least morbidity & they can return to work immediately. Although dilation and urethrotomy continue to be the most commonly used techniques, their failure rate is as high as 47.6% and many patients progress to surgical repair<sup>2,3</sup> and multiple studies have shown that the long term results of this modality are not encouraging. Still there is significant percentage of population who opt for this method. DVIU formed most frequent surgery performed in our study as it was offered to well-chosen population as one of the options. This is seconded by many studies in past. So people who are not willing for more morbid open procedure or who don't want to damage their aesthetic appearance specially those who are in active sexual life opt for endourological procedures.<sup>15</sup>

In this study DVIU was the most common procedure performed. It coincides with the study conducted by Bullock et al. The most common procedure among practicing urologist to treat strictures is dilatation (56-93%) & DVIU (66-97%)<sup>16,17</sup>. Most urologist 56-77% don't perform urethroplasty regularly.<sup>16,17</sup>

To ensure durable urethral patency, it is crucial that epithelization occurs prior to severe wound contracture.<sup>18</sup> As per the recent guidelines patients should be offered substitution urethroplasty for most satisfactory results for indicated patients. In our study patients who were not involved in active sexual life or well selected patients who were willing for substitution urethroplasty after explaining side effects of the procedure were offered Buccal mucosal substitution urethroplasty. However their percentage in whole study population was 23.07% only. Patients with disabling morbidity & poor performance status were subjected to palliative methods like perineal urethrostomy or just continuation of suprapubic catheter. By a study conducted by Murphy et al. the cumulative incidence of failure at 2 years was 30.2% for long stricture anterior urethroplasty and 14.5% (95% CI 4.8-39.1) for perineal urethrostomy. Perineal urethroplasty was very well accepted in view of procedure & outcome by the patients. Suprapubic catheter was offered to patients with very poor performance scale, perineal & posterior urethral injury or multiple failed procedures in the past.<sup>19</sup>

## CONCLUSION:

Thought the patient expectation is highest success rate of intervention, majority still chose for the least morbid procedure. Cost of treatment, perception of failure & morbidity of surgical procedure plays an important role in choosing the modality of intervention in addition to standard of care guidelines.

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