

Suprapubic Cystostomy at Urological Emergency Unit of CHU-YO, Ouagadougou, Burkina Faso: Indications, Technique and Complications

Barnabé Zango¹, Fasnéwindé A. Kaboré¹, Moussa Kaboré^{1*}, Brahim Kirakoya¹,
Bienvenue D. Ky¹, Boukary Kabré¹, Clôtaire Alexis Marie Kiemdiba Donega Yameogo¹,
Adama Ouattara², Timothée Kambou²

¹Department of Urology, Yalgado Ouédraogo Teaching Hospital, Ouagadougou, Burkina Faso

²Department of Urology, Sanon Souro Teaching Hospital, Bobo Dioulasso, Burkina Faso

Email: *kaborem391@yahoo.com

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Abstract

Introduction: Cystostomy allows under certain circumstances deriving the urine. This is the most performed surgery in uro-andrological emergencies. Complications can occur. We aim to analyze the indications, technical aspects and complications of suprapubic cystostomies in the urological emergency unit at CHU-YO. **Patients and Methods:** Between October 2013 and May 2014 we conducted a prospective study of all patients who underwent suprapubic cystostomy. **Results:** 86 cases of cystostomy were noted or 77.5% of surgical procedures performed in uro-andrological emergency. All patients were male. The average age of patients was 52.5 years. The AUR represented 88.4% of indications. The prostate tumor represented 65.8% of the etiologies of AUR. The cystostomy was performed under local anesthesia in 87.2% of cases. Peritoneal gap was noted in 5.8%, parietal suppuration in 12.8%. A death by generalized acute peritonitis was noted in one case. **Conclusion:** Suprapubic cystostomy presents a non-negligible morbidity and mortality and must be mastered.

Keywords

Cystostomy, Acute Urinary Retention, Complications

*Corresponding author.

1. Introduction

Suprapubic cystostomy allows draining the bladder, short circuiting the natural routes when the indwelling urethral catheterization is impossible [1]. This is the most performed surgical procedure among urological emergencies [2] [3]. The main indication of the cystostomy is urinary retention. It can be permanent or temporary in order to find a solution for voiding dysfunction. It seems trivial but requires mastery on the part of the operator who practices it. The suprapubic catheterization is the subject of several studies; most of them relate complications that are often encountered: bleeding, bowel injury... [1] [4] [5]. In Burkina Faso, there is no study available on the subject. We propose to study the indications, technical aspects and complications of suprapubic cystostomy at Urological Emergency Unit of Yalgado Ouédraogo University Hospital.

2. Patients and Methods

We conducted a prospective study over a period of eight months from October 1, 2013 to May 30, 2014 at the urological emergency unit of Yalgado Ouédraogo University Hospital (CHU-YO). Were included all cases of suprapubic cystostomy done to urological emergency during the study period. We collected 86 cases of suprapubic cystostomy. The investigator had to attend the surgery. The data were collected in the patient medical records and the operative report register. The variables studied were age, gender, indication for surgery, type of incision, used equipment, and complications. The results were analyzed using Epi Info in its version 3.5.1. The results were presented as percentages and means.

3. Results

3.1. Epidemiological Aspects

The cystostomy represents 77.5% of surgical procedures performed in uro-andrological emergency (**Table 1**). All patients were male. The average age of patients was 52.5 years with extremes of 2 and 90 years. 54.6% (47) of patient came from rural areas against 45.4% (39) patients from urban areas.

3.2. Indications

Indications were represented by acute urinary retention (AUR) 88.4% (76/86), the periurethral phlegmon 7% (6/86) and gangrene of the external genitalia 4.6% (4/86). The prostate tumor was the main etiology of AUR (65.8%) (**Table 2**).

During the study period 368 patients were admitted for AUR whether 51.11% (368/720) of uro-andrological emergencies. 183 cases of AUR were due to prostatic tumor among them 50 cases have been the subject of a

Table 1. Distribution of surgical procedures performed in emergency.

Surgical procedures	Number of cases	Percentage (%)
Cystostomy	86	77.5
Al-Ghorab technique	3	2.7
Scrotal debridement	9	8.1
Scrotal exploration	13	11.7
Total	111	100

Table 2. Distribution of cystostomies according to the etiology of AUR.

Etiologies	Frequency	Percentage (%)
Prostate tumor	50	65.8
Urethral stricture	19	25
Lithiasis urethral	1	1.3
Bladder tumor	1	1.3
Trauma of the pelvis	5	6.6
Total	76	100

cystostomy. On average 23 patients were admitted every month for AUR on prostate tumor. The monthly distribution of AUR and cystostomies on prostate tumor is given in **Figure 1**.

All patients completed a creatinine. Creatinine is impaired in 12 patients with AUR. It had become normal after cystostomy. The urine culture was performed in 57 patients whether 66.3% of cases. It was positive in 15 patients whether 26.3% of cases. The most represented organisms were *Escherichia coli* (75%) and *Pseudomonas aeruginosa* (17%). Ultrasound was performed in 54 patients whether 62.8% of cases (**Table 3**).

An urethrocytography was performed in 19 patients who had an urethral stricture (**Table 4**).

3.3. Technical Aspects

The cystostomy was performed under local anesthesia in 87.2%, locoregional anesthesia in 8%, and general anesthesia in 4.8% of cases. The incision was median suprapubic in 91.8% and 8.2% in cross. Electrocautery was used in 5.8% of cases. The urine was troubles in 19.7% of patients, hematic in 2.32% and straw-yellow in 77.98%. Bladder cavity was explored only in under local or general anesthesia patients whether 12.8%. We noted a mass of the bladder dome in one case and a firm mass around the bladder neck corresponding to a median lobe in 4 cases (36.3%). Bladder calculus was found in 03 patients. A Foley catheter CH 16 or 18 was used

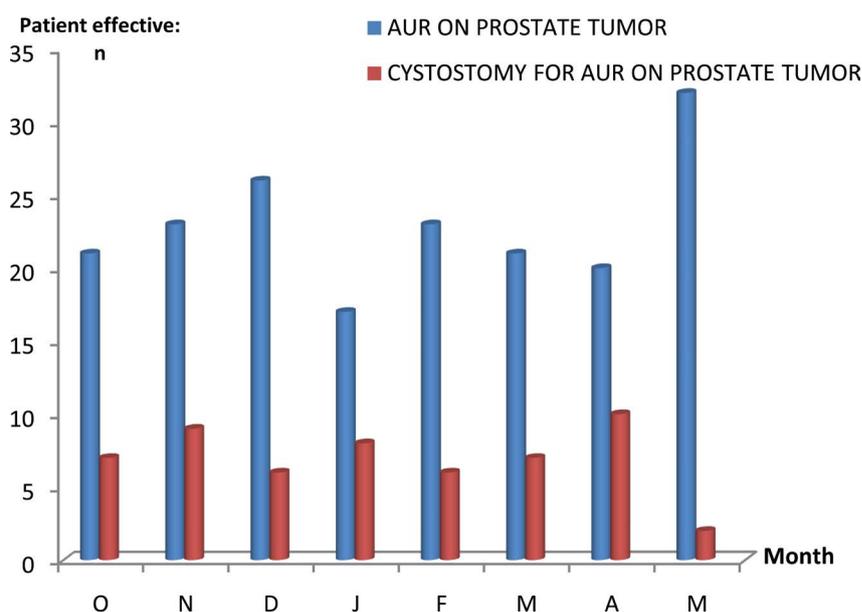


Figure 1. Monthly distribution of AUR and cystostomies on prostate tumor.

Table 3. Results of ultrasound performed after emergency.

Anomalies	Effective
Increase in prostate volume	54
Midlobe	32
Repercussion on the upper urinary tract	27
Bladder stone	3

Table 4. Results from the urethrocytography retrograde and voiding performed after emergencies.

Siege	Effective
Penile	7
Bulbar	9
Membranous	3
Total	19

in all cases. The mean duration of surgery was 45 minutes with extremes of 20 and 120 minutes. Rehydration was made in all cases. 15 patients received antibiotherapy adapted to the antibiogram.

3.4. Complications

Peritoneal gap was noted in 5 cases whether 5.8% with a case of generalized acute peritonitis which led to patient death. Postoperatively the urinary catheter was not productive in 5.8% of patients with persistence of urinary retention. It was parietal. A replay of the cystostomy was made. A parietal suppuration was noted in 12.8% of cases. A daily dressing and appropriate antibiotics were introduced.

3.5. Etiological Treatment

23 patients who underwent a cystostomy for AUR on prostate tumor were lost to sight 46% (23/50). 27 patients underwent transvesical prostatic adenomectomy. Alpha blockers were administered in 5 patients. 10 patients underwent an urethroplasty. The postoperative suites were simple. The average time before the etiological treatment was 05 months with extremes of 02 and 07 months.

4. Discussion

Suprapubic cystostomy in our study is the most surgical procedure performed among the urological emergencies (77.5%). B. Fall *et al.* in DAKAR had reported a frequency of 59.4% for the suprapubic catheterization in urological emergencies [2]. Yahya Tfeil *et al.* at Nouakchott reported a frequency of 59.7% [3]. This seems logical insofar as AUR is the most common urological emergency and also the main indication for cystostomy. In our study the AUR represented 51.11% of urological emergencies. B. Fall *et al.* and Tfeil Yahya *et al.* reported a frequency of 53% [2] [3]. The average age of our patients was 59.5 years. All patients were male. The prostate tumor occurs in men after age 50.

The AUR is the main indication of cystostomy. It represented in our study 88.4% of indications. Bobo Diallo A. *et al.* in CONAKRY reported to a rate of 85% [6]. The prostate tumor (65.8%) and urethral stricture (25%) are the main etiologies of AUR. B. Fall *et al.* reported 66.57% for prostate tumor and 26.36% for urethral stricture [2]. Front of a AUR, bladder drainage must be done urgently to relieve the patient and prevent complications of prolonged bladder distension. The drainage way depends on the etiology and context [7]. In the case of AUR on prostate tumor, transurethral bladder catheterization is often facilitated by the use of a Freudenberg's mandrel. This prevents certain cystostomies made when transurethral bladder catheterization is impossible. So in our study our largest number of AUR on prostate tumor was noted during the month of May. Paradoxically it is in this month we noted the least cystostomy for AUR on prostate tumor. The explanation is related to the acquisition of a Freudenberg's mandrel in urological emergency unit. A mastery of its use is necessary to avoid complications such as wrong way responsible of bleeding and subsequent urethral stricture. Suprapubic cystostomy should only be performed if there is a distended bladder. A case of cystostomy for AUR on bladder cancer was noted. However bladder tumor is an absolute contraindication to suprapubic catheterization [7]. A good examination with an ultrasound available in emergency could prevent such a situation.

The cystostomy is a surgical procedure and all aseptic conditions must be respected. All cases of cystostomy were performed by doctors in diploma of specialized studies in general and digestive surgery. Zero risk does not exist in surgery. Suprapubic cystostomy seems trivial but can often have serious complications. A peritoneal gap was observed in 5 patients. They were patient with suprapubic surgical scar. Fibrosis can make dissection difficult and cause a rupture of the peritoneum. The operator caution must be appropriate to avoid such incidents. The antecedent of pelvic surgery is a relative contraindication against the suprapubic catheterization [7]. Postoperative adhesions may increase the probability of bowel injury [8]. Postoperative mortality was 1.16%. Ahluwalia RS *et al.* in a study on the surgical risk of suprapubic catheterization endoscopically and long-term sequelae reported a mortality of 1.8% [4]. The breaking of the peritoneum with infected urine entry into the abdominal cavity causes a generalized acute peritonitis. This is the case of the patient who died. 87.2% of cystostomies were performed under local anesthesia. This often makes difficult a good dissection, the peritoneum reclinement and a visualization of the anterior surface of the bladder. This could explain the five cases where the catheter was in the prevesical space. The parietal suppuration noted in 12.8% of cases can be linked either to infected urine but mainly to the lack of sterility in achieving cystostomies. Lack of urological surgeon explains the long waiting period before the etiological treatment. This reduces the life's quality of patients.

5. Conclusion

Suprapubic cystostomy is the most common surgical procedure performed in uro-andrological emergency. It is a gesture that seems trivial but requires caution in its implementation to avoid complications. It should be abandoned in favor of suprapubic catheterization which is easier to perform and certainly less invasive. The suprapubic catheterization seems to us to be the royal road to drain the urine in man when it is possible.

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