

**Research Article**

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## Urethroplasty at St Jean de Dieu Hospital in Tanguiéta: about 17 cases

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### Abstract

**Objective:** This study aimed to investigate the etiologies of urethral stenoses and the different urethroplasty techniques used for their treatment at the Saint Jean de Dieu Hospital in Tanguiéta over the past five years. **Patients and Methods:** This was a descriptive, cross-sectional, and retrospective study conducted in the general surgery department of Saint Jean de Dieu Hospital in Tanguiéta, northern Benin. The study period was five years, and it included 17 male patients who were hospitalized for US and underwent urethroplasty. **Results:** The mean age of the patients was 42 years, with extremes of 20 and 72 years. The most affected age group was 20-40 years. The etiologies were dominated by traffic accidents (47.06%) followed by iatrogenic causes (29.41%). The retrograde and micturition urethrocytography analysis has shown a predominance of bulbar US (58.82%), followed by membranous US (35.29%). Urethroplasty by resection and anastomosis was the most common surgical technique used in our series (87.50%), followed by urethroplasty with a penile flap graft (12.50%). Post-operative outcome at 3 months follow-up was good in 76.47% of cases and poor in 23.53%. **Conclusion:** US remains a major public health issue, with diagnosis relying on a combination of clinical findings and imaging (retrograde and micturition urethrocytography). In our context, traumas related to road traffic accidents are the primary cause. Urethroplasty by resection and anastomosis stands out as the preferred surgical treatment, but the failure rate reported in our series is significant, prompting a more comprehensive patient management approach at every stage (preoperative, intraoperative, and postoperative) to optimize intervention outcomes.

**Keywords:** Urethral stenosis, Urethroplasty, Tanguiéta.

### INTRODUCTION

Urethral stenosis (US) is one of the oldest known urological pathologies. It is characterized by a permanent decrease in the size of the urethra, constituting varying degrees of obstruction to the flow of urine during urination. It can occur at any age <sup>[1,2]</sup>. It is common and disabling, with significant socio-professional and financial repercussions for both the patient and their family <sup>[3,4]</sup>. Its etiologies are multiple: infectious, traumatic, iatrogenic, congenital, and idiopathic <sup>[2,3]</sup>. Managing US is challenging due to potential recurrences, but treatment has evolved from dilation to internal urethrotomy and plastic surgery. There are several management options for US. The choice of surgical technique depends increasingly on precise indications, considering both the stenosis (location, length, etiology) and the patient (age, comorbidities, preferences) <sup>[2,4,5]</sup>.

This study aimed to investigate the etiologies of urethral stenoses and the different urethroplasty techniques used for their treatment at the Saint Jean de Dieu Hospital in Tanguiéta over the past five years.

### METHODOLOGY

This was a descriptive cross-sectional study with retrospective data collection, conducted in the general surgery department of Saint Jean de Dieu Hospital in Tanguiéta, located in northern Benin. The study period covered five years (from January 1, 2019, to December 31, 2023), involving 17 patients hospitalized for US who underwent urethroplasty.

Included in our study were all men presenting with dysuria related to urethral narrowing confirmed by

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retrograde and micturition urethrocytography and who underwent urethroplasty. The variables studied included age, patients' origin, the average duration of cystostomy before surgery, the reason for consultation, history of endo-urethral manipulations, etiologies, complementary examinations requested (urine culture and sensitivity, Retrograde and micturition urethrocytography), the urethroplasty technique used during treatment, and post-operative outcome at 3 months follow-up. Data were encoded and processed using Epi Info software version 7.2.5.0.

## RESULTS

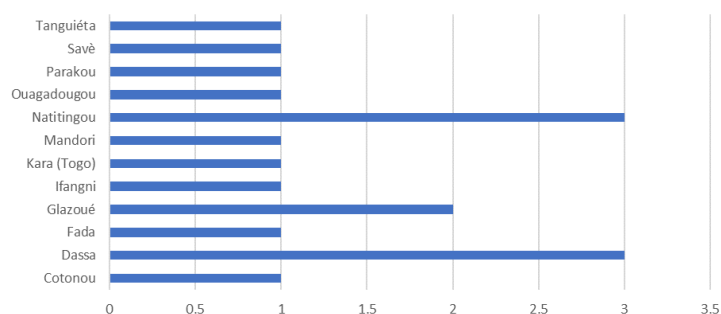
During our study period, 17 patients underwent urethroplasty. The average age of the patients was 42 years with a range from 20 to 72 years. The age group most affected was that of patients between 20 and 40 years old (Table 1). All patients had a cystostomy tube. The average duration of tube placement before surgery was 16 months, with a range from 1 to 85 months. Patients in our series came not only from neighbouring villages in Tanguiéta but also from countries in the sub-region such as Burkina Faso and the Republic of Togo (Figure 1). The reasons for consultation were mainly dysuria with a history of trauma (47.06%), distributed as follows (Table 2). The etiologies were predominantly road traffic accidents (RTA) in 47.06% of cases, followed by iatrogenic causes in 29.41% of cases (Figure 2). The retrograde and micturition urethrocytography has always been performed, and its analysis has shown a predominance of bulbar US (58.82%), followed by membranous US (35.29%) (Figure 3). In our series, 13 patients (76.47%) presented with a single stenosis on the retrograde and micturition urethrocytography, 3 patients (17.65%) had two stenosis, and one patient (5.88%) had more than two stenosis. The length of the lesions was less than 3 cm in 94.12% of cases and greater than 3 cm in 5.88%. Urethroplasty by resection and anastomosis was the most commonly performed surgical technique in our series (87.50%), followed by urethroplasty with penile flap graft (12.50%) (Figure 4). At 3 months follow-up, a good postoperative evolution was noted in 76.47% of cases and poor in 23.53% of cases.

**Table 1:** Distribution of patients according to age groups

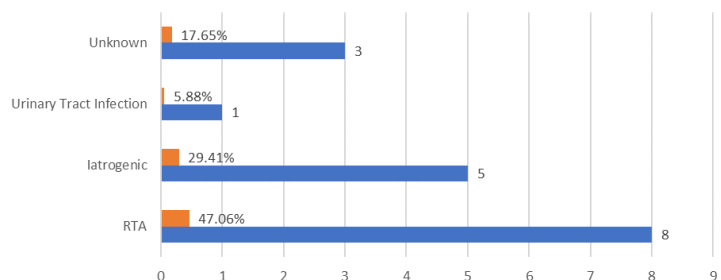
Age range	Count	Percentage
20-40	10	58,82 %
41-60	4	23,53 %
61 and older	3	17,65 %
<b>Total</b>	<b>17</b>	<b>100 %</b>

**Table 2:** Distribution of patients according to reasons for consultation

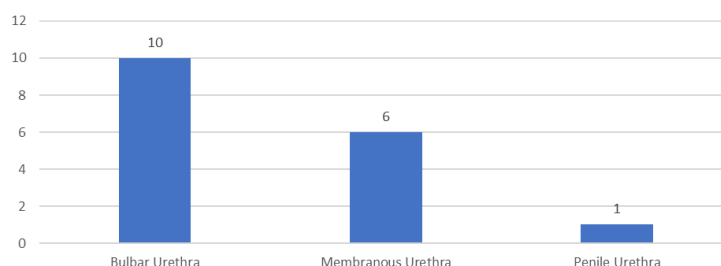
Reasons for consultation	Count	Percentage
Non-traumatic dysuria	3	17,65 %
Post-traumatic dysuria	8	47,06 %
Urethro-cutaneous fistula	1	5,88 %
Urine retention	5	29,41 %
<b>Total</b>	<b>17</b>	<b>100 %</b>



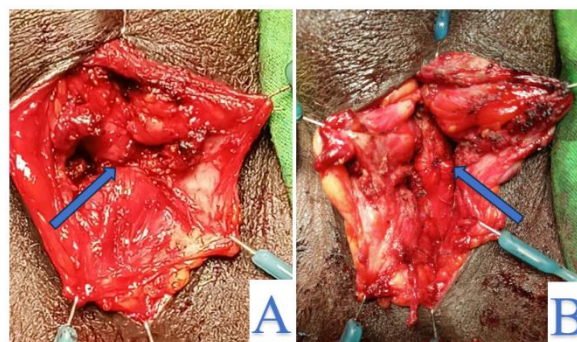
**Figure 1:** Distribution of patients according to origin



**Figure 2:** Distribution of patients according to etiologies



**Figure 3:** Distribution of patients according to the site of the stenosis



**Figure 4:** A= Stenosed bulbar urethra (blue arrow); B= Urethroplasty by resection and anastomosis (blue arrow)

## DISCUSSION

US is a public health issue that can affect all parts of the urethra, manifesting by a gradual difficulty in urination, accompanied by a weakening urinary stream that can progress to complete urinary retention [6,7].

It is common, with a peak incidence in young adults [7-10]. The average age of patients in our study was 42 years, with the most affected age group falling between 20 and 40 years. This age range represents the most professionally active individuals who are more exposed to accidents.

In our series, we found patients who came from two different countries in the sub-region (Burkina Faso and the Republic of Togo); this can be explained by the reputation of Saint Jean de Dieu Hospital in Tanguiéta not only in Benin but also, and especially, in the sub-region

Post-traumatic dysuria (47.06%) was the most common reason for consultation in our series. This finding differs from those of Bah et al. [9] and Hounnasso et al. [3], who both found urinary tract infections as the primary reason for consultation in 60% and 44.3% of cases, respectively. A plausible explanation for the observation in our series is the involvement of young individuals in income-generating socio-professional activities, such as motorcycle taxi riding, which is responsible for the highest rate of trauma due to road accidents. Additionally, there is a decrease in the prevalence of infectious etiologies, largely attributed to the advent of antibiotic therapy [2].

Radiological analysis of urethral strictures in patients in our series reveals a predominance of single forms (76.47%), with bulbar localization in 58.82% of cases and a stenosis length of less than 3 cm in 94.12% of cases and greater than 3 cm in 5.88%. This observation is consistent with that of Hounnasso et al. [3] and Sikpa et al. [7].

The most commonly used surgical technique in our series was urethroplasty by resection and anastomosis in 87.50% of cases, with a favourable postoperative outcome in 76.47% of cases. Urethroplasty by resection and anastomosis emerges as the gold standard treatment for small urethral strictures. Supported by literature analysis, this surgical technique boasts a success rate exceeding 90% on the initial attempt. Its undeniable advantages include reliability, efficiency, complication minimization, preservation of urinary function, and promotion of rapid recovery. URA is, therefore, the preferred option for small-sized (less than 2 cm), single strictures resistant to endoscopic techniques, in the absence of contraindications to this intervention [5,7]. However, the success of the procedure hinges on meticulous execution, ensuring complete excision of urethral fibrosis and surrounding tissues, as well as the creation of a tension-free urethral anastomosis, especially in the hands of experienced surgeons [8]. The failure rate found in our series was 23.53%. Reasons for these failures include accidental dislodgement of the urethro-vesical catheter in some patients, followed by attempts at repositioning by inexperienced individuals on a fresh anastomosis, as well as surgical site infections (perineal abscesses).

## CONCLUSION

US remains a major public health issue, with diagnosis relying on a combination of clinical findings and imaging (retrograde and micturition urethrocytography). In our context, traumas related to road traffic accidents are the primary cause. Urethroplasty by resection and anastomosis stands out as the preferred surgical treatment, but the failure rate reported in our series is significant, prompting a more comprehensive patient management approach at every stage (preoperative, intraoperative, and postoperative) to optimize intervention outcomes.

## Competing Interests

The authors declared no conflict of interests.

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None declared.

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