

Obstetrical Fistula: Clinical, Therapeutic and Prognostic Aspects at the Gynecology and Obstetrics Department of Borgou University Hospital Center in Benin

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Abstract

Introduction: Obstetric Fistula (OF) is a tragedy and a public health problem (physical, social, moral and psychological). **Objective:** To determine the clinical, therapeutic and prognostic aspects of obstetric fistula at CHUD/B-A maternity ward in 2016. **Study Method:** This is a descriptive, analytic study with prospective data collection from March 07 to December 31, 2016. Patients with obstetric fistula were the study population. **Results:** A total of 37 patients were treated including 35 operated, the other two not operated for pyuria and bladder calculus after examination under spinal anesthesia. The average age was 36.6 ± 10.5 years with the extremes of 21 years and 65 years. The mean age of onset of Obstetric Fistula (OF) was 28.9 ± 6.5 years. Patients came from southern Benin (51.4%), were married (67.6%), peasant (35.1%) and out of school (81.1%). The types of OF were vesico-vaginal fistula (VVF) (62.2%), urethro-vaginal fistula (24.3%), vesico-uterine fistula (VUF) (5.4%), and uretero-vaginal fistula (2.7%). The fistula site was supra trigonal (54.1%), urethral (18.9%), trigonal (10.8%), vesico-uterine (10.8%), cervical urethral (2.7%), ureteroid vaginal (2.7%). Fistulas were complex (70.3%), complicated (24.3%) and simple (5.4%). The vaginal route was one of the first routes (64.9%). The operative techniques used were CHASSAR MOIR hysterorrhaphy (74.3%). The cure with continence was 68.6%. **Conclusion:** OF is observed in young women of childbearing age. VVF is the most common. The management is surgical with several operating techniques. Healing is possible. Hence the importance of paying special attention to these patients for their care.

Keywords

Obstetric Fistula, Continence, Hysterorrhaphy, Vesico-Uterine Fistula, Benin

1. Introduction

The World Health Organization (WHO) estimates that in countries with a high maternal mortality ratio, two to three women will have fistula for each maternal death. According to the same source, in 2002, there were between 50,000 and 100,000 carriers of obstetric fistula (OF) in Africa [1]. In Benin, where there are approximately 347 maternal deaths per 100,000 live births (NV), the number of women of reproductive age who report having suffered from OF is 16625 according to the Demographic and Health Survey 2011-2013 (DHS-2011-2012) [2]. It occurs mostly among young women in rural areas [3]. It is the consequence of obstructed labor and is manifested by a permanent flow of urine that requires rigorous body care: wearing of trimmings and the regularity of the toilet forcing the patient to remain cloistered at home. The consequences are: cutaneo-vulvar lesions by the urine, reduction of the productive capacity of the patient (economic, procreation ... etc.), reduction of conjugal cohabitation and sexual deprivation, isolation and exclusion of the patient [2] [3] [4]. Beyond this high frequency, the OF is a stigmatizing disease, relegating the sufferer to the rank of pariah of society and forcing it to hide and beg for survival. In addition to the painful experience of women with obstetric fistula (OF), there is a shortage of providers able to offer surgical treatment in countries with a high incidence of OF [1] [3]. Surgical treatment; often the only way to cure this infirmity can only succeed when it is carried out by experts in the field [5]. To overcome this shortcoming, the University of Parakou, in collaboration with the Dutch-funded Niche Project 202, trained local doctors in the field of OF surgery. Since then, three OF treatment missions have been carried out at the University and Departmental Hospital of Borgou (CHUD-B) by these doctors supported by African experts. The objective of the present study is to describe the clinical, therapeutic and prognostic characteristics of OF treated at the Gynecology and Obstetrics Department of CHUD-Borgou.

2. Material and Method

Study Framework: The study was conducted in the Gynecology and Obstetrics Department of CHUD/B Second Level Referral Hospital located in the city of Parakou and in the Borgou department in Benin.

Type of study: This was a descriptive, analytic study with prospective collection of data from March 7 to December 31, 2016 and covering three missions, the first of which was held from March 7 to 12, 2016; the second from 18 to 22 July 2016 and the third from 27 November to 03 December 2016.

Study population: It consisted of all the patients admitted to the service for

permanent loss of faeces or urine during the three missions.

Inclusion criteria: Included in this study were all patients admitted for permanent urinary or faeces loss who were diagnosed with OF and who were treated during one of the three missions to CHUD Borgou.

Exclusion Criteria: Women who did not consent to participate in the study were excluded from this study

No-inclusion Criteria: Excluded from this study, women whose urinary leakage results from an injury not related to pregnancy and childbirth

Diagnosis criteria: Any woman in whom an abnormal communication between the bladder and the vagina has been demonstrated by the methylene blue test or there is abnormal communication between the rectum and the vagina.

Sampling: This was an exhaustive census of all admitted patients meeting our inclusion criteria.

2.1. Data Collection

Data collection tools: the information was collected on a pre-established individual survey form based on a UNFPA sample OF file and our experience.

Data sources: these are the patients themselves, the patient records and the operating protocol register.

Data collection technique: the collection technique was the direct interview with the patients associated with the examination of their file. Data were collected as patients were admitted.

2.2. Conduct of the Investigation

At admission, we had a direct interview with the patients to inquire about socio-demographic data and patients' antecedents. After the clinical examination leading to the diagnosis, the women were programmed and operated. Then, from the files of the patients, the data on the diagnosis and the treatment are filled in

2.3. Variables

1) Dependent Variable: the dependent variable in this study was obstetric fistula (OF).

2) Independent Variables

Sociodemographic data: age to year; height in meter; profession; religion, marital status, ethnicity; age at marriage; age at first birth. History: gynecological and obstetric, surgical,

Data related to causal delivery: parity; duration of labor of the causal delivery; way of causal delivery; place of causal delivery (home or health center); quality of the officer who attended the delivery; condition of the newborn at birth.

Clinical Data: Reason for consultation, age of fistula; socio-economic impact of fistula; fistula size; seat of fistula; delivery process; state of peri fistulous tissue;

methylene blue test.

Data related to surgical treatment: approach; operative techniques used; incident-accident during operation and the outcome of the operation (success or cure with continence: the fistula is closed, without sphincteric disorder, urination is normal, and no urine leakage, closure of the fistula with residual urinary stress incontinence (SUI): the fistula is closed, sphincter insufficiency persists with periodic or constant leakage of urine, failure: the fistula is not closed, it is the failure of the fistula cure.).

Data related to postoperative follow-up: postoperative complications; wearing time of the probe; total duration of hospitalization; need for recovery.

2.5. Data Processing and Analysis

The collected data was captured using the EPI data software after verification of data consistency. Then the data analysis was done with the software Epi info version 7. The quantitative variables are expressed on average with their standard deviation and the qualitative variables in percentage with their 95% confidence interval.

2.6. Ethical Considerations

The Local Committee of Ethics for Biomedical Research of the University of Parakou (See the ethical opinion in appendices) and the authorities at various levels (Faculty of Medicine of the University of Parakou, Departmental University Hospital of Borgou; Gynecology and Obstetrics, Project NICHE BEN 202), as well as women with obstetric fistula gave their favorable opinion for the realization of this study. The inquiry cards were filled in anonymity. The confidentiality of the collected data was ensured.

3. Results

During the study period, 37 cases of obstetric fistula (6 cases at the first mission, 16 cases at the second and 15 cases at the third) were identified, 35 of which were operated. The socioeconomic characteristics of women with fistula are presented in **Table 1**. The age group 30 - 45 years was represented in 48.7% and the average age of the patients was 36.6 ± 10.5 years with the extremes of 21 years and 65 years. They were housewives and peasants in 64.8% of the cases and mostly out of school (81.1%).

At the time of fistula occurrence, the predominant age group of patients was 20 - 30 years old with 43.2% of cases and the mean age at that time was 28.9 ± 6.5 years with extremes of 17 years and 45 years. Women with fistula came from rural areas in 81.1%. All patients were married before the onset of OF (100%) compared with 67.6% after.

The average age at marriage was 17.4 ± 3.2 years with extremes of 12 and 25 years. Mean age at first birth was 18.4 ± 3.2 years with extremes of 13 and 26 years. The patients (48.6%) were married before the age of 18 years (**Table 2**).

Table 1. Distribution of patients by age at treatment, level of education.

	Number	Percentage
Age		
15 - 30	13	35.1
30 - 45	18	48.7
45 - 50	2	5.4
>50	4	10.8
Level of education		
Primary	5	13.5
Secondary	2	5.4
Unschooling	30	81.1
Profession		
Peasant	14	35.1
Household	11	29.7
Shopping	10	27
Craftswoman	04	8.1
Total	37	100

Table 2. Distribution of patients by age at marriage, age at first birth.

	Number	Percentage
Age at marriage		
< 5	7	18.9
[15 - 18[11	29.7
≥18	19	51.4
Total	37	100.0
Age at first birth		
≤15	7	18.9
15 - 20	21	56.8
20 - 25	8	21.6
25 - 30	1	2.7
Total	37	100.0

Pregnancy was often not followed (56.4%) or was poorly followed with fewer than four prenatal visits. The average duration of labor was 37.6 ± 25.4 hours with extremes of 8 hours and 96 hours. The work lasted at least 24 hours in 81% of cases. These patients had delivered by caesarean section in 70.3% of cases. Delivery in a maternity ward accounted for 83.8% of cases. Delivery was often performed by qualified personnel (83.8%). Perinatal mortality for obstetric fistula was 78.4%. Fistula appeared within 24 hours after delivery in 54.1% of patients.

The reason for consultation was permanent urine loss (94.6%) and catamenic haematuria (5.4%). The seniority of TF was 96 ± 85.6 months with extremes of 1 month to 288 months. OF was associated with ammoniacal dermatitis (73%). Vesico-vaginal fistulas (VVF) were the most common (62.2%) followed by urethrovaginal fistulas. These were often complex lesions in 70.3% of cases that were trigonal or urethral in 10.2% and 16.8% of cases, respectively (**Table 3**).

Of the 37 patients admitted for a surgical cure of OF, 35 were actually. For the other two patients, the surgical treatment was delayed one because of a severe local infection and the other because of the presence of bladder stones. The 35 patients underwent surgery under anesthesia. The patients were on their first course in 64.9% of cases. The vaginal surgical cure accounted for 62.9% of the cases. The fistulorrhaphy according to Chassar Moir was the most used surgical technique (**Table 4**).

Table 3. Distribution of patients according to the age of fist (in months), associated lesions and fistula diagnosis.

	Number	Percentage
Age (in months)		
≤60	18	48.7
60 - 120	10	27.0
120 - 240	7	18.9
>240	2	5.4
Associated lesions		
Lithiasis and calcifications	1	2.7
Ammonia dermatitis	27	73
Genital mutilation		
Yes	10	27
No	27	73
Diagnosis		
Destruction of the urethra	1	2.7
Retro trigonal fistula juxta-cervical-uterine	22	59.5
Trigonal fistula	4	10.8
Left uretero-vaginal fistula	1	2.7
Wide urethro-trigonal fistula	1	2.7
Vesico-uterine fistula	3	8.1
Complete urethral transection	2	5.4
Partial urethral transection	6	16.2
Type of fistula		
Simple	2	5.4
Complex	26	70.3
Complicated	9	24.3

Table 4. Distribution of patients according to the course of treatment, according to the approach and according to the operative technique.

	Number	Percentage
Rank of cure		
First cure	24	64.9
Second cure	9	24.3
Third cure	2	5.4
Surgical way		
Low	22	62.9
High	11	31.4
Mixed	2	5.7
Surgical technique		
Fistulorrhaphy according to Chassar Moir	26	74.3
Urétroplastie anastomotique	5	22.9%
Anastomotic urethroplasty	2	14.3%
Urethroplasty + interposition according to Martius	1	2.8%
Uretero-vesical reimplantation	1	2.8%

Intraoperatively, there was one case of perforation of the rectum (2.7%). Postoperatively, the mean bladder catheter duration was 14 ± 3.9 days with the 3-day and 21-day extremes. Complications recorded were haemorrhages by thread release: 4/35 (11.4%), vaginitis: 2/35 (5.7), parietal suppuration: 1/35 (2.9%). The mean duration of hospitalization was 15.2 ± 7.3 days with the extremes of 10 days and 20 days. Patients had a duration greater than or equal to two weeks in 73.0% of cases and less than two weeks in 27.0% of cases. At the end of this stay, 24 patients (68.6%) were cured with continence of urine, two or 5.7% had a closure of the fistular opening but had a stress urinary incontinence and in nine cases the treatment failed with no closure of OF.

4. Discussion

In our study, 37 cases of obstetric fistula were recorded in 10 months compared to 56 cases collected in 7 months in 2006 [3]. In 2004, the Regional Institute of Public Health (IRSP) had identified 237 cases over a period of four years, or an annual incidence of 59 cases (UNFPA/IRSP Benin, 2007) [4]. This difference in incidence observed in these studies is due to the characteristics of the screenings. Indeed, the incidence of pathologies detected decreases over screenings. It is also important to consider the influence of stigma on the fluctuation of impacts from one treatment campaign to another. In these cases, it is the effectiveness of the research strategies that determine the number of patients identified [4] [5].

The mean age of the patient was 36.6 ± 10.5 years with the extremes of 21 years and 65 years. This average age is consistent with that reported by Tébeu *et*

al. in Cameroon (2010) which was 36.2 ± 14.3 years old [6]. Alder *et al.*, Alder *et al.* in South Sudan in 2013 and Hounkponou *et al.* in Benin (2011) with 21 years and 32 years respectively [3] [7].

The average age of patients at fistula onset was 28.9 ± 6.5 years with the extremes of 17 years and 45 years. Diallo *et al.* in Guinea (2016) reported an average age of fistula patients that was 25 years old with extremes of 12 and 55 years [8]. In some African studies patients are younger than ours [9] [10] while in others they are older [11] [12]. In general, the age at which obstetric fistula occurs and the age of surgical treatment varies from region to region and from one period to another. The occurrence of OF is dependent not only on the culture but also on the degree of emancipation of the populations. Thus, we will see the age of onset of obstetric fistula advancing along with the age at first birth because of the level of schooling that is improving. In all cases, obstetric fistulas occur in the midst of reproduction and wealth production. It is therefore a brake on development. However, the level of schooling of patients is low in our study with 81.1% out of school compared to 91.5% of patients in the Tamou *et al.* [13]. In Guinea, Diallo *et al.* find a lower out-of-school rate (66.4%) [8]. OF is also a consequence of poverty and lack of financial autonomy of patients as shown by the professional characteristics of women reported in Benin and in African series [8] [13] [14] [15] [16].

These patients with OF are abandoned by spouses. Thus divorces or cases of abandonment are frequent. They range from 18.9% in Benin to 87% in Niger. [13] [14] [17]. This difference observed in the frequency of divorces after the occurrence of fistula can be explained on the one hand by culture and religion, on the other hand by the action of NGOs that work for the non-stigmatization of women victims of this condition.

The labor of delivery lasted on average 37.6 ± 25.4 hours with extremes of 8 hours and 96 hours. In 81% of cases, it lasted at least 24 hours. In several African studies, OF often result from labor over 24 hours [18] [19]. As the work of Brian Hancock has confirmed, the duration of delivery and the mother's strength in this severe test determine the extent of the injury [20]. In addition, Ouattara *et al.* believe that the labor-related OF that does not exceed 24 hours is of traumatic origin (tears of the genital and urinary tract as well as the rectum). On the other hand, when this work is prolonged beyond 24 hours, the mechanism is of ischemic order [21]. Hence the interest of making a diagnosis and early management of OF. These deliveries occurred for some in a maternity ward. Caesarean section was then the predominant delivery route [22]. In Pakistan and in some African countries, fistula occurred after vaginal delivery [16] [18] [23]. In all cases dystocia was involved. Caesarean section was therefore only the appropriate therapeutic consequence.

The predominant anatomoclinic types of OF remain vesico-vaginal fistula in most authors [6] [13] [14]. The anatomoclinical forms have been reported with unequal frequency throughout the world [22] [23] [24]. Qi Liya *et al.* reported 70.6% single fistulae, 5.9% complex fistulas and 11.8% severe fistulas [25]. This

predominance of complex fistulas in our study can be explained by the high frequency of fibrosis due to higher mean age-related fistulas. Moreover, the greater proportion of second-hand surgical treatment in our patients could partly explain the complexity of fistulas in our patients; the occasions contributing more to alter the peri fistulous tissues. Therefore, it is important to succeed the surgical cure on the first try and have them performed by competent surgeons.

The fistulorrhaphy according to Chassar Moir was the most performed surgical technique (74.3%), followed by urethroplasty (22.9%) and then uretero-vesical reimplantation in 2.8% of cases. In the literature, hysterorrhaphy were the most commonly used surgical technique [24] [25]. Chassar Moir's hysterorrhaphy is the basic technique that is suitable for the surgical treatment of simple fistula and must be mastered by any learner of fistula surgery.

The therapeutic results judged after two controls (postoperative day and day 14) by the methylene blue test were 68.6% cure with continence, 5.7% fistula closure with a residual IUE and 25.7% of total failure. Several authors have found similar results to ours [13] [25] [26]. Much better results have been reported in Africa [14] [20] [25]. Although the management of the OF in Parakou is the work of medical learners, the results are comparable to those of other countries where surgical treatment of OF has been a daily activity for several years.

The Study Limit

The limit of this study happens to be the small sample size for a study that is purely descriptive. The results cannot be generalized to the entire region of Borgou in Benin. Nevertheless, they allow to characterize the patients who suffer from OF and treated with CHUD/B. Further studies will be needed, however, to identify the factors that determine the occurrence of TF to lay the foundation for better prevention.

5. Conclusion

In Benin, the incidence of OF has been decreasing for about 20 years. Clinically, vesico-vaginal fistulas are the most common and they result in urinary losses. They affect poor women who are often stigmatized and abandoned by their husbands. The most commonly used surgical technique is Chassar Moir's fistulorrhaphy, which has proved very effective. The success rate of surgical treatment is 68.6%, 5.7% fistula closure with a residual IUE and 25.7% of total failure. In view of the results, it is possible to eradicate OF in Benin. To do this, treatment campaigns led by foreign missions must be replaced by treatment campaigns led by local doctors supported by African experts with long experience in the field. On the other hand, studies must specify factors that determine the success of surgical treatment. All supported by effective prevention based on the correct monitoring of pregnancies and deliveries assisted by qualified providers.

Conflicts of Interest

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

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