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Research Article

Evaluation of the Surgical Management of Urogenital Fistulas in Southern Senegal

Aboubacar Traore[1, 2, *], Mohamed Doukoure[1, 3], Helene Ndoye[1, 2], Modou Diop Ndiaye[1, 2], Omar Sow[2], Boubacar Fall[1, 2]

[1]Urology Department, Peace Hospital, Ziguinchor, Senegal
[2]Department of Surgery, Assane Seck University, Ziguinchor, Senegal
[3]Department of Surgery, Gaston Berger University (UGB), Saint-Louis, Senegal

Abstract

Introduction: Urogenital fistula (UGF) encompasses multiple clinical forms, most often of obstetric origin. It represents a major public health problem in sub-Saharan Africa, in contrast to its rarity in high-income countries. This study aimed to evaluate the outcomes of surgical management of UGFs performed by a specialized missionary team in Casamance (Senegal). Methods: Our study was a cross-sectional, descriptive study targeting women with a uterine fistula who required surgery by the mission team (December 2019 to December 2021) in the Casamance region. It excluded women with associated rectovaginal fistulas. The variables studied were epidemiological, obstetric, anatomoclinical, therapeutic, and outcome-related. Data were collected from reports and surgical records. Results: Forty-six cases were included. The mean age was 39 years. Female genital mutilation was reported in 52.2% of cases (primarily type I). Prolonged labor (more than 12 hours) occurred in 82% of cases, and 80% of deliveries took place in a hospital setting. Vesicovaginal fistulas accounted for 86.9% of cases, and obstetric causes for 82.6%. Vaginal access was used in 69.6% of cases, and the Chassar-Moir technique in 76.1%. The overall success rate was 78.3%, with urinary leakage occurring in 21.7% of cases. No postoperative incontinence was observed. Conclusion: Urogenital fistulas lead to serious physical and psychosocial consequences. Their prevention requires prompt and competent obstetric care. The results of this mission are encouraging and highlight the need to strengthen local surgical capacity.

Keywords

Urogenital Fistula, Obstetric Complications, Surgical Management

1. Introduction

A urogenital fistula is defined as an abnormal communication, congenital or acquired, between the urinary and female genital systems [1]. We can thus distinguish various varieties and multiple etiologies exist, but obstetric causes are predominant. Obstetric uterine rupture is common in low-income countries; in sub-Saharan Africa, it remains a scourge that continues to claim victims [2]. However, it remains rare in developed countries due to good monitoring obstetrics of

*Corresponding author: traboubacar88@yahoo.fr (Aboubacar Traore)

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women [3]. In sub-Saharan Africa, the annual number of obstetric fistulas has been estimated at 33,450 cases, occurring mainly in rural areas [4]. A study conducted in Senegal in 1992 showed that 96% of cases were of obstetric origin [5]. The aim of this work was to evaluate the surgical management of urogenital fistulas by the mission team in Casamance.

2. Patients and Methods

Our study was a cross-sectional, descriptive study targeting women with uterine fistulas who required surgical intervention at the urology departments of the Ziguinchor Peace Hospital and the Kolda Regional Hospital, conducted by the UGF surgical team over a two-year period (December 2019 to December 2021). Women with associated rectovaginal fistulas and those with unusable records were excluded. Data were collected from patient records and surgical mission reports. Patient participation was voluntary, following free and informed consent.

The Variables Studied Were

Epidemiological: age, marital status and department or country of origin.

Obstetrics: gravidity, parity, live births, abortions, patient height, type of female genital mutilation, causal pregnancy (duration of labor and place of delivery).

Anatomical and Clinical Information of the Fistula: duration of evolution or age, location, number of openings, number of previous treatments, classification, obstetric causes.

Therapeutic and Evolutionary: approach, type of anesthesia, surgical technique, time to remove the probe, time to resume sexual activity, treatment results, post-operative complications.

3. Results

Of the 46 cases, Kolda accounted for 37% (n=17) and Ziguinchor for 28.3% (n=13) (Table 1). The mean age was 39 years [23-65 years] and 76.1% of the patients were married. More than half had undergone female genital mutilation. Female genital mutilation was reported in 52.2% of cases, 75% of which were type I. The mean parity was 4.6 (ranging from 1 to 10 pregnancies), with the sixth pregnancy being the most frequent (21.7%), followed by the third (17.4%). The majority of patients were multiparous (4 to 6 deliveries) or pauciparous (2 to 3 deliveries), with respective frequencies of 43.5% and 37%. The patients were 1.50 m or taller in 95.6% of cases (n = 44). Labor lasted more than 12 hours in 82% of cases. Delivery took place in the hospital in 80% of cases (Table 1).

Table 1. *Distribution of Patients According to Sociodemographic Data.*

Sociodemographic data	Effective	Percentage (%)
Country/region of origin		
Kolda	17	37
Ziguinchor	13	28.3
Sédhiou	10	21.7
Guinea-Bissau	5	11
Place of birth		
Hospital	36	80
Health post	6	13.3
Residence	2	4.4

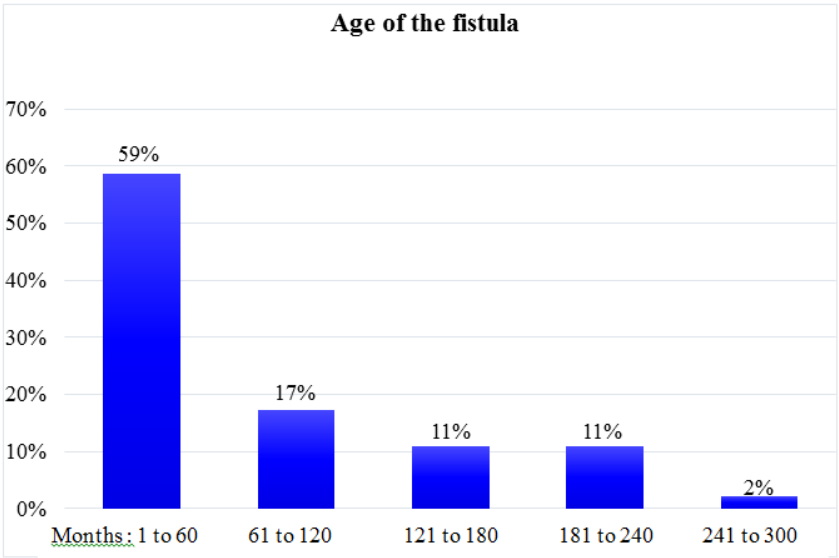

Figure 1. *Distribution of Patients According to the Age at Which the Fistula Appeared.*

Fistulas lasting less than 5 years were more frequent, representing 58.7% of cases (Figure 1). In 34.8% of cases, this was the first surgical intervention. According to the modified Dakar classification, type I fistulas, without involvement of the continental apparatus, represented 56.5% of cases. Vesicovaginal fistulas were the most frequent 86.9% (n = 40), followed by vesicouterine fistulas (8.6%, n = 4). A single fistula was present in 98% of patients. Obstetric etiology was responsible for 82.6% of cases (n = 38), followed by iatrogenic etiology related to pelvic surgery (15.2%, n = 7).

Spinal anesthesia was the most frequently used technique (87% of cases). The surgical approach was most often low (69.6% of cases). The Chassar-Moir technique was the most common (76.1% of cases). The duration of urethral catheterization varied: from 7 to 15 days for vesicovaginal fistulas and 21 days for complex fistulas. Resumption of sexual activity after six months was the most frequent outcome (65.2% of cases), with a mean time to return of 4.9 ±3 months.

Overall, the success rate of surgical fistula repair was 78.3% (n = 36); however, urinary leakage due to incomplete closure was observed in 21.7% of cases (n = 10). No postoperative urinary incontinence was noted.

The success rate of the first surgical intervention was 87.5% (n = 14) (Table 2). The cure rate was 82% (n = 18) for the modified Dakar 1 type fistula (Table 3).

Table 2. *Assessment of Surgical Results Base on the Number of Previous Treatments.*

Previous treatment	Healing % (n)	Failure % (n)	Total % (n)
None	87.5 (14)	12.5 (2)	34.8 (16)
1	73.3 (11)	26.7 (4)	32.6 (15)
2	87.5 (7)	12.5 (1)	17.4 (8)
3	33.3 (1)	66.7 (2)	6.5 (3)
4	33.3 (1)	0 (0)	2.3 (1)
5	33.3 (1)	50 (1)	4.3 (2)
7	33.3 (1)	0 (0)	2.3 (1)
Total	78.3 (36)	21.7 (10)	100 (46)

Table 3. *Assessment of Surgical Results According to Has Fistula Type Base on the Amended Dakar Classification.*

type of fistula	Healing % (n)	Failure % (n)	Total % (n)
Vesicovaginal (type 1)	82 (18)	18 (4)	47.8 (22)
Vesicovaginal (type 2)	87 (13)	13 (2)	32.6 (15)
Vesicovaginal (type 3)	0 (0)	100 (3)	6.5 (3)
Vesicouterine	75 (3)	25 (1)	8.7 (4)
Ureteropaginal	100 (2)	0 (0)	4.3 (2)
Total	78.3 (36)	21.7 (10)	100 (46)

4. Discussion

The COVID-19 pandemic, the surgical mission nature of the study (which prevented a comprehensive profile of surgical emergency care in the region), and the lack of assessment of the psychosocial impact were the limitations of our study. Indeed, we observed an annual frequency of 23 surgical interventions. A Diallo and al, in 2019, they noted there is an average of 12.4 cases of FUG per year [1]. This figure, which does not reflect the true incidence of FUG in the Casamance region, could be explained by low healthcare coverage. KF Aristide and al.[4], in 2014, observed a mean age of 35 years [16-70 years] and AB Diallo and al.[6], in 2016, a mean age of 25 years [12-55 years] was reported. Indeed, this is a complication of dystocic deliveries, most often affecting young married women with incomplete growth and maturation of the pelvic bones. The majority of our patients were multiparous and experienced progressive dystocia. This result is consistent with that of some authors [2, 5]. This calls into question the idea that primiparity is a predisposing factor for fistula. However, primiparity is the profile of women suffering from fistula in Africa [6]. In our study, the average height of the patients was 1.5 m. The average height was 1.48 m in the series by A Holme and al, in 2007, short stature was found to be a well-known risk factor for dystocia, and when combined with pelvimetry, it provides a better assessment of the risk of fistula. More than half of our patients had undergone genital mutilation [7]. This is a poor prognostic factor, responsible for dystocia; it exposes the patient to the risk of fistula on the one hand and makes repair and healing difficult on the other [8]. The majority of our patients had labors lasting more than 12 hours. This prolonged duration is one of the risk factors for the occurrence of obstetric uterine rupture. Poverty, remoteness from healthcare facilities, and beliefs are contributing factors.

We were unable to assess the psychosocial aspect due to the lack of a psychologist's opinion during the study and the absence of an adaptable psychological assessment tool. This would have allowed us to appreciate the impact of this pathology in its psychosocial dimension, as has been done in some studies [2, 4, 9].

Fistulas less than five years old were more numerous in our series. D Nembunzu and al, in 2022, 37.6% of fistulas with a

duration of more than 4 years were reported [10]. The long delay between the onset of the fistula and its repair reflects a lack of information on the one hand and the inaccessibility of care on the other. The majority of fistulas were type I, without involvement of the continence system. A Niassy and al, in 2019, 85.3% observed [2].

Most of our patients had already undergone surgery at least once. SI Traore and al, in 2019, 46.6% of cases were treated as first-line therapy [11]. We observed a high frequency of obstetric etiology, followed by iatrogenic etiology. This predominance is also found in Mali [11]. Any pelvic surgery can lead to an iatrogenic fistula, especially gynecological surgery. Most of our patients had already undergone at least one operation. SI Traore and al, observed 46.6% of first-line treatments [11]. We noted a high frequency of obstetric etiology, followed by iatrogenic etiology. This cause was predominant in the study by SI Traore and al.[11]. Any pelvic surgery can lead to an iatrogenic fistula, especially gynecological surgery.

The lower approach was preferred in our study. As reported by some authors [1, 12]. This approach carries less risk of infection, avoids a cystotomy, involves minimal blood loss, less postoperative discomfort, and a short hospital stay [13]. We had generally practiced fistulorrhaphy inspired by the Chassar-Moir technique; in sub-Saharan Africa, it is a technique practiced, as reported by AB Diallo and al.[6] and A Niassy and al.[2], in 63% and 78.9% respectively. The urethral catheter was removed after one to two weeks for vesicovaginal fistulas in our study. SI Traore and al, they reported a urethral catheterization lasting 14-21 days [11]. A follow-up voiding cystourethrography is necessary before removal of the catheter. We advised patients to abstain from sex for at least 6 months to allow for proper healing of the vaginal and bladder mucosa. This was largely observed, with a satisfactory resumption of sexual activity for the patients.

Overall, surgery was successful in our study. Therapeutic results after a mean follow-up of 8 months were satisfactory in 79.3% and 64% respectively, as reported in Guinea [6] and in Mali [11]. J Goh and al, they reported that the risk of fistula closure failure is greater with transections [14]. According to Couvelaire, the first surgery must be successful; because even if the residual fistula is often smaller than the original fistula, each intervention carries an additional risk of sclerosis, which can lead to the failure of subsequent treatments. Postoperative recovery was straightforward for the majority of our patients. This finding is consistent with other studies [6, 11, 15]. It should be noted that the Covid-19 pandemic has been a hindrance in the post-operative monitoring of patients.

5. Conclusion

Obstetric urogenital fistula remains a major public health problem due to its long-term physical and psychosocial consequences. Effective prevention relies on improved access to quality obstetric care. While the mission's results are encouraging, the sustainability of urogenital fistula management depends on strengthening the training of local surgeons and developing specialized services.

Abbreviations

FUG Urogenital Fistula

Conflicts of Interest

The authors declare no conflict of interest.

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