Clinical presentation and treatment of urethral stricture in Hawari Hospital.

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Abstract

Background: Urethral stricture disease (USD) is a common urological problem. and considered difficult to manage due to high recurrence rate and wide variety of management approach. The objective of this study was to assess the pattern of incidence, clinical presentation, causes, and treatment of urethral stricture in Hawari University Hospital Benghazi, Libya.

Patients and methods: This study was a retrospective cohort analysis conducted among consecutive individuals who were diagnosed and/or were treated for urethral stricture in Hawari University Hospital using medical data from January 1st 2017 to December 31st 2019.

Results: A total of 118 cases of urethral stricture were recorded between 2017 and 2019, The mean age of all patients was 47.5 years, approximate 98.2% were males and 1.69% were female, However, the peak incidence of occurring urethral stricture between 60-79 years of age and represents approximately 37.2%. The most common presenting symptoms were obstructive voiding symptoms and accounts about 50.8% of all cases. Eighty three of strictures (70.3%) were due to trauma. The most common procedures used to manage urethral strictures were visual urethrotomy (67.7%), cystoscopy and dilatation (19.4%), and urethroplasty (5%).

Conclusion: Trauma is the leading cause of urethral stricture in urology center. Iatrogenic strictures were common. Urethroplasty gives satisfactory outcome. Efforts should be made to reduce urethral stricture.

Key words: Urethral stricture disease, Management, Hawari University Hospital.

Introduction:

Urethral stricture is the narrowing of the calibre of the urethra caused by the presence of a scar consequent on infection or injury [1]. It is one of the commonest complications of urethral injuries [2]. and their risk increases with age [3]. The urethral mucosa is enveloped by corpus spongiosum. This blood-rich erectile tissue surrounds the urethra from the meatus to the bulbar urethra. As the spongiosum provides the vascular supply to the urethra, the degree of fibrosis in corpus spongiosum relates directly to the extent and severity of the stricture. This scar formation is progressive and is called spongiofibrosis [4]. A urethral stricture is formed when the spongiosal tissue is replaced by dense non-elastic collagen fibers interspersed with fibroblasts[5]. It is a common problem worldwide affecting mainly the male urethra [6]. Stricture disease can have profound impact on quality of life. It may lead to urinary tract infection, bladder calculi, fistulae, sepsis, and ultimately renal failure [7]. Urethral stricture could be congenital/idiopathic or acquired [8]. Acquired urethral strictures may arise from iatrogenic cases following catheterization, surgery or instrumentation; traumatic strictures from straddle injuries or pelvic fractures and infectious or inflammatory strictures caused by gonorrhoea or lichen sclerosis [8], [9], [10]. Evaluation starts with a detailed history and physical examination. Patients may be presented with history of obstructive voiding symptoms(histency, poor flow post-voiding dribbling incomplete emptying) , irritative voiding symptoms (frequency, urgency, nocturia), double streem , urine retention , over flow incontinenc. Retrograde or antegrade urethrography or both provide the length and location of the stricture and should be obtained prior to non-urgent intervention[11,12]. Dilation and direct visualization internal urethrotomy (DVIU) continue to predominate for intervention of urethral strictures. However, the failure rates of these minimally invasive strategies are well documented[13]. Urethroplasty is the most effective method for definitive correction of urethral stricture disease and this approach is generally considered to be the gold-standard of treatment [8], [14], [15].

In order to obtain more data on the nature of urethral stricture in benghazia Libya, we conducted a retrospective chart review of urethral stricture diagnoses from last three years (2017, 2018, 2019), and collecting information on patient's, incidence, age , clinical presentation, causes, and treatment.

Methodos and Materials

The study was a retrospective cohort analysis conducted among 118 individuals who were diagnosed and/or treated for urethral stricture in Benghazi, using medical data from January 1st 2017 to December 31st 2019.

The data were collected from the urethral stricture register maintained in Hawari University Hospital. The data collected from files were age and gender of patients, presenting symptoms, causes, diagnostic tool and type of treatment. This data were recorded and formulated in workflow sheet. An Excel based model was designed that included the collected data and the basic statistical procedures performed.

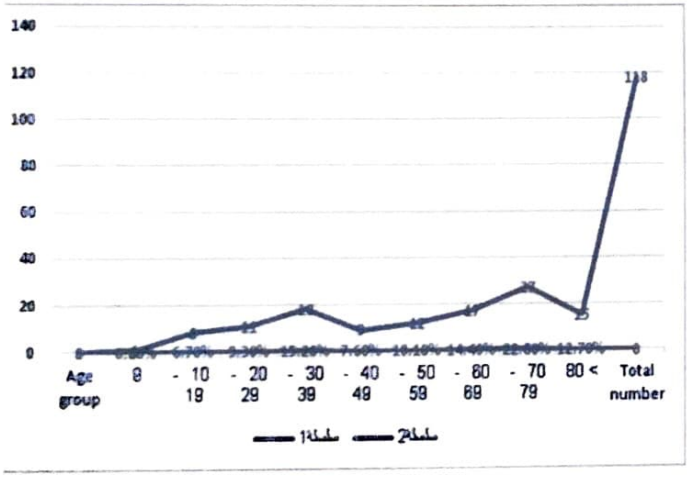
Results

The peak incidence of occurrence of urethral stricture was between 79-60 years of age and represents approximately %37.2 of all cases. The total number of cases was 118, the youngest patient recorted to have urethral stricture was 9 years and the oldest patient to 84 years old. The median age of patients was 47.5 years. [Table. 1& Figure. 1].

Table 1 shows the distribution of cases according to age.

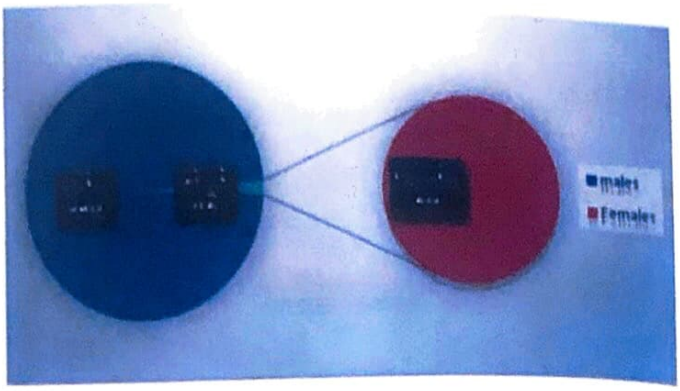
Age group	number	Percentage
9	1	0.80%
19 - 10	8	6.70%
29 - 20	11	9.30%
39 - 30	18	15.20%
49 - 40	9	7.60%
59 - 50	12	10.10%
69 - 60	17	14.40%
79 - 70	27	22.80%
80 <	15	12.70%
Total number	118	

Figure 1 shows the distribution of cases according to age groups.



The sex distribution of occurrence of urethral stricture as follow, 116 cases were males and 2 cases were females of different age groups which represents about (%98.2) and (%1.6) respectively. The majority of cases was males. [Figure.2].

Figure:- 2 sex distribution of patient

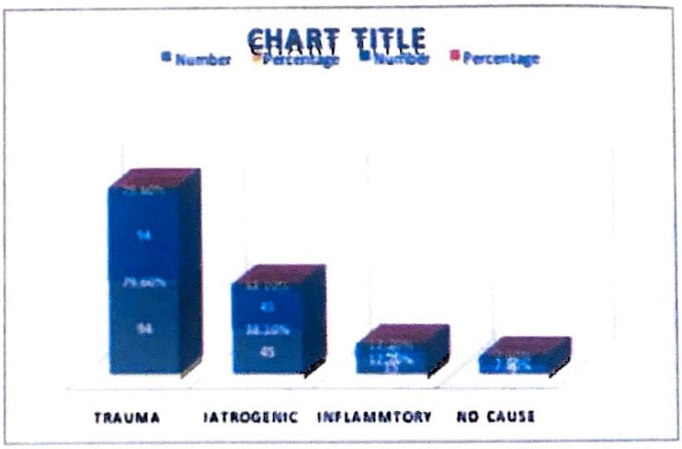


Trauma constituted the commonest aetiological factor for urethral stricture (n = %79.6 ;94). Of this, 45 patients' stricture (%38.1) were due to iatrogenic causes from poor techniques of urethral catheterization and endoscopy while the remaining 49 patients' stricture (%41.5) resulted from road traffic accident, pelvic fracture, fall astride injuries over blunt edges and explosive injury . Fifteen patients (%12.7) had post inflammatory urethral stricture while 9 patients (%7.6) there is no obvious cause. [Table.2 & Figure. 3]

Table 2 Shows the Aetiological factor of urethral stricture

Cause	Number	Percentage
Trauma	94	79.60%
Iatrogenic	45	38.10%
Inflammtory	15	12.70%
No cause	9	7.60%

Figure:- 2 sex distribution of patient



Obstructive voiding symptoms (O.V.S) was the most common symptom and presented in more than half of (n=%50.8 ,60) patients, 35 patients (%29.6) were presented with urine retention, while 21 patients (%17.7) were presented with history of Obstructive voiding symptoms and irritative voiding symptoms (I.V.S) and only 2 patients (%1.6) were presented with irritative voiding symptoms. [Table. 3 & Figure. 4] Almost of patient (n=%75.4 ,89) were diagnosed by ascending and descending urethrogram while 29 of patient (%25.5) were diagnosed by cystoscopy.[Figure. 5]

Direct vision internal urethrotomy (DVIU) was done for 80 patients (23 ,(%67.7 patients (%19.4) had serial urethral dilatation , urethroplasty was done for 6 patient (%5) and Suprapubic catheter was done for 9 patients (%7.6), because these patients was unfit for anesthesia. [Table. 4 & Figure. 6]

Table 3 shows the clinical presentations of urethral stricture.

Symptoms	Number	Percentage
O.V.S	60	50.80%
Urine retention	35	29.60%
O.V.S/I.V.S	21	17.70%
I.V.S	2	1.60%

Figure 4 shows the clinical presentations of urethral stricture.

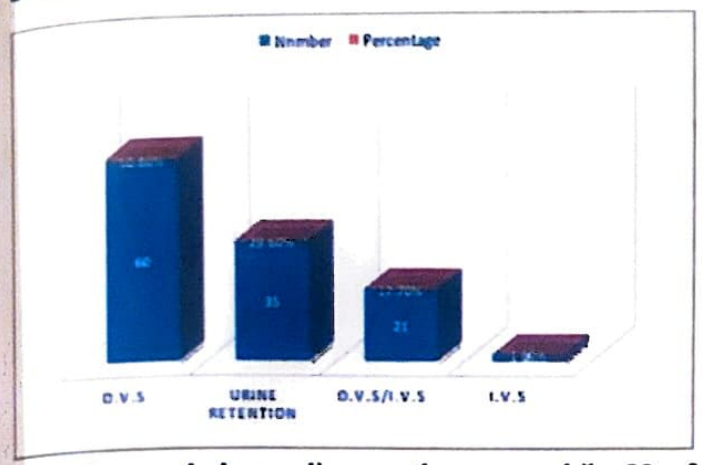


Figure 5 Shows diagnostic method of urethral stricture.

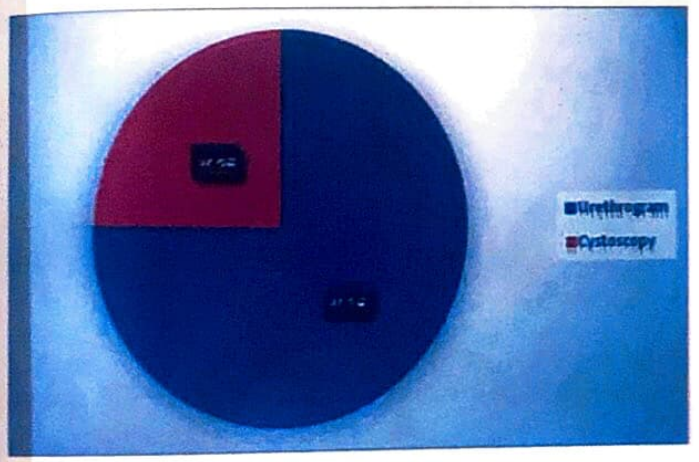
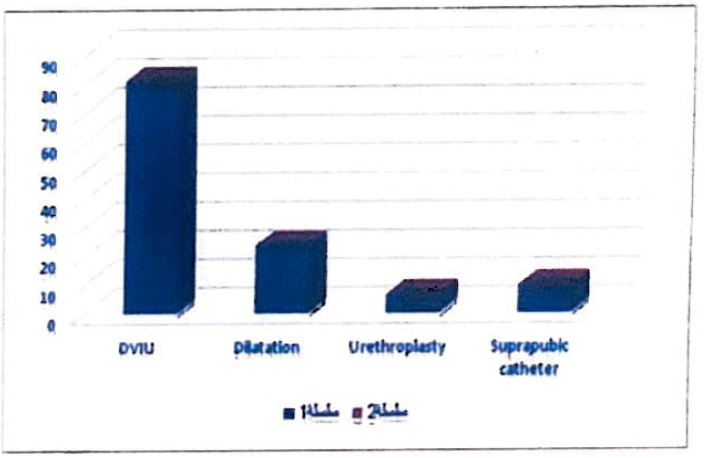


Table 4 shows Treatment modalities for urethral stricture.

Procedure	Number	Percentage
DVIU	80	67.70%
Dilatation	23	19.40%
Urethroplasty	6	5%
Suprapubic catheter	9	7.60%

Figure 6 shows Treatment modalities for urethral stricture.



Discussion

This study was aimed at revealing the incidence, clinical presentation, iatiology, and treatment of urethral stricture in the eastern Libyan city of Benghazi. The worldwide incidence of urethral stricture is Urethral stricture is a common disease in men [16]; it is rare in women [18] ,[17]. Since men have a longer urethra than women, urethral stricture is more common in men than women [19]. In this study, there was male preponderance with male to female ratio of 58:1. Stricture of the urethra has been reported to be more common in men less than 45 years [20]. the prevalence of Urethral stricture in our study increased with aging, reaching peak numbers in patients between the ages of 60 to 79 years, and decreasing after the age of 80 years. This observation may be attributed to the fact that trauma (iatrogenic) is the leading cause of the stricture in the study. All strictures in this study were acquired as has been reported elsewhere [22] ,[21]. At present, trauma is the leading cause of stricture worldwide [24] ,[23]. Inflammatory conditions have been implicated in some arrears of Africa [25] ,[9]. More than %79 of patients in this study had post-traumatic urethra stricture disease, this distantly followed by inflammatory causes in 15 patients. The main causes of trauma in this study were road traffic accidents with associated pelvic fracture, fall astride objects, gunshot injuries or explosive injury to

the perineum and Iatrogenic injuries. Iatrogenic causes of urethral stricture are rising [26]. Iatrogenic injuries caused by wrong sized, poorly lubricated urethral catheters, the balloons of some of these catheters were sometimes inflated within the urethral lumen, inexperienced heath personnel, and urinary tract instrumentation (cystoscopy, transurethral resection of prostate, transurethral resection of bladder tumor). Post-inflammatory strictures did not play as much role in this study as has been previously reported [25]. Use of antibiotics for treatment of urethritis reduces that progression to spongiofibrosis and strictures. This may be responsible for the observed low contribution of inflammation as a major cause of USD in this study. Retrograde or antegrade urethrography or both provide the length and location of the stricture and should be obtained prior to non-urgent intervention[12],[11]. the management of urethral strictures has undergone significant changes. Currently, minimally invasive methods are the most commonly used [3], which is in line with findings from our survey of urologists in benghazia, libyia. For example, we found that internal urethrotomy and dilatation were the most commonly performed procedures in the past year. These results are similar to those of nationwide surveys of urologists in the Netherlands, Italy, and Turkey [27,28,29] as well as those of a survey demonstrating that dilatation and internal urethrotomy are the most commonly used procedures in the US. Although internal urethrotomy and dilatation differ procedurally, it has been suggested that they have similar recurrence rates [30]. Direct visual internal urethrotomy (DVIU), which was first described in 1974 by Sachse, has, in particular, become a widely popular and safe procedure that is frequently used for the primary management of urethral strictures [31]. Direct vision internal urethrotomy (DVIU) is performed by making a cold-knife transurethral incision to release scar tissue, allowing the tissue to heal by secondary intention at a larger caliber and thereby increasing the size of the urethral lumen [32]. In this study, 80 patients (%67.7) had DVIU with all patients had urethral catheterization after the procedure. Several methods for urethral dilation exist, including dilation with a balloon, filiform and followers, urethral sounds, or self-dilation with catheters [32]. Urethral sounds were commonly used in this centre. Twinty three patients (%19.4) had this procedure. The indication included patients with short-segment USD; who did not accept definitive surgical treatment or who were not suitable for major surgery [33]. Urethroplasty is the gold standard for the treatment of urethral stricture disease [,[34] ,[8 35]]. The choice of technique for urethroplasty for an individual case largely depends on the expertise of the surgeon, size and site [36]. In this study sex patients (%5)had urethroplasty.

Conclusions

In conclusion, Urethral stricture occurred in all age groups. and is more prevalent among males. At the time where control of the main risk factors have resulted in a decline of urethral stricture incidence. Trauma was the leading cause in our environment. Iatrogenic strictures were significant. urethroplasty was the mainstay of treatment with satisfactory outcome. Direct vision internal urethrotomy and dilatation were the most commonly performed procedures in the past year , and has been gaining acceptance for single, short segment urethral stricture. Post-operative follow-up record has been poor in the past.

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Ethical approval: - This study was approved by the Medical Research Committee of Hawari University Hospital.

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Russia starts production of 1st coronavirus vaccine

and officially registered the world's first coronavirus vaccine, developed by the Gamaleya Research Institute of Epidemiology and Microbiology

The vaccine, called Gam-Covid-Vac, standing for "Gamaleya Covid Vaccine," is designed to be administered through two injections to prolong the immunity

The difference in the doses is the type of adenovirus used to deliver the vaccine to the body's cells

For maximum effect, the immunization agents have to be injected at an interval of two or three weeks, giving the immune system time to calm down after activation, provoked by the introduction of foreign substances

According to its instruction for use, the vaccine is and 60 and 18 suitable for people aged between can be combined with other antigens, including against the flu

The vaccine recipients will be monitored by doctors, and a mobile app is also being developed so patients can routinely add data about their condition and quickly inform doctors of possible complications