

Management of Urethral Stenosis at Islamic Clinic of Ngaoundere

Ngaroua^{1,2*}, Auréole FN², Yaouba D² and Joseph EN³

¹Faculty of Medicine and Biomedical Sciences of Garoua, University of Garoua, Cameroon

²Department of Morphological Sciences and Pathological Anatomy, Cameroon

³Faculty of Medicine and Biomedical Sciences, University of Yaoundé 1, Cameroon

*Corresponding author:

Pr Ngaroua,
Faculty of Medicine and Biomedical Sciences of
Garoua, Department of Morphological Sciences
and Pathological Anatomy, University of Garoua,
Cameroon, Tel: (237) 699 978 351;
E-mail: mdngaroua2007@yahoo.fr

Received: 07 Jan 2023

Accepted: 27 Feb 2023

Published: 06 Mar 2023

J Short Name: COS

Copyright:

©2023 Ngaroua, This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and build upon your work non-commercially.

Keywords:

Urethral stenosis; Urethroplasty; Endoscopic internal urethrotomy

Citation:

Ngaroua. Management of Urethral Stenosis at Islamic Clinic of Ngaoundere. Clin Surg. 2023; 9(1): 1-5

1. Summary

1.1. Introduction: Urethral stenosis is a known urological pathology characterized by a reduced urethral diameter. In Africa this pathology represents a late complication of sexually transmitted diseases.

1.2. Objective: to evaluate the endoscopic management of urethral stricture

1.3. Methodology: we carried out a descriptive study with a retrospective and prospective design data collection over a period of 2 years. A total enrolment of 76 patients constituted our study sample amongst which 62 involved retrospective cases and 14 prospective cases. All incomplete and non exploitable files were excluded from study.

1.4. Results: urethral stenosis accounted for 10.28% of hospitalizations and 17.87% of surgical interventions. Dysuria and weak urine stream were the most frequent reasons for consultation. The most common clinical forms represented were the stenosis of the bulbar urethra (50%) and the bulbo-membranous urethra (23.68%). Mainly infectious causes with 69.73% was observed. There were several management techniques, but endoscopic internal urethrotomy was performed in 71.05% of the patients. 19.73% had undergone sizing and urethroplasty was performed in of the patients 6.57%. Cure accounted for 77.63%, recurrence 22.37% and no deaths recorded during study period.

1.5. Conclusion: urethral stenosis is a benign affection, frequent and disabling disease for men. The management is most oftenly

surgical with multiple techniques but endoscopic internal urethrotomy remains the best in our context because of its less important recurrence rate. The solution to this pathology remains the prevention of sexually transmitted infections.

2. Introduction

Urethral stenosis is the reduction in size of the urethral diameter, which is an obstacle to normal urine stream [1]. It is a more common condition in Africa due to the increased incidence of Sexually Transmitted Infections (STI) Road Traffic Accidents (RTA), especially with pelvic trauma and use of untimely endo-urological manoeuvres. Although its frequency has decreased considerably in European countries, in Africa, urethral stricture is still a scourge. In the past, it was considered the main complication of gonorrhoea. It was thought to be under control in humans with the advent of antibiotics.

Nowadays, urethral stricture is a serious condition because of its complications and recurrence, and poses a problem for therapeutic management [2]. The major problem remains the choice of treatment to ensure a good functional and long-term result. Moreover, diagnosis is usually late, and patients are seen at the stage of complications. The choice of treatment modality is not difficult, but the therapeutic prognosis is also compromised [3].

In the United States of America, a survey conducted in 2007 showed that 0.6% of Americans suffer from urethral stricture and that this disease is much frequent in elderly black people [4].

In Africa, infectious etiology predominates. Urethral stenosis is

one of the sequelae of sexually transmitted infections after several years of untreated or poorly treated urethritis. Several studies have been conducted in Africa on urethral stricture, notably in Morocco, Brazzaville, Mali and Ivory Coast which support the same idea. In Morocco, in 2010, a retrospective study at the faculty of FES showed that sclero-inflammatory urethral stricture in men occupies 10% of all conditions [5]. There is no reliable national statistical data on the prevalence of this pathology in Cameroon, however in 2014, a retrospective study conducted at the Protestant hospital of Ngaoundere showed that urethral stenosis accounted for 11.36% of hospitalizations and 6.96% of surgical procedures [6] in the urological department. While in developed countries infectious etiologies are rare in favor of post-traumatic and iatrogenic etiologies. This pathology remains a real problem because of its recurrent nature and its complications.

3. General Objective

To describe the management of urethral stenosis at the Islamic Clinic of Ngaoundere.

3.1. Specific Objectives

- Determine the frequency of urethral stenosis ;
- Identify the causes of urethral stenosis ;
- Describe the clinical and paraclinical aspects of urethral stenosis;
- Describe the different management modalities of urethral stenosis ;
- Determine the frequency of recurrence of stenosis.

4. Methodology

4.1. Type and Period of Study

We carried out a cross-sectional descriptive study with retrospective and prospective data collection based on medical records and survey forms of patients admitted and managed for urethral stenosis at the Islamic Clinic of Ngaoundéré over a 2 years period going from January 2020 to December 2021.

4.2. Place of Study

The study was conducted at the Islamic Clinic of Ngaoundéré in the urology department, which is also considered the reference in urology in the northern part of Cameroon.

4.3. Study Population

It concerned patients admitted to the clinic during the study period

4.4. Source Population

It was represented by patients who consulted for a urological problem requiring surgery during the study period in the clinic.

4.5. Target Population

It concerned male patients received and managed for urethral stenosis in the urology department at the Islamic clinic during the study period.

Inclusion Criteria

- All male patients admitted with urethral stricture;
- All patients with a usable medical record who has undergone surgery for urethral stenosis

Non-inclusion criteria

- Any female patient with a urological problem;
- Non-operational patient records and lost to follow-up on prospective cases

4.6. Sampling

The sample size was determined according to the LORENZ formula. We counted all patients hospitalized with urethral stenosis during the specified period.

4.7. Data Processing

The data collected was stored and analyzed using the software SPSS16.0., Microsoft Word and Microsoft Excel 2013.

5. Results

5.1. Frequency

From January 2020 to December 2021, we registered 91 patients with urethral stricture (stenosis) whereby 76 of the patients constituted our sample of study. Among this sample study, 15 cases were registered prospectively within the study period.

5.2. Sociodemographic Data

Distribution of patients following age group (Figure 1).

The most represented age group was that of the range of [41-60] years with 34.21% followed by that of [60-80] years with 28.94%.

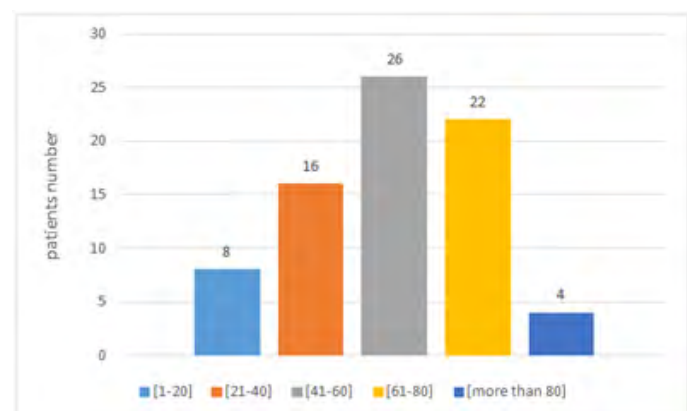


Figure 1: Patients distribution following the age groups

5.3. Clinical Data

5.3.1. Distribution of patients following the consultations main reason

All the patients (100%) main reason of consultation at first was dysuria as principal symptom associated at times with weak urinary stream, pollakiuria, nycturia, hematuria, acute urine retention and mictionnal burns (Table 1).

Table 1: Patients principal reasons of consultation

Consultation reasons	Frequency(n)	Percentage(%)
dysuria	76	100
pollakiuria+weak urine stream	36	47.36
acute retention of urine	16	21.05
nycturia	2	2.63
hematuria	4	5.26
burning of the bladder	3	3.94

5.3.2. Distribution of patients following their medical history

Gonorrhoea and bilharzia were the main medical histories presented by the study sample with respectively 22.37% and 18.42% (Table 2).

Table 2: patients distribution following their medical history

Medical history	Frequency (n)	Percentage(%)
recurrent urinary tract infections	13	17.1
Bilharzia	14	18.42
Gonorrhoea	17	22.37
prostate resection	9	11.84
notion trauma	12	15.79
urethral sounding	11	14.48
Total	76	100

5.3.3. Distribution of patients following the etiologies of the urinary stricture.

Infectious causes came first in this pathology with a frequency of 69.73% with just 13.16% of traumatic causes (Figure 2).

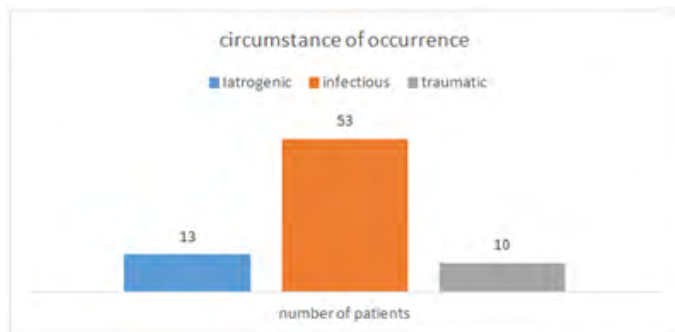


Figure 2: patients distribution following the disease etiologies

5.3.4. Distribution of patients following location of the stricture after the realization of the retrograd urethrocytography exam.

Mostly concerned with the urethral stricture was the bulbar region with 50% followed secondly by the bulbomembranous region with 23.68% (Figure 3).

5.3.5. Distribution of patients following the surgical technic realized

Endoscopic Internal Urethrotomy (EIU) was the main surgical technic used for repair surgery either 46.00% followed by urethral calibration with 20% (Figure 4).

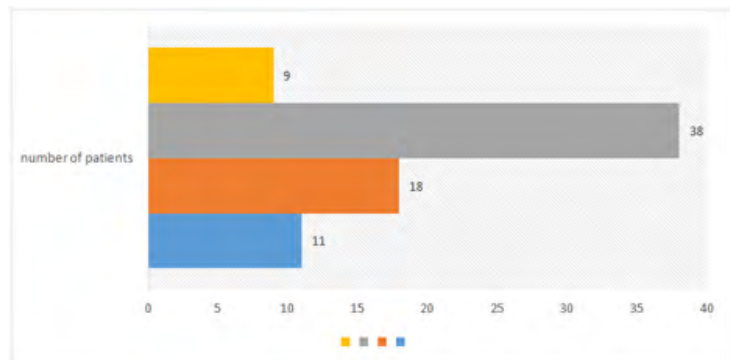


Figure 3: Urethral stricture location

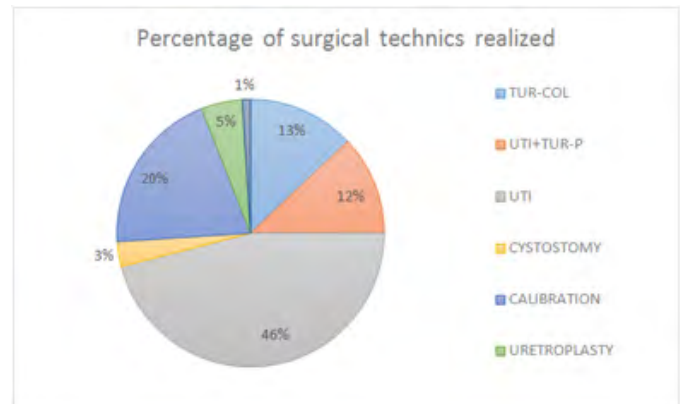


Figure 4: surgical intervention technics distribution

5.3.6. Evolution of treatments

Evolution treatments of the stenosis was favorable within 77.63% of the overall cases. The evaluation of the patients was carried out six (6) months after surgery following the criteria below:

- The quality of the urinary stream
- The pressure of the urinary stream
- Pain during micturition

The cure rate was 77.63% against 22.36% of recurrences. We registered two (2) cases of surgical resumption 6 months after the first surgery, either 2.63% and 15 patients returned for calibration every 2 months, either 19.73%. No deaths recorded during study period.

6. Discussion

6.1. Epidemiological and Sociodemographic Aspects

This study shows that, the results obtained from this study are not always in agreement with the literature. This discussion focuses on several data, namely:

6.1.1. Frequency

We collected 76 cases that were the subject of this study. The management of urethral stenosis represented 17.87% of the overall surgical interventions in the urological unit. This result is clearly greater than that of COULIBALY M.T and al.[7] who, in a study carried out reported 13.9% of the surgical procedures. This difference could probably be explained by the high frequency of sexually transmitted infections in our context.

6.1.2. Age

The most represented age group of the patients suffering from urethral stricture in this study was that of [41-60] years with 34.21%. Obtained result is similar to that of SEYDOU. S. [8] who reported that average of his sample was 50.57 years. On the other hand, other authors like BADIAGA C and al. in Mali [4], AMIDOU DEMBELE and al. in Mali had found urethral stenosis in younger subjects.

6.2. Clinical Data

6.2.1. Principal Reasons of Consultations

100% of the patients in this study consulted for dysuria. NDIANGA S.N and al. [9] made the same observation. The dysuric form is the most common in developed countries whereas in our context, the dysuric form is associated to acute retention of urine (21.05%). This acute retention of urine could be explained by the delay of consultation in urology.

6.2.2. Medical History

In this study, gonorrhoea with a frequency of 22.37% and bilharzia with 18.42% were the main medical histories recorded. This result is comparable to that of M. DIALLO and al. [10] in Mali who found a history of gonococcal disease in 34.85% followed by bilharzia with 12.12% cases. These results can be explained by the frequency of sexually transmitted infections and bilharzia in some African countries.

6.2.3. Etiologies

We note the predominance of infectious etiology with a rate of 69.73% of cases. Infectious diseases was also the main cause found in other studies carried out by certain authors such as SALLIFOU, NGAROUA, SARA IOURDANE [11,12,13] who respectively in their studies reported 56.52%, 52.53% and 50% of sclero-inflammatory causes. In this study, post-traumatic narrowing accounted for 13.17% of the cases. K. DJE and al. [14] reported only one case in their series. Our results are similar to those of AMINOU DEMBELLE and al. [15] in Mali who obtained 14% cases of post-traumatic stenosis. These lesions are most often due to road traffic accident. In developed countries, iatrogenic stricture are mainly secondary to endoscopic maneuvers. In this study, urethral stricture was due to untimely probing. These results corroborate those of SEYDOU [8] who reported 29.28% of the cases. We have not registered any cases of congenital origin.

6.3. Paraclinical and Therapeutic Data

6.3.1. Location of Stenosis

UCR was performed in the majority of our patients with a frequency of 60.52%. The procedure permitted to specify the location, the length and the degree of the stenosis. As such, the bulbar urethra was the most affected portion with 50% followed by the bulbous membrane urethra with 23.68% of cases. These results are similar to those of SALIFOU.T, NGAROUA, OUATTARA K and al.

who reported respectively 50%, 49.12%, 45.60%. This predominance of the bulbar region could be explained by stagnation of secretions from the bulbar glands source of infections.

6.3.2. Endoscopic Internal Urethrotomy (EIU)

Out of the 54 EIU, we observed 72.22% of success and 27.78% of recurrence. Obtained results are better than that of E.H. MOBY and al. [4] who reported in their design study a rate of 75.57% of recurrence after EIU procedure. This low recurrence rate may be explained by the specialist mastery of the technic and proper surgical indication at time.

6.3.3. Benched Expansion or Calibration

Progressive ureteral dilatation to the probes of benique was practiced in 15 patients of which we note 11 cases with a frequency of 73.33% of success against 4 cases of failure. These results are similar to those of COULIBALY MT and al. [7] who obtained respectively 38.10% and 76% of success. These good result may be as a result of the urethral tissue flexibility in first-time surgical patients.

6.3.4. Evolution

The immediate postoperative course was generally simple. The medium-term evolution was favorable for 59 patients that is 77.63% and was marked by complications in 15 patients either 22.36% of the cases. These results are similar to those of ALMAHDIA and al. [17], NGAROUA [12], COULIBALY [7], NDIANGA [9], BADIAGA [2] with respectively 87.73%, 72.1%, 84%, and 74% of good results.

7. Conclusion

At the end of this study, urethral stenosis is a very common pathology in developing countries. In our environment, it represents about 10.28% of the cases in urological consultation and 17.87% of the surgical interventions. Urethral stricture can occur at any age but it is most common in young adulthood. The most frequent etiologies encountered are infectious and traumatic causes. Iatrogenic causes are less frequent in our context. The symptomatology is univocal and is represented by the difficulty to evacuate urine from the bladder. The treatment may as well be emergent or programmed following the mechanism of the stricture but moreover it requires great experience and delicacy in this procedural gesture.

References

1. Barbara Cereda. Prise en charge des traumatismes de l'urètre postérieur dans les fractures du bassin chez l'homme adulte: comparaison du réaligement endoscopique précoce versus urétroplastie différée. Médecine humaine et pathologie. Dumas-02956279, 2018.
2. Cheickna B, Diakite ML, Berthe H, Samassekou A, Tembely AD. Traitement et suivi post opératoire des rétrécissements urétraux chez l'homme dans le service d'urologie du CHU-point « G » Bamako à propos de 23 cas, 2017.

3. Cully T, Ravery V, Boccon-Gibod L les sténoses post traumatique de l'urètre: à propos de 105 cas. *Prog Urol.* 2007; 17: 83-91.
4. Moby EH, Makon S, Eyongueta D, Kamadjou C, Sala BT, Happy S, et al. Traitement des sténoses de l'urètre par urétrotomie interne endoscopique : profil épidémiologique, clinique et thérapeutique à Douala. 2018; 8(1).
5. Mohamed Amine Eddahioui Les sténoses de l'urètre (à propos de 220 cas) Thèse N° 200. 2021.
6. Nicolas Pierre Fleury. Le traitement des sténoses urétral par laser. Thèse Med. Thèse N°10297 Genève. 2002.
7. Coulibaly MT, Sissoko I, Kone O, Cisse Dramane, Diarra M, Ouattara Z. Prise en charge des sténoses de l'urètre chez l'homme au service d'urologie du chu Gabriel Toure. *Uro Andro.* 2018; 1(9): 428-32.
8. Coulibaly SS. Aspects thérapeutiques des sténoses urétrales chez l'homme au service d'urologie du C.H.U. Gabriel Touré. 2007.
9. Ndour NS, Diame ID, Diallo Y, Kouka SC, Ndiaye M, Diallo I, et al. Prise en charge du rétrécissement de l'urètre : notre expérience en milieux rural / Ndour. 2019.
10. Diallo M, Konate M, Diakite I, Camara M, Diarra L, Keïta M, et al. Sténose de l'urètre chez l'homme : Expérience du service de chirurgie générale du centre de santé de référence de la commune VI du District de Bamako. *Jaccr Africa.* 2020; 4(2): 175-182.
11. Traore SI, Dembele O, Maiga A, Traore S, Diallo AB, Layes T, et al. Prise en charge du rétrécissement urétral acquis : expérience du service de chirurgie générale de Sikasso, 2019; 33: 328.
12. Ngaroua, Eloundou NG, Djibrilla Y, Asmaou O, Jeremie MBO. Aspects épidémiologiques, cliniques et prise en charge de sténose urétrale chez l'adulte dans un hôpital de district de Ngaoundéré, Cameroun, 2017.
13. Iourdane S. Place de l'urétroplastie par de muqueuse buccale dans le traitement des sténoses urétrales. Thèse. 2018; 254.
14. Dje K, Coulibaly A, Coulibaly N, et al. l'urétrotomie interne endoscopique dans le traitement urétral acquis du noir africain à propos de 140 cas. *Med Afr Noire.* 1999; 46.
15. Dembele A. De. R. Les rétrécissements urétraux chez l'homme au CHU du point « G » à propos de 50 cas. Thèse de Médecine. 2008.
16. Ouattara Z, Tembely A, Sanogo ZZ, Doumbia D, Cisse Cmc, Ouattara K. rétrécissement de l'urètre chez l'homme à l'hôpital du point « G » Mali *Med.* 2004; 19: 3-4.
17. Alitini AA. Prise en charge des rétrécissements urétraux chez l'homme au service d'urologie du CHU Gabriel Toure Thèse de Med. Bamako. 2017; 37.