

Endoscopic Internal Urethrotomy in the Treatment of Male Urethral Stenosis in the Urology-Andrology Department of KARA Teaching Hospital (Togo)

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Abstract

Introduction: Endoscopic internal urethrotomy (EIU) is a method for stricture opening using transurethral incision by direct visualisation of the urethral channel, resulting in a widening of the urinary canal with the aim of improving the quality of bladder emptying. The aim of the study was to evaluate the indication and results of EIU in the treatment of stenosis of the male urethra in the Urology-Andrology Department of Kara Teaching Hospital. **Methodology:** This was a cross-sectional descriptive study with retrospective data collection in the Urology-Andrology department of Kara Teaching Hospital. It involved 21 records of patients with urethral stenosis treated by endoscopic internal urethrotomy (EIU) in the said department during the period from January 2021 to September 2023. The following variables were evaluated: age, circumstance of discovery, site, length, number, etiology of the urethral stenosis and evolution of the patients. **Results:** The mean age of the patients was 59.2 ± 11.7 years. Infectious etiology of stenosis was predominant with 10 patients (47.6%) followed by trauma with 5 cases (23.8%). The bulbar urethra was the most frequently observed site, with 11 cases (52.4%). The length was mostly less than 2 cm in 12 patients (57.1%). Stenosis was unique in 14 patients (66.7%). The mean postoperative follow-up

time was 3.2 months. The result was immediately better in 11 patients (52.4%) and it was poor in 8 patients (38.1%) who required maintenance dilation sessions.

Keywords

Internal Urethrotomy, Urethral Stenosis, Kara, Togo

1. Introduction

Treatment of urethral stenosis involves several techniques, including instrumental dilations, urethroplasty, stents and endoscopic internal urethrotomy (EIU) [1] [2]. The indication takes into account the age of the patient, the site of the stenosis and its length. The EIU is a method for stricture opening using transurethral incision by direct visualisation of the urethral channel, resulting in a widening of the urinary canal with the aim of improving the quality of bladder emptying [3] [4]. It is simple, and repeatable, with simple operative outcomes, enormously shortening the hospital stay [5]. The indications for endoscopic urethrotomy are therefore: short stenosis, single, bulbar urethra site, still passable with the blade, which and is operated for the first time [1] [2] [6] [7]. The aim of the study was to evaluate the indication and results of endoscopic internal urethrotomy in the treatment of stenosis of the male urethra at the Urology-Andrology Department of Kara Teaching Hospital.

2. Patients and Methods

This was a cross-sectional descriptive study with retrospective data collection carried out in the urology department of the Kara Teaching Hospital Center. It focused on 21 files of patients with urethral stenosis, treated by endoscopic internal urethrotomy (EIU) in the said department during the period from January 2021 to September 2023. All patients operated on by the EIU who had a complete file and who had benefited from follow-up after the surgical procedure were included in this study.

For each patient, the following variables were evaluated: age, circumstances of discovery, site, length, number, etiology of the stenosis and evolution of the patients. The diagnosis of urethral stenosis was suggested by the symptoms of the lower urinary tract, weakness of the urinary stream, incomplete emptying of the bladder, and dysuria and confirmed by retrograde urethrography (RUG) and voiding cystourethrography (VCUG) which was carried out preoperatively in 17 patients. In 4 patients, the discovery of stenosis was intraoperative following transurethral resection of the prostate (TURP). Under loco-regional anesthesia (spinal anesthesia), the urethrotomy was performed using the cold blade urethrotome, by sectioning the stenosis at 12 o'clock under visual control. The CH18 or 20 Silicone Foley Catheter was left in place and after its removal, success was

assessed based on improvement in urinary symptoms. Thus, the result was better when urination was satisfactory, poor result when it was improved and unchanged dysuria requiring repeat urethrotomy or urethroplasty was considered a failure.

Retrograde urethrography (RUG) and voiding cystourethrography (VCUG) were not performed in the postoperative period. Due to a lack of materials, the urinary flowmetry was not carried out either.

3. Results

During our period, 35 patients with urethral stenosis were operated on, including 21 cases of endoscopic internal urethrotomy, or 60% of cases (**Figure 1**).

The mean age was 59.2 ± 11.7 years. The extremes were 35 years for the youngest and 75 years for the oldest. Of the 21 patients, 14 (66.7%) were seen with urinary retention requiring a suprapubic drainage catheter and 7 patients (33.3%) had dysuria alone or associated with other lower urinary tract symptoms.

The infectious etiology of the stenosis was predominant with 10 patients (47.6%) followed by trauma with 5 cases (23.8%). **Table 1** shows the etiologies of stenosis.

Concerning the characteristics of the stenosis (**Table 2**), the bulbar urethra was the most frequently observed site with 11 cases (52.4%). The length was mainly less than 2 cm in 12 patients or 57.1% of cases. The stenosis was single in 14 patients or 66.7% of cases. The diagnosis of urethral stenosis was made using retrograde urethrography (RUG) and voiding cystourethrography (VCUG) performed preoperatively in 17 patients, or 80.9% of cases, while in 4 patients (19.1%) the discovery of stenosis was intraoperative during transurethral resection of the prostate (TURP). The average hospital stay was 5.2 days with the range from 1 to 14 days. The time to remove the urethral catheter varied between 3 and 30 days depending on whether the cases were simple or complex with an average of 15.1 days. The mean postoperative follow-up time was 3.2 months with a variation of 1 to 7 months.

The result was immediately good (**Table 3**) in 11 patients (52.4%), and it was considered poor in 8 patients (38.1%) who required maintenance dilation sessions.

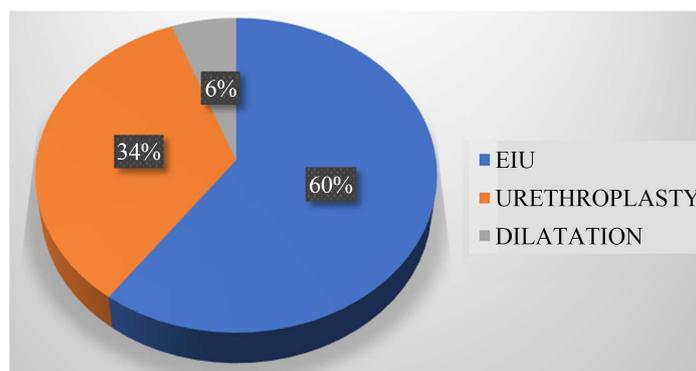


Figure 1. Methods of urethral stenosis management.

Table 1. Distribution of cases according to etiologies of urethral stenosis.

Etiology	Number of cases	%
Infectious	10	47.6
Traumatic	5	23.8
Iatrogenic	3	14.3
Not specified	3	14.3
Total	21	100.0

Table 2. Characteristics of the urethral stenosis.

Characteristics	Number of cases (N = 21)	%
<u>Site of stenosis</u>		
Bulbar urethra	11	52.4
Membranous urethra	4	19.0
Bulbar + Membranous urethra	4	19.0
Prostatic urethra	1	4.8
Anastomosis urethra and bladder post radical prostatectomy	1	4.8
<u>Length of stenosis</u>		
≤2 cm	12	57.1
>2 cm	6	28.6
Not specified	3	14.2
<u>Number of stenosis</u>		
Single	14	66.7
Multiple or complex	7	33.3

Table 3. EIU results.

Results	Number of cases	%
Success	11	52.4
Poor	8	38.1
Fail	2	9.5
Total	21	100.0

4. Discussion

The treatment of urethral stenosis involves several procedures including instrumental dilations, open surgery, stents and internal urethrotomy [8]. Endoscopic internal urethrotomy has the advantage of being simple, easy and quick. It is free

of morbidity and requires only a short hospitalization [1] [9]. The performance of EIU is increasing at the Kara Teaching Hospital, from 14 cases (58.3%) the previous two years [10] to 21 cases (60%) today. The mean age of the patients was 59.2 ± 11.7 years. This result is similar to those of DJE in Ivory Coast and MUSTAFA in Turkey, which respectively report a mean age of 55 and 57 years [5] [11].

Unlike other series in which the young population was mainly reported [1] [6] [8]. Urethral stricture only appears several years after the infectious episode, which was also the main etiology found in our study with 10 cases (47.6%). Infection remains the main cause found in most African series [1] [5] [8] [13] [14].

The bulbar urethra was the frequently observed site of stenosis with 11 cases (52.4%). This urethral part was also mentioned by JANVIER in Spain and ASHRAF in Egypt, as the preferred site of stenosis with respectively 53.3% and 48.4% [15] [16]. The bulbar dilatation constituting a reservoir where germs abound due to urinary stasis could explain this predilection [5] [17]. The stenosis was short, less than 2 cm in 12 patients (57.1%) and mainly single in 14 patients (66.7%). In his series, BENJELLOUN in Morocco reports the same observation, noting the predominance of short (70.7%) and single (80.9%) stenosis [1]. ASHRAF in Egypt and BENIZRI in France in their studies found single stenosis in 80.6% and 90.2% of cases respectively [16] [18]. These results comply with the recommendations from the urogenital reconstruction urologist group, which limit the indications for EIU to short bulbar stenoses (<2 cm) and operated for the first time [3].

The hospital stay is generally short but varies depending on the studies. In our study, the average was 5.2 days, identical to that reported in the BENJELLOUN series [1] and close to that of DJE in Ivory Coast (6.8 days). Endoscopic internal urethrotomy can be performed on an outpatient basis and under local anesthesia without the need for hospitalization [2] [5] [12]. For our study, the majority of patients come from distant places and are operated on weekends and monitored before being discharged at the beginning of the week, which could explain their prolonged hospital stay.

The average time of the bladder catheter was 15.1 days. It is similar to the one mentioned in MOBY's studies [19] in Cameroon and DJE [5] in Ivory Coast, which was 14 days; BENIZRI in France reports an average time of 10 days. Although the recommended catheterization time is less than 72 hours [1] [14], opinions are very divergent and range from refusing any use of the catheter, to indwelling the catheter for 6 weeks with different results [2]. The bladder catheter may be left longer for the patient's comfort or if the operator believes that early removal may increase complications [3].

The result was best in 11 patients (52.4%) and considered poor in 8 patients (38.1%) requiring maintenance urethral dilation. In their series, ZANGO and BENJELLOUN report the best results in 67.3% and 75.4% of cases respectively. The factors associated with the best results noted by several authors [14] [16] are the length of the stenosis less than 1 cm, the infectious etiology, the single steno-

sis of the bulbar site.

Studies are currently being tested to reduce the rate of recurrence after endoscopic internal urethrotomy. The injection of steroids (triamcinolone acetonide) may delay the recurrence of urethral stricture [20]. A systematic review showed the effectiveness of mitomycin-C in reducing the number of cases of recurrence [21].

5. Conclusion

Endoscopic internal urethrotomy is a simple, repeatable technique, with simple operative outcomes, enormously shortening the hospital stay. The results are better when the stenosis is short, single localized at the level of the bulbar urethra.

Conflicts of Interest

The authors declare that they have read the latest version of the manuscript and declare no conflict of interest.

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