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Management of Urethral Stenosis in Men: Experience of the Regional University Hospital of Ouahigouya (Burkina Faso) about 35 Cases

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Abstract

Objective: To describe the management of urethral stenosis in the urology-andrology department of the Regional University Hospital Center of Ouahigouya (CHUR/OHG). **Method:** retrospective study, with a descriptive aim, conducted over a period of four (4) years, extending from January 1, 2021 to December 31, 2024 in the urology-andrology department of the (CHUR/OHG). **Result:** 35 patients with urethral stenosis were treated during these four years, *i.e.* an annual frequency of 8.75 cases. The age of the patients ranged from 21 to 89 years with a mean age of 52.54 ± 21.22 years. The most represented age group was 61 to 70 years old. The majority of patients were farmers (57.14%) and came from urban areas in 54.29% of cases. The main reason for consultation was complete urinary retention, observed in 82.86% of patients. Regarding the history, 58.33% of patients had undergone a bladder catheterization, while 41.67% had a previous perineal trauma. The most frequent involvement concerned the bulbar urethra, in 57.14% of cases. Therapeutically, termino-terminal anastomotic resection was the most widely used surgical technique, accounting for 70.59% of the interventions, with a success rate of 91.7%. **Conclusion**: Urethral stenosis is a pathology that mainly affects adults. In our study, the bulbar urethra was the preferred site of this condition and termino-terminal anastomotic resection was the most frequently used therapeutic technique.

Keywords

Urethral Stenosis, Epidemiology, Clinical, Therapeutic, CHUR-OHG

1. Introduction

Urethral stricture, or narrowing of the urethra, is defined as a permanent reduction of the urethral caliber, leading to complete or partial obstruction of the normal flow of urine. This condition can involve a limited portion of the urethra or its entire length [1]. Considered one of the oldest pathologies of the urinary tract [2], it causes significant psychological, socio-professional, and financial repercussions. Its prevalence varies by country and has evolved with the improvement of diagnostic tools. While studies on this subject remain rare in Western countries, several African studies highlight the high frequency of urethral stricture [3]. Of multifactorial origin, it can be congenital or acquired. Diagnosis is based on lower urinary tract symptoms, and retrograde and voiding urethrocystography (RVUCG) remains the reference examination to confirm it. From a therapeutic point of view, anastomotic urethroplasty is recognized as the technique of choice for short bulbar strictures. The present work reports the experience of CHUR-OHG in the management of this pathology.

2. Methods

This was a cross-sectional study involving retrospective descriptive data collection. The study covered the period from January 1, 2021, to December 31, 2024 (4 years). The study included all patients who received treatment for urethral stricture in the Urology and Andrology Department of the CHUR at the OHG during the study period. Data were collected retrospectively from patients' clinical records and surgical reports (CRO) using a data collection form developed for this purpose. The data were entered and analyzed using STATA software version 17. The figures and tables were created in Microsoft Excel 2007 on Windows 8.

3. Results

Over a period of 4 years, 35 cases of urethral stenosis were treated in the urology department of the Ouahigouya University Hospital with an annual frequency of 8.75 cases.

The mean age of patients was 52.54 ± 21.22 years with extremes of 21 years and 89 years (Figure 1).

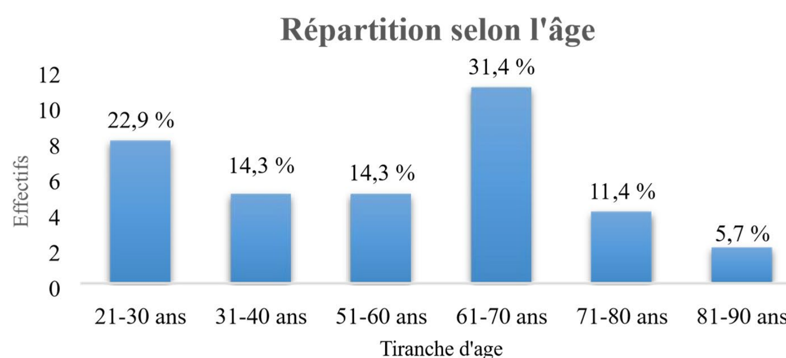

Figure 1. Age distribution.

Of all these patients, 88.6% of them were married and all professions were represented.

Nineteen (19) patients lived in urban areas (54.3%) and sixteen (16) patients in rural areas (45.7%). Out-of-school patients accounted for 85.71%.

Table 1 shows the reasons for consultation.

Table 1. Reason for consultation.

Reason for consultation	Frequency	Percentage (%)
Complete bladder retention	29	82.8
Incomplete bladder retention	3	8.6
Dysuria	3	8.6
Total	35	100

Table 2 presents the causes found in patients.

Table 2. Causes of stenosis.

Etiologies	Frequency	Percentage (%)
Post-catheterization	14	40
Infectious	6	17.1
Not found	5	14.3
Traumatic/AVP	5	14.3
Traumatic/landslide	5	14.3
Total	35	100.00

In the infectious etiology, the ECBU has isolated *Escherichia coli* as the most frequent germ *i.e.* 83.3% of cases. The RVUCG allowed us to confirm the stenosis in all cases.

Table 3. RVUCG results.

RVUCG	Number (n = 35)	Percentage (%)
Bulbar urethral stricture	20	57.1
Penile urethral stricture	6	17.1
Penobulbar urethral junction narrowing	5	14.3
Membranous urethral stricture	4	11.4

The most frequent intervention time in our series was more than 70 days in more than 50% of cases.

Thirty-four patients and 34 patients received surgical care.

Twelve (12) patients received general anesthesia (34.3% of patients), twenty-three (23) patients received isolated spinal anesthesia (65.7% of patients) and four

patients received spinal anesthesia combined with general anesthesia. The perineal approach was the most used in our study series, *i.e.* 77.14% (n = 27) of cases followed by the penile approach in 22.86% (n = 8).

Anastomotic urethroplasty was the most used technique in our study series, *i.e.* 70.6% of cases. Table 4 shows the frequency and type of urethroplasty.

Table 4. Type of urethroplasty.

1-step urethroplasty	Frequency	Percentage (%)
Anastomotics	24	70.6
With free graft (buccal)	8	23.5
Endoscopic internal urethrotomy	1	2.9
With pedicled graft (penile)	1	2.9
Total	34	100.00

Thirty-four (34) patients underwent urethroplasty, including 25 anastomotic urethroplasties, and one (1) patient underwent dilation using a Benique sound.

The immediate postoperative follow-up was simple in 88.57% of cases. Four patients developed complications, including two cases of spontaneous expulsion of the urinary catheter on postoperative day 1 and day 7; a case of perineal hematoma; a case of perineal suppuration. The majority of our patients, 68.6%, had a hospitalization duration of between 5 and 10 days and a post-operative catheter wearing duration of between 15 and 30 days, *i.e.* 60% of cases.

The long-term evolution was good in thirty-two (32) of our patients, *i.e.* 91.4% of cases. The results were satisfactory in the majority of cases with a success rate of 91.43% at postoperative M6 compared to 8.57% failure.

4. Discussion

In four years, we collected 35 cases of urethral stenosis treated in the urology department of the CHUR of OHG. The annual frequency of urethral stenosis was 8.75 cases per year. The most represented age group was between 61 and 70 years old. Our results, comparable to those reported in many previous studies [1]-[7] suggest a certain homogeneity of epidemiological profiles in West African hospital contexts. It should be noted that the frequency of urethral stenosis is high in patients over 50 years of age. This could be explained by the fact that at this age, prostate pathologies become more frequent, including benign prostatic hyperplasia which may require urological interventions or repeated catheterization, thus increasing the risk of urethral lesions. In addition, chronic or recurrent urinary tract infections, often associated with bladder emptying disorders, are thought to promote inflammation and fibrosis of the urethra. Finally, tissue aging itself can impair the regenerative capacity of the urethral epithelium, making patients more vulnerable to stenosis.

Bladder retention was the frequent reason for consultation. This is easily un-

derstandable and could be explained by the delay in consultation. It was complete in 29 cases and incomplete in 3 cases. Kabore *et al*. found the same reason for consultation, *i.e*. 32.4% [3]. This high proportion reflects the often acute nature of urethral stenosis, which can lead to total urinary obstruction requiring urgent intervention. This distribution suggests that urethral stenosis is often diagnosed at an advanced stage. Thirty-two (32) of our patients have had a first cystostomy performed before the actual stenosis is managed.

Retrograde and voiding urethrocystography (RVUCG) has been systematically performed in our patients. This imaging examination, which remains a reference diagnostic tool, made it possible to precisely locate the site of the stenosis (**Table 3**), the number but also to determine the degree of narrowing of the urethral canal. The RVUCG did not specify the lengths of the stenosis. This information is essential to guide surgical management (urethrotomy, dilation, reconstructive surgery) [8]. The bulbar urethra was the most affected portion in 57.14% of cases compared to 17.14% of cases for the penile urethra. These results were similar to those in the literature. Indeed, Tengue *et al*. [4] and Traore *et al*. [7] reported in their studies that the bulbar urethra was the most affected portion in 68.4% and 45.23% of cases, respectively.

Post-bladder catheterization of the urethra was the first cause of urethral stenosis in our series, *i.e*. 40% of cases. In the literature, urethral trauma related to bladder catheterization is generally due to either:

- poor catheter placement technique (first urinary survey of a man by non-medical healthcare staff, lack of lubrication, forced insertion, inflated balloon in the urethra, false routes).
- the use of unsuitable, too large or too rigid catheters.
- repeated or prolonged catheterization, resulting in chronic inflammation of the urethra.

These different factors can cause microtrauma, ulcerations or tears in the urethral mucosa, progressing to scarring fibrosis responsible for stenosis.

In Burkina Faso, in our context of insecurity, our health pyramid and the delegation of tasks, the majority of patients are surveyed on the outskirts or they have at least benefited from an attempt at catheterization before being referred. However, the catheterization of the male urethra requires some experience, especially the first catheterization. Trauma to the urethra secondary to trauma to the perineum or pelvis related to landslides and road accidents (AVP) represents 28.57% of the causes found in our cohort. Studies conducted by Diarra [9], Zongo *et al*. [10] and Fall *et al*. [11] had found respectively 26%, 13% and 13.7% of cases of traumatic origin. Urethral stenosis secondary to perineal trauma related to landslides or road accidents (AVP) occurs in conditions of compressive hematomas, local ischemia due to tissue crushing, promoting necrosis and fibrosis. Infectious etiology was not found in 73.91% of patients. Only six (6) patients had a positive cytobacteriological test result (26.09%) and there were different germs (*Escherichia coli and Klebsiella pneumoniae*). The high proportion of sterile cultures could be ex-

plained by early antibiotic therapy before cytobacteriological examination of urine (ECBU) preventing bacterial growth. Among positive cultures, *Escherichia coli* was the predominant germ, accounting for 83.33% of cases. These results are similar to those in the literature [5] [12]. Studies conducted in the subregion had found infectious etiology as the main cause of urethral stenosis. Dje *et al.* in Côte d'Ivoire [13], Mbuya *et al.* in Togo [14], Agounkpe *et al.* in Benin [15], respectively recovered 87.05%; 47.6%; 44.3% and cases of infectious origin. Our results were different from those of the sub-regional literature. This difference could be explained by the improvement in the management of sexually transmitted infections, the age of the patients which means that traumatic and iatrogenic etiologies are in the foreground, the diagnostic insufficiency of urinary tract infections (5 patients were unable to perform ECBU), and the size of the different cohorts.

Therapeutically, only one (1) person benefited from dilation benique, another person from endoscopic internal urethrotomy (UI). In our series, eight (8) patients underwent urethroplasty with buccal flap with a 100% success rate. The operative indications were long and/or complex stenosis. Anastomotic urethroplasty was performed in twentyfour (24) patients, *i.e.* 70.59% of cases with a success rate of 91.7%. The operative indications were an estimate of the length of the stenosis which was ≤2 cm. These results were close to those of Jah *et al.* [16] and Bissari *et al.* [17] who had found a rate of 60% and 93.8% respectively for this technique. On the other hand, a study carried out by Yaméogo *et al.* [5] and Kaboré *et al.* [3] found a rate of 39.7% and 30.8% respectively for this technique. Anastomotic urethroplasty is a therapeutic approach of choice, particularly indicated in bulbar urethral stenosis. It offers a high success rate, estimated at between 90 and 98% after five years in the literature, with lasting results in the long term [18].

In our series, the immediate postoperative follow-up was simple in 88.57% of cases. Complications observed were rare and included wound suppuration in one case, premature urinary catheter drop in two cases, and perineal hematoma in one case. At six months of postoperative follow-up, the overall success rate was estimated at 91.43% while three patients (8.57%) had a recurrence or an unfavorable outcome. These results confirm the reliability of the techniques used in our context, with a low complication rate and a good success rate after follow-up. However, even in the presence of a satisfactory initial result, it could deteriorate over time due to the process of progressive fibrous sclerosis of the urethra, favored by the chemical aggression of the urine at the site of the anastomosis and which may require maintenance of the caliber by dilation and UI. Patient follow-up will be maintained for a maximum duration of two years, at the end of which a comprehensive reassessment of the outcomes will be performed.

Three (3) failures encountered, *i.e.* 8.57% of cases. These results were similar to those of Samaké who reported a failure rate of 6.7% in his study [19]. However, a study carried out by Dembélé found different results with a failure rate of 4% [20]. The failures observed in our series could be explained by several factors such as the location of the stenosis (membranous urethra) without forgetting the two cath-

eter drops in the immediate postoperative period.

5. Conclusions

Stenosis of the urethra is a condition encountered at the Regional University Hospital Center (CHUR) of Ouahigouya and its management is effective in the urology-andrology department of the said center.

This study allowed us to take stock of the epidemiological, diagnostic and therapeutic aspects of urethral stenosis. Effective care, with a high overall success rate, gives hope in the face of this pathology.

Statement

The study had been approved by the CHURO's medical ethics committee.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Ngaroua, N., Eloundou, N.J., Djibrilla, Y., Asmaou, O. and Mbo, A.J. (2017) Aspects épidémiologiques, cliniques et prise en charge de sténose urétrale chez l'adulte dans un Hôpital de District de Ngaoundéré, Cameroun. *Pan African Medical Journal*, **26**, Article No. 193. https://doi.org/10.11604/pamj.2017.26.193.9669

[2] Favorito, L.A. (2017) Urethral Stricture: The Oldest Urologic Disease in 2017. *International Brazilian Journal of Urology*, **43**, 1-2. https://doi.org/10.1590/s1677-5538.2017.01.01

[3] Kaboré, F.A., Zango, B., Paré, A.K., Kirakoya, B., Kambou, T., Ouattara, A., *et al.* (2015) Retrospective Analysis of the Surgical Treatment of a Series of 148 Cases of Male Urethral Strictures in Burkina Faso. *Uro'andro*, **1**, 200-210.

[4] Tengue, K., *et al.* (2014) Stenosis of the Male Urethra: Epidemiological, Diagnostic, Therapeutic and Evolutionary Aspects at the Sylvanus Olympio University Hospital in Togo. *Journal de la Recherche Scientifique de l' Université de Lomé*, **16**, 2.

[5] Yaméogo, C.A.M.K.D., Mahamat, M.A., Kirakoya, B., Ouattara, A., Traoré, T.M., Ky, B., *et al.* (2020) Male Urethral Strictures in Ouagadougou (Burkina Faso): Epidemiological Diagnostic and Therapeutic Aspects. *Open Journal of Urology*, **10**, 101-110. https://doi.org/10.4236/oju.2020.104012

[6] Halidou, M., Adamou, H., Hassane, D., Doutchi, M., Magagi, I.A., Adakal, O., *et al.* (2020) Profils Épidémiologiques, Cliniques et Thérapeutiques de la Sténose Urétrale de L'homme à l'Hôpital National de Zinder (HNZ), Niger. *European Scientific Journal ESJ*, **16**, 103-115. https://doi.org/10.19044/esj.2020.v16n9p103

[7] Traore, S.I., Dembélé, O., Maiga, A., Traore, S., Diallo, A.B., layes, T., *et al.* (2019) Prise en charge du rétrécissement urétral acquis: Expérience du Service de Chirugie Générale de Sikasso. *Pan African Medical Journal*, **33**, Article No. 328. https://doi.org/10.11604/pamj.2019.33.328.16724

[8] Morel-Journel, N., Neuville, P., Fourel, M., Madec, F., Carnicelli, D., Couteau, N., *et al.* (2024) Diagnosis and Evaluation of Anterior and Posterior Urethral Stenosis in Men: Clinical and Radiological Aspects. *The French Journal of Urology*, **34**, Article ID: 102721. https://doi.org/10.1016/j.fjurol.2024.102721

[9] Diarra, M. (2022) Etiologies and Management of Urethral Stricture in the Urology Department of the University Hospital Prof. BSS of Kati. Medical Thesis, University of Science, Technology and Technology of Bamako.

[10] Zango, B., Kambou, T. and Sanou, A. (2002) Endoscopic Internal Urethrotomy at the Sanou Souro National Hospital Center in Bobo-Dioulasso: Feasibility, Safety and Results. *African Journal of Urology*, **8**, Article No. 4.

[11] Fall, B., Sow, Y., Mansouri, I., Sarr, A., Thiam, A., Diao, B., *et al*. (2011) Etiology and Current Clinical Characteristics of Male Urethral Stricture Disease: Experience from a Public Teaching Hospital in Senegal. *International Urology and Nephrology*, **43**, 969-974. https://doi.org/10.1007/s11255-011-9940-y

[12] Sapira, M.K. (2024) Male Urethral Stricture Disease in a Tertiary Hospital in Port Harcourt, Nigeria: A Five-Year Review of Features, Management and Outcome. *World Journal of Biology Pharmacy and Health Sciences*, **18**, 214-226. https://doi.org/10.30574/wjbphs.2024.18.1.0184

[13] Dje, K., Coulibaly, A., Coulibaly, N. and Sangaré, I.S. (1999) Endoscopic Internal Urethrotomy in the Treatment of Acquired Urethral Stricture of Black African about 140 Cases. *Black AFR Medicine*, **46**, 217-222.

[14] Mbuya, M.É., Sikpa, K.H., Sewa, E.V., Agbedey, M.S., Botcho, G., Tengue, K., *et al*. (2024) Endoscopic Internal Urethrotomy in the Treatment of Male Urethral Stenosis in the Urology-Andrology Department of KARA Teaching Hospital (Togo). *Open Journal of Urology*, **14**, 20-26. https://doi.org/10.4236/oju.2024.141003

[15] Agounkpe, M. (2015) Epidemiological and Diagnostic Aspects of Male Urethral Stricture at the Hubert Koutoukou Maga National Hospital and University Center in Cotonou. *Open Journal of Urology*, **15**.

[16] Jah, A., Camara, K., Sowe, B., Anderson, P. and Takure, A. (2025) Urethroplasty in a Single Centre in the Gambia: Demography, Techniques and Outcomes. *African Journal of Urology*, **31**, Article No. 40. https://doi.org/10.1186/s12301-025-00511-z

[17] El Bissari, Z. (2019) Stenosis of the Anterior Urethra: About 30 Cases. Doctoral Thesis in Medicine, Faculty of Medicine and Pharmacy of Fez, Thesis n°034/19.

[18] Robine, E., *et al*. (2017) Analysis of the Success Rates of Urethroplasty for Bulbar Urethral Stenosis in Adult Men: A Systematic Review of the Literature. *Progrès en Urologie*, **27**, 49-57.

[19] Samaké, M.O. (2008) Epidemio-Clinical and Therapeutic Study of the Narrowing of the Posterior Urethra in Men at the Point "G" University Hospital on 30 Cases. Medical Thesis, University of Bamako, Faculty of Medicine, Pharmacy and Odonto-Stomatology.

[20] Dembélé, A. (2009) Urethral Strictures in Men in the Urology Department of the Point-G University Hospital: About 50 Cases. Faculty of Medicine, Pharmacy and Odonto-Stomatology, University of Bamako. https://www.bibliosante.ml/handle/123456789/8853