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CLINICAL AND RADIOLOGICAL SPECTRUM OF URETHRAL STRICTURE DISEASE: AN EASTERN INDIA SCENARIO.

Urology

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ABSTRACT

Background Urethral stricture disease has a wide array of presentation depending upon the aetiology, anatomy and its clinical impact. Its management too, varies according to type and extent of pathology; age, expectations and co-morbidities of patient and surgeon's skill and experience**.**

Purpose- Present study has been done to share our experience with the urethral stricture disease to delineate the presenting complaints and associated signs and symptoms of patients in this part of world; along with a relevant review of the literature.

Material and methods- This was a retrospective study of a total of 404 patients with urethral stricture, who were admitted between January 2007 to December 2014 in the Urology Department of tertiary care centre of eastern India. The case records of all cases diagnosed as anterior urethral stricture were analyzed for clinical presentation. Data were entered both prospectively by careful patient questioning and retrospectively from the detailed chart review.

Results- Mean age of presentation was 41.2years (age range from 3 to 81 years). Overall iatrogenic causes were most common (40.6%) but stricture etiology varied with the stricture site. Lower urinary tract symptoms (84%) were the most common way of presentation followed by acute urinary retention (27%). The clinical presentation was associated with complication in 22.27% (90) cases.

Conclusion- The symptoms other than LUTS and urinary retention must be considered when treating any patient with urethral stricture. Around 60% of patients of urethral stricture require emergent Urologic treatment .More than 20 % have associated complication and a life-threatening condition at the time of presentation. A disease specific, patient reported questionnaire addressing voiding and sexual dysfunction is needed to accurately characterize these symptoms and measure outcomes.

KEYWORDS

Diverticulum; fistula; Stricture; Urethra

Introduction –

The urethral stricture disease has various presentation; causes significant morbidity and impairs the quality of life of the patient.[1] A review of the literature, performed on the major medical database search engines, reveals that existing literature does not adequately describe the contemporary presentation and complications of urethral stricture.

In this study, we present our experience along with a review of the literature to delineate the presenting complaints and associated signs and symptoms of patients with anterior urethral stricture.

Material and methods-

This was a retrospective study of a total of 404 patients with urethral stricture, who were admitted between January 2007 to December 2014 in the Urology Department of tertiary health care centre at Kolkata. The case records of all cases diagnosed as anterior urethral stricture were analyzed for clinical presentation. The patient presenting with pelvic fracture urethral distraction defects were excluded from the study because of their straightforward presentation. Data were entered both prospectively by careful patient questioning and retrospectively from the detailed chart review. A comprehensive electronic literature search was conducted using the key word etiology, sign, symptoms, urethra and stricture.

Results-

Mean age of presentation was 41.2years (age range from 3 to 81 years). Overall iatrogenic causes were most common (40.6%) but stricture etiology varied with the stricture site (Table-1). Lower urinary tract symptoms (84%) were the most common way of presentation followed by acute urinary retention (27%). The clinical presentation was associated with complication in 22.27% (90) cases. (Table-2)

Table-1.Showing the distribution of anterior urethral stricture with the site and aetiology

Cause (In %) / Site in % (no.)	Idiopathic	Iatrogenic	Inflammatory	Lichen sclerosus	Traumatic
Penile 30.9 (125)	20.8	44.0	14.4	17.6	3.2
Bulbar 42.8 (173)	42.7	38.2	9.2	0	9.9
Pan urethral 15.1 (61)	19.7	41.0	11.5	27.9	0
Total (359)					

Table-2 showing the presenting signs and symptoms of anterior urethral stricture *

Symptoms	Number of patients (%)
Luts	301 (84)
Aur	97 (27)
Genitourinary pain	84 (23.4)
Urinary tract infection	77 (21.5)
Gross haematuria	35 (9.8)
Incontinence	25 (6.7)
Urethral abscess	21 (5.8)
Perennial sinuses	5 (1.5)
Renal failure	19 (5.2)
Sexual dysfunction	71 (19.8)

* most of the patients have more than one presenting feature

Discussion-

Urethral stricture is one of the oldest urological pathologies known; there is no uniformly accepted clinical definition of urethral stricture or measure of treatment success. It is assumed by many that most patients (with urethral stricture) present with progressive symptoms of lower urinary tract obstruction.[2] In this study, 84% of patients presented with lower urinary Tract symptoms(LUTS) . Acute urinary retention (AUR) was present in 27 % of patients but it was the major reason for emergency urological consultation in more than 60% of patients .Its

reported incidence is very high in developing countries like Nigeria and Yemen.[3,4]

Although LUTS was a very common symptom, pain clearly is an important associated symptom of urethral stricture and at present is not routinely assessed by current clinical measures. It could be due to, 1) Significant lower urinary tract obstruction can cause elevated voiding pressures with intravasation of urine into the corpus spongiosum or prostatic stroma; 2) Inflamed stricture causing the perineal discomfort; and 3) dysuria which can be seen in 14% of patients.[5,6] In this study 23.4% of patients had pain without evidence of infection. In our study, the documented urinary tract infection was present in 21.5% of patients. It can be as high as 41%.[1] Haematuria is also meaning full symptoms of urethral stricture. Its occurrence in a urethral stricture patient can reach 42% as in Yemen.[7] We found, 9.8% of patient had gross haematuria. 6.8% patients presented with incontinence of urine .Its reported cause was altered bladder compliance, overflow incontinence and urethral diverticula.

In 22.27 % of patient of urethral stricture of this study, complications were present. Formation of lower urinary tract calculi were the most common complication [Fig-1]. Formation of peri-urethral abscess [fig-2] was the second most common complication ; some of which were further developed into urethra cutaneous fistula and "water cane perineum". It is also considered as a risk factor for life threatening necrotising fasciitis or Fournier's gangrene. [8] The long standing urinary stasis and back pressure change cause the secondary changes in proximal urethra, bladder and impaired function of upper urinary tract. The long standing impaired renal functions are rarely reversible and can cause significant morbidity.[9] In voiding cysto-urethrogram of these patient prostatic urethral diverticula, passage of contrast in vas deference and ejaculatory duct, bladder diverticula with or without calculi, b/l high grade vesicourethral reflux can be seen [fig-1, fig-3] .In this study 5.2% of patients presented with renal failure and on subsequent work up urethral stricture was detected.

In this study, the overall sexual dysfunction rate was 19.2 % and ejaculatory dysfunction was more common. Sexual dysfunction is associated with urethral stricture and validated questionnaires such as the International Index of Erectile Function can assess erectile and ejaculatory function in men before and after Urethroplasty. [10-14]

Patient related outcomes can be measured by questionnaires intended to address issues related to symptoms before and after intervention.[15] American Urological Association Symptom Index (AUASI), introduced in 1992, is a patient related questionnaire designed to evaluate men with Benign Prostatic Hayperplasia (BPH) related LUTS. [16] Morey et al first reported that urethral stricture was associated with severe bother scores on AUASI and the questionnaire successfully predicted the therapeutic outcome after Urethroplasty.[17]. However, it was found later that AUASI is not valid in urethral stricture disease patients and may not accurately capture the full range of patient related voiding symptoms and complaints related to urethral stricture. The most common presenting voiding symptoms not captured by AUASI were urinary stream spraying in 13% of cases and dysuria in 10%.

This study does have some inherent flaws. It is a retrospective study and only symptoms documented in the medical record were available for data collection. This study does however represent a detailed analysis of the clinical presentation and complication of anterior urethral stricture.

Conclusion-

The symptoms other than LUTS and urinary retention must be considered when treating any patient with urethral stricture. Up to 60% of patients of urethral stricture require emergent Urologic treatment .More than 20 % have associated complication and a life-threatening condition at the time of presentation. A disease specific, patient reported questionnaire addressing voiding and sexual dysfunction is needed to accurately characterize these symptoms and measure outcomes.

Figures:

Fig-1a, showing the bladder calculi, passage of dye in vas and ejaculatory duct in case of proximal bulbar urethral stricture

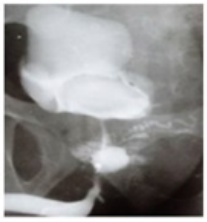


Fig-1b, scout film of same stricture patient showing enlarge bladder calculi

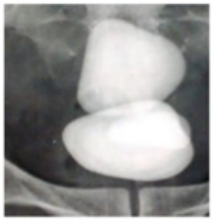


Fig 2. showing mid bulbar urethral stricture with associated urethral diverticula, and peri urethral abscess

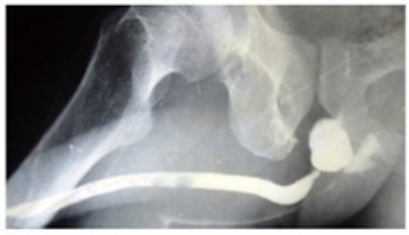


Fig-3a- fistulogram showing multiple urethral fistula w ith water caine perineum in patient with bulbar urethral stricture

fig-3c- MRI showing fistula tract communicating with urethra in same patient

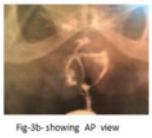
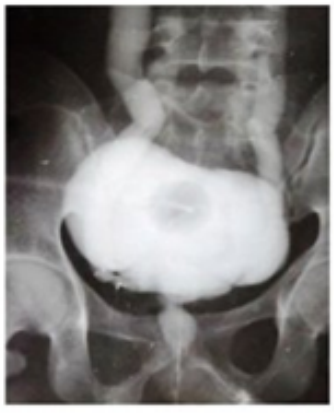


Fig-3b- showing AP view

Fig-3d- six month after S.P.C. ,RGU+MCU showing improved features

Fig-4. MCU showing grade 5 reflux in patient with bulbar urethral stricture



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Acknowledgements- nil

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