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Urogenital Fistula in Cote d'Ivoire: Epidemiological, Clinical and Therapeutical Aspects

B. Kouame*, F. Kramo, F. M. Gbeli, A. Fofana, A. G. Kakou, J. J. Gandonou, J. J. Damba, M. Roua, S. Yassin, P. G. Konan, A. H. Dekou, G. A. Ouegnin, K. Manzan

Urology Department, UHC of Cocody, Abidjan, Cote d'Ivoire
Email: *benjamin_kouam@yahoo.fr

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Abstract

Goal: Contribute to improve treatment of patients suffering from urogenital fistula (UGF). **Materials and methods**: It was a descriptive and prospective study conducted by the United Nations Population Fund (UNFPA) and the Ivorian government, on treatment of fistulas. The caravan took place on 4 periods of 10 days each and has enabled us to recruit 95 patients in the gynecological emergency department of Bouake's University Hospital Center (UHC) and from the surgical emergencies departments of the regional hospital centers (RHC) of Man and Bondoukou, in Man from 14th to 23rd of August 2013, then from 24th March to 02nd of April 2014; in Bouaké from 06th to 15th of November 2013 and in Bondoukou from 13th to 22nd of December 2013, respectively. **Results**: Average age of patients was of 30.8 years. 50 patients were single (52.6%). 44.2% of patients were farmers. In 95.8% of cases it was about obstetrical fistulas of which 52.6% were caused by caesareans. Average duration of delivery labor was of 2.3 days. Vesicovaginal fistulas represented 65.3% of UGF. Suture split were carried out on 90 patients (94.7%). Within 01 month, success rate was of 63.9% for 83 known patients. **Conclusion**: Incidence of UGF in our country is certainly underestimated. They are mainly of obstetrical origin and treatment relies on sutures split which give satisfactory results.

Keywords

Urogenital Fistula, Suture Split

1. Introduction

Urogenital fistula (UGF) carry out a solution of continuity between genital and

urinal tract. They are mostly vesicovaginal fistulas which are defined as being an abnormal and permanent communication between bladder and vagina, causing a permanent urine leakage into vagina. World Health Organization (WHO) estimates that 2 to 3.5 million of women suffer from this pathology in the world and the majority are in Africa [1].

UGF mainly caused in developing countries like Cote d'Ivoire is obstetrical and it represents 75% of fistula etiologies, in the age bracket of 15 to 35 years [2].

Treatment of this affection is surgical.

This study has been carried in order to contribute to improve treatment of patients suffering from a UGF.

2. Materials and Methods

It was a descriptive and prospective study organized by the United Nations Population Fund (UNFPA) and the Ivorian government, on treatment of fistula.

The caravan took place on 4 periods of 10 days each in the gynecological emergencies department of Bouake's UHC, and from the surgical emergencies departments of RHC of Man and Bondoukou, in Man from 14th to 23rd of August 2013, then from 24th March to 02nd of April 2014; in Bouaké from 06th to 15th of November 2013 and in Bondoukou from 13th to 22nd of December 2013 respectively.

The study was about 95 patients suffering from an UGF and that have a seemingly good health. Patients suffering from an incontinence without any related urogenital fistula or non-curable urogenital fistula (well spread fistula with a total destruction of the urogenital structures, non-repairable with anastomosis) or vaginal sclerosis already formed; making the reparation of the fistula impossible; and those of which the fistulous orifice have not been found during exploration of vaginal cavity under spinal anesthesia, were discarded from the study. The population received an agreement notice regarding the study.

Parameters studied were age, occupation, marital status, obstetrical history and fistula's surgical history, type of fistula, treatment, its results and duration of post-surgical hospital stay. Surgery results were about operative death rate, operative morbidity, therapeutic setback, healing, and recurrence.

3. Results

1) Epidemiological data

- **Age**

Patients' average age during recruitments were of 30.8 years ± 10 years (extremes: 12 - 61 years).

Average age during delivery that caused fistula were of 24.4 years ± 8 years (extremes 12 - 61 years).

27 patients (29.7%) were of an age ≤ 18 years and 62 patients (68.1%) were of an age superior to 18 years during delivery that caused fistula. Age during delivery was not known for 3 patients.

- **Occupation in Table 1**

2) Diagnostic data

- **Fistulas Occurrence Circumstances, as shown in Table 2**

Surgical obstetrical circumstances represented 56.8% of cases (n = 54) and non-surgical obstetrical circumstances represented 38.9% of cases (n = 37).

- **Distribution of patients according to place of delivery that have caused fistula**

74 patients (87.3%) delivered in a maternity hospital and 14 patients (15.4%) delivered outside a maternity hospital. The place of delivery was not specified for 3 patients (3.3%). Among those that delivered outside a maternity hospital, delivery was done with medical care for only one patient (7.1%) versus 13 deliveries without any medical care (92.9%).

- **Duration of delivery labor**

Average duration of delivery labor was of 2.3 ± 1.5 days (extremes: 0-10 days). For patients whose labor duration was known (n = 89), it was more than 24 hours in 77.5% of cases (n = 69).

- **Types of fistulas**

Distribution of patients according to fistulous course and type of fistulas, as shown in Table 3.

Table 1. Distribution of patients according to occupation.

Occupation	Number	Percentage (%)
Farmer	42	44.2
Housewife	30	31.6
Trader	15	15.8
Unspecified	3	3.2
Student	2	2.1
Teacher	1	1.1
Hairdresser	1	1.1
Cattle Breeder	1	1.1
Total	95	100

Table 2. Distribution of patients according to fistulas occurrence circumstances.

Fistulas Occurrence Circumstances	Number	Percentage (%)
Caesarean	50	52.6
Lower Route Delivery	37	38.9
UR Hysterectomy	4	4.2
Ovarian Cystectomy	2	2.1
UF Hysterectomy	1	1.1
Ballistic Injury	1	1.1
Total	**95**	**100**

UR = Uterine Rupture UF = Uterine Fibroid.

Table 3. Distribution of patients according to fistulous course and Kees Waaldijk classification [3].

Type	Fistulous Course	Number	Percentage (%)
Type I	VV Fistula	62	65.3
	Vesico Uterine Fistula	2	2.1
Type II	VU Fistula	13	13.7
	Uretro-VV Fistula	7	7.4
Type III	UeV Fistula	5	5.3
	UV +VV Fistulas	2	2.1
	RV and VV Fistulas	1	1.1
	UeV + VV+ Micro Bladder Fistulas	1	1.1
	UV + RV Fistulas	1	1.1
	Uretro-VV and VV Fistulas	1	1.1
Total		**95**	**100**

VV: VesicoVaginal UV: Uretro-Vaginal RV: Recto-Vaginal UeV: Uretero-vaginal.

Table 4. Distribution of patients according to fistulas size.

Fistulas Size	Number	Percentage (%)
Small (<2 cm)	71	74.7
Medium (2 - 3 cm)	16	16.8
Large (4 - 5 cm)	7	7.4
Extensive (>6 cm)	1	1.1
Total	95	100

Among types II Aa (n = 12), 8 were uretro-vaginal and 4 were uretro-vesicovaginal. Concerning types II Ab (n = 8), 5 were uretro-vaginal and 3 uretro-vesicovaginal.

In appendix, in Figure S2 and Figure S4, you will find type I fistulas and in Figure S1 and Figure S3 type III fistulas.

- **Fistulas size**

Average size of fistulas were of 1.2 ± 1.2 cm (extremes: 0.1- 6cm), as shown in Table 4.

3) Therapeutic data

- **Operative technique**

Sutures split were carried out on 90 patients (94.7%); among them, 7 had in addition a colpo-suspension to sustain the uretro-vesicovaginal sutures. For 5 patients (5.3%), an exclusive ureteral re-implantation has been carried out to treat the uretero-vaginal fistulas, as shown in Table 5.

- **Post operative results**

On post-operative D0, sutures were not hermetic in 3 cases (3.2%).

After 1 month, results were known for 83 patients (87.4%). They were not known for 12 patients (12.6%). There is 53 success (63.9%) and 30 failures (36.7%)

Table 5. Distribution of patients according to type of split.

Operative technique	Number	Percentage (%)
Vesicovaginal DS	62	68.9
Uretral + vaginal DS	13	14.4
Uretro-vesicovaginal + colpo-suspension DS (Burch)	7	7.8
Vesico + uterine DS	2	2.2
Uretro-vaginal + vesicovaginal DS	2	2.2
Rectal + vaginal DS	2	2.2
Uretro-vaginal + vesicovaginal DS	1	1.1
Vesicovaginal DS and uretero vesical re-implantation	1	1.1
Total	**90**	**100**

SS = suture – split.

among the known results.

3 months afterwards, 80 patients (84.2%) were seen again and we lost track of 15 patients (15.8%). There was 54 success (67.5%) and 26 failures (32.5%) among the patients that were seen again.

Among patients operated since at least 6 months (n = 48, 50.5%); 36 (75%) were seen again and we lost track of 11 (22.9%). There was 23 success (63.9%) and 13 failures (36.1%) among the patients that were seen again.

4. Discussion

1) Epidemiological aspects

This study enabled us to recruit on average 23.8 patients operated within 10 days during each of our caravans. This figure though high does not reflect the number of patients that needed care during the same period, because during each caravan, numerous patients were not treated. This was due to the fact that they got the information late and/or were coming late, meanwhile the number of patients to benefit from surgery was set in advance.

Patients suffering from UGF are poor, marginalized, sometimes illiterate and generally live in rural area, meanwhile treatment is carried out in urban hospitals. We also need to consider the low level of awareness of population by medias and health centers. Patients' age in our series were on average of 24.4 years during delivery that caused fistula and of 30.8 years during treatment. Comparison with that of other literature series appeared difficult to us because authors consulted did not always precise whether average age stipulated was at occurrence of fistula or noted during treatment [4] [5] [6]. Anyway, average age we report is superior to that reported by some authors [4] [5] [7] for whom this average age is found in between 17 and 21 years. On the other hand it is closed to that of other authors for whom average age varies between 27 and 33 years [6]-[10]. Many factors among which tradition, religion, low rate of mothers schooling could explain these differences in average age [11].

2) Diagnostic aspects

We had reported 95.8% of UGF with obstetrical origin. This rate may be superimposed to those of literature, found between 85% and 98.5% and shows that UGF of obstetrical origin are more common [1] [6] [8] [9]. This finding is far from that of European series, in which UGF are of iatrogenic or neoplastic origins. The high level of provision of medical care in European states could explain the predominance of iatrogenic UGF. In our series 15.4% of deliveries that caused UGF were carried out outside health centers. This finding has already been made with some nearly identical rates of 15% and of 16% by African authors. On the other hand, others noted higher rates of deliveries outside health centers; these rates are found between 47% and 84.5% [5] [12] [13]. This fact which proves that differences between African countries, in the level of provision of medical care could also explain the rate of obstetrical fistula related to a non-surgical action higher in Harouna Y D [5] series as compared to series of other authors [12] [13].

Our study has shown that 56.8% of obstetrical fistulas were related to a surgical action. Dekou *et al.* had found a nearly identical rate of 58.6% [8]. These authors explain this high rate by the inexperience of practitioners or by long duration of dystocic labor.

Duration of labor that caused fistula in patients of our series were superior to 24 hours in 77.5% of cases with an average of 2.3 days.

According to the works of Tebeu, PM *et al.* [14], average duration of labor was superior to 24 hours in 20% to 95.7% of cases with averages varying between 2.5 and 4 days according to the series and 57.6% to 94.8% for patients monitoring their labor at home and were secondarily transferred to hospital to ease the delivery. Once the decision to consult a doctor is taken, difficulty of access to a health center or to the nearest recommended medical center is an essential element in the risk factors of the obstetrical fistulas.

At anatomic-clinical level, we adopted Kees Waaldjik classification. It enabled us to determine a higher level of type I fistula (67.4%) corresponding to vesico-vaginal fistulas as in the majority of series [1]. Concerning uretro-vaginal fistulas and uretro-vesicovaginal corresponding to type II, they represented only 13.7% and 7.4% respectively. In the series of Aristide Kaboré *et al.* [1], these rates are respectively of 4.1% and 5.9% contrary to the series of Said Moudoumi [10], where rates of uretro-vaginal fistulas were high and reached 39.9%. Concerning shapes (vesicle or urtero-vaginal and rectovaginal) which were part of type III injuries, represented 2.2% of cases, those were in accordance with literature where these rates vary between 1% and 23% [14].

3) Therapeutic aspects

Trans-vaginal course has been the most used (82.1%), it remains the recommended course, transabdominal course in 11.6% of cases and the dual course in 6.3% of cases.

Suture split without contribution of a closed structure has been the main me-

thod of treatment used for fistulous orifices of a size varying from 0.1 to 6 cm. This attitude and also that of Wall LL *et al.* who treat UGF of a diameter going from 0.2 to 8 cm, by suture split [15]. A large mobilization of fistula enabled to compensate for the loss of substance and to carry out invagination sutures without tension like some authors. Results have been analyzed in our series after a postponement of one month, at 3 to 6 months. At 6 months, patients were declared healed. Most of the authors declared as success the surgical closing of fistula at the time of exit from hospital [12] [16]. This could be due to difficulties of seeing patients again after their exit from hospital [12].

Success rate at one month of post-operative was of 63.9%, at 3 months it was of 67.5% and at 6 months of 63.9%.

These results are satisfactory because bracket of success rates reported in literature varies from 57% to 100% [11] [17]. These therapeutic success as well as failures are however according to the type of fistula, etiology, state of perifistulous tissues, of possible previous interventions and of surgeon experience [6] [12] [17] [18]. Failure rate which were of 36.1% in our series was made up of 90% of recurrence of uro-genital fistula. These cases will require one or more re-intervention in order to get complete closure of fistula [15].

Limitations of the study were on the follow-up and the second line care for of therapy failures.

Urinary stress incontinences have been considered as failures. They represented 6.7% of therapeutic failures. This rate was very weak in comparison to the variable rates of 16% to 32% of stress incontinence of cases operated, for some authors [15].

5. Conclusions

Incidence of UGF in our country is certainly underestimated. They are a social and psychological drama for women which suffer from it. They are mainly of an obstetrical origin in Cote d'Ivoire and their diagnosis has been essentially clinical.

Various anatomo clinical varieties have been identified of which majority have been treated by suture splits with satisfactory results, in some poorly equipped local center.

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Appendix

EXAMPLES OF ICONOGRAPHIES OF UROGENITAL FISTULAS

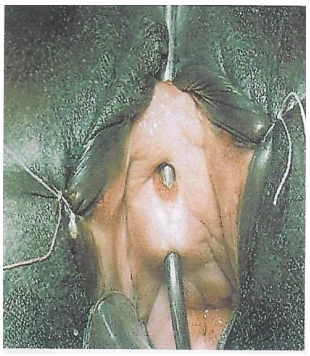

Figure S1. Uretro-vaginal and vesicle-vaginal fistulas.

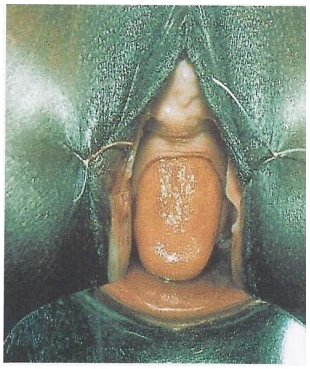

Figure S2. Uretro-vaginal fistulas with ectropion.

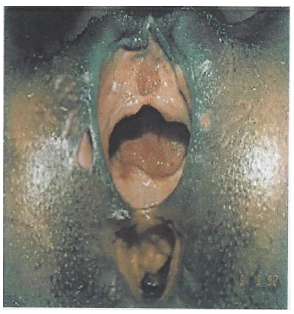

Figure S3. Vesico-vaginal and recto-vaginal fistula.

Figure S4. Vesico-vaginal Fistulas.