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The pattern of non-obstetric fistula: A Cameroonian experience

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ABSTRACT

Objective: To investigate the pattern of Non-obstetrical genital fistula (NOGF) in Cameroonian context. **Materials and methods:** This was a cross-sectional analytic study, with two groups of patients, including those treated for non-obstetrical fistula as subject, and their obstetrical counterparts as the control. Data were retrieved from the obstetric fistula database of the Department of Obstetrics and Gynecology in the University Teaching Hospital of Yaoundé Cameroon for patients operated from January, 1, 2009 to December 31, 2012. **Results:** NOGF represented 19.78% of genital fistula. Uro-genital fistula (UGF) represented 72.20% while non-obstetrical genito-digestive fistula (GDF) represented 27.80% of NOGF. The main cause of UGF was hysterectomy (46.15%) while the main cause of genito-digestive fistula was vaginal infections (40.00%). Most patients had never been operated before their arrival in the YUTH (84.60% for UGF and 60.00% for GDF). We had one failure at first surgical attempt. **Conclusion:** UGF fistula is the main type of NOGF in Cameroonian context, with hysterectomy being the leading cause. Proper knowledge on NOGF will enable better strategies to fight against genital fistula.

1. Introduction

Genital fistula is the presence of a hole between a woman's genital tract and urinary tract i.e. vesico-vaginal fistula or between the genital tract and the rectum i.e. recto-vaginal fistula[1,2]. The vesico-vaginal fistula is characterized by the leakage of the urine through the vagina, and recto-vaginal fistula is characterized by the leakage of flatus and stool through vagina[3–5]. Either vesico-vaginal or recto-vaginal fistula, are associated with presence of a persistent offensive odor leading to social stigma, hence patients are ostracized[6]. Based on the circumstance of

occurrence, genital fistula can be classified into two main groups as obstetrical and non-obstetrical cases. Obstetric fistula is the entity of fistula which results from prolonged labor, instrumental delivery, caesarian section or direct tear during abortive maneuvers[2] and non-obstetrical genital fistula is an entity which occurs under non pregnancy related circumstances[7].

Our study carried on non-obstetrical genital fistula (NOGF). It is the first cause of genital fistula in developed countries. In Sub-Saharan Africa as among Asian developing countries, non-obstetric fistula accounts for 4% to 20%, the first cause being obstetrical fistula[2]. Therefore, due to the public health issues, previous studies focused more on obstetric fistula that is due to the delivery in absence of qualified and competent staff. Hence, little is known about non-obstetric fistula in Cameroon.

This study aimed at comparing NOGF to OF regarding their socio-demographic characteristics and determining

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indications and therapeutic pattern among fistula patients treated at the Yaoundé University Teaching Hospital, Cameroon.

2. Materials and methods

We conducted this cross-sectional study after approval of National Committee of Ethics. Study population included the overall patients treated for non-obstetrical fistula as subject, and their obstetrical counterparts constituted the control group. Data was retrieved from the obstetric fistula database of the Department of Obstetrics and Gynecology in the University Teaching Hospital of Yaoundé Cameroon.

Data was collected from files of patients who were operated for genital fistula from January 1, 2009 to December 31, 2012. Variables of interest were the anatomic classification as genitourinary fistula (GUF), genito-digestive fistula (GDF), circumstance of fistula occurrence, socio demographic characteristics (age, marital status, education, occupation and parity); potential cause, human immunodeficiency virus status, surgical treatment outcome (failure, close but not continent, close and continent).

The software used for data analysis was Epi Info version 3.5.3 (CDC GA Atlanta USA). Characteristics of the study population were compared using *Chi* square of heterogeneity or Fisher Exact test were more suitable. A difference was considered as significant if *P*-value less than 0.05.

3. Results

The total number of operated genital fistula patients during the period was 91 among which, 18 were non pregnancy related leading to the prevalence of non-obstetric genital fistula of 19.78%. Uro-genital fistula (UGF) represented 72.2% of NOGF while non-obstetrical genito-digestive fistula (GDF) represented 27.8% of NOGF.

Characteristic of non-obstetric fistula patients and that of their obstetrical counterparts are presented in Table 1. Patients were equally distributed among the two study populations with regard to marital status, education, occupation and HIV status (*P*>0.05). Age at diagnosis and parity of patients were heterogeneously distributed among NOF and OF patients (*P*< 0.05).

The median age was 37 years (24–48) and 28 years (22–34) respectively among NOF and OF patients. Compared to NOF patients, OF patients were more likely to have never deliver (27.8% vs. 0%). The main cause of UGF was hysterectomy (46.15%, 6/13) while the main cause of genito-digestive fistula was vaginal infections (40.00%, 2/5). Vesico vaginal fistula was the main organic class of UGF (69.20%). Foreign body caused 15.38% (2/13) uro-genital fistula and 20.00% (1/5) genitor-digestive fistula. Other causes contributed to 38.46% (5/13) uro-genital fistula and 40.00% (2/5) genito-digestive fistula, respectively. Low recto vaginal fistula was the main organic class of genito-digestive fistula (60.0%). Class III fistula was the main prognosis class for UGF (61.5%) while class I and II fistula were the main prognosis classes in GDF

(40%)

The management of NOGF in our study was surgical. Most patients had never been operated before their arrival in the YUTH (84.6% for UGF and 60.0% for GDF).

Information on potential risk for non-obstetrical fistula is presented in Table 2. Compared to OF patients, those with NOF were more likely to be aged 30 or above at diagnosis (69.0% vs. 30.9%; *OR*: 3.9, 95% *CI*: 1.2–12.2; *P*<0.05). While considering parous women, compared to the group of obstetric fistula, NOF patients were more likely to have had at least two deliveries (80.0% vs. 20.0%; *OR*: 4.7, 95% *CI*: 1.1–24.6, *P*=0.04).

Table 1

Characteristics of obstetrical and non-obstetrical patients.

Characteristics	Non-obstetrical genital fistula			<i>P</i> -value
	Yes <i>n</i> =18	No <i>n</i> =73	Total <i>n</i> =91	
Age(years)				0.0345*
11–19	3(16.7)	13(17.8)	16(17.6)	
20–29	2(11.1)	31(42.5)	33(36.3)	
30–39	6(33.3)	20(27.4)	26(28.6)	
40–49	4(22.2)	6(8.2)	10(11.0)	
50–59	2(11.1)	3(4.1)	5(5.5)	
60–69	1(5.6)	0(0.0)	1(1.0)	
Marital status				0.4094
Married	10(55.6)	27(37.0)	37(40.7)	
Single	8(44.4)	46(63.0)	54(59.3)	
Level of studies				0.5774
None	0(0.0)	3(4.1)	3(3.3)	
Primary	6(33.3)	22(30.1)	28(30.8)	
Secondary	9(50.0)	42(57.5)	51(56.0)	
University	3(16.7)	6(8.2)	9(9.9)	
Profession				0.1037
Unemployed	13(72.2)	64(87.7)	77(84.6)	
Employed	5(27.8)	9(12.3)	14(15.4)	
Region of origin				0.3005
Centre	11(61.1)	44(61.1)	55(61.1)	
Littoral	3(16.7)	3(4.2)	6(6.7)	
Nord–West / West	2(11.1)	15(20.8)	17(18.9)	
East / South	2 (11.1)	7(9.7)	9(10.0)	
Great north	0(0.0)	3(4.2)	3(3.3)	
Parity				<0.001*
0	5(27.8)	0(0.0)	5(5.5)	
1–5	8(44.4)	66(90.4)	74(81.3)	
6–11	5(27.8)	7(9.6)	12(13.2)	
HIV serology				0.1408
Negative	14(77.8)	66(90.4)	80(87.9)	
Positive	4(22.2)	7(9.6)	11(12.1)	

*= significant *P* value

Table 2

Impact of the age and parity as risk factors for non-obstetrical genital fistulas.

Patient's characteristics	Non-obstetrical fistula (n,%)		Total	OR ^a (95% CI)	P value
	Yes	No			
Age					
11 – 29	5(10.2)	44(89.8)	49	1 ^b	
30 – 62	13(31.0)	29(69.0)	42	3.9(1.2–12.2)	0.013
Parity					
1	2(5.0)	37(95.0)	39	1 ^b	
2 – 11	6(20.0)	29(80.0)	35	4.7(1.0–24.6)	0.046

^aOdd ratio, ^bReference

4. Discussion

The prevalence of non-obstetrical genital fistula was 19.78% of all genital fistulas at the YUTH. The frequency of non-obstetrical genital fistula was similar to that found in most Black Africa and South of Asia countries, ranging from 4% to 20% of all genital fistulas[2,8]. High prevalence of non-obstetrical fistula were reported in industrialized countries ranging from 80%–93%[9].

Genito-urinary fistula was encountered in 72.2% of all non-obstetrical fistula in the study population making it the most frequent form of genital fistula as reported by others [2].

Reported in 46.15% of non-obstetric genitourinary fistula, hysterectomy was the leading cause of non-obstetric related genito-urinary fistula. These findings were quite lower with regard to the proportion of 50% to 93% reported in many studies either in developed or developing countries[9]. This observation can be due to the close anatomic relationship between the genital and urinary tracts. Additionally, this can be due to the fact that most of these hysterectomies were performed by unqualified or unskilled personnel.

NOGF is observed more in aged women than in young ones, similarly as observed by Forsgren *et al* in Sweden[7]. The age of NOGF patients varied from 11 to 62 years with a median of 37 years. Our results are lower than those from the study by Van der Hagen *et al.* where the age varied from 33 to 72 years with the median of 53 years[10].

Compared to OF patients, those with NOF were more likely to be aged 30 or above at diagnosis. These results although lower were comparable to those of Forsgren *et al.* who reported 8-fold increased of the risk of NOGF from the age of 50 (OR 7.7, 95% CI 3.0–20.3)[7].

We found that, the majority of patients were at their first parity (27.8%) and the more parity from 2 multiplied the risk of non-obstetrical fistula by 5. These results were different from those from the literature in which the parity doesn't come out as a risk factor[7]. Our results could explain themselves by the fact that the elevated parity exposed the women to benign gynecological conditions surgically managed[7].

The vaginal route was the main surgical approach in our cases. Only one case of UGF had an abdominal approach. This is because the latter was uretero-vaginal fistula and uretero-neo-cystostomy was the procedure used for its management. Cases were followed during six months as

most of them defaulted thereafter. During these six months Successful surgical rate was recorded in 92.3% for patients with UGF and 100% for those with GDF while 1 failure (7.7%) was recorded 1 month after surgery. The success rate as close with continence is in agreement with finding reported in literature ranging from 32% to 100%[11,12].

NOGF is of a non negligible frequency but still remains an unexplored pathology especially in our context because most cases of genital fistula are of obstetrical origin. However a good knowledge of this pathology will enable to put forth better strategies to prevent this shameful condition which is genital fistula. Hysterectomies are leading causes of non-obstetric related vesico-vaginal fistula and infections are leading causes of recto-vaginal fistulas. Surgeon should not underestimate the fistula risk while proceeding for hysterectomy.

Conflict of interest statement

The authors declare no conflict of interest

References

- [1] Landry E, Frajzyngier V, Ruminjo J, Asimwe F, Barry TH, Bello A, et al. Profiles and experiences of women undergoing genital fistula repair: Findings from five countries. *Glob Public Health* 2013; **8**(8): 926–942.
- [2] Tebeu PM, Fomulu JN, Khaddaj S, de BL, Delvaux T, Rochat CH. Risk factors for obstetric fistula: a clinical review. *Int Urogynecol J* 2012; **23**(4): 387–394.
- [3] Cromwell D, Hilton P. Retrospective cohort study on patterns of care and outcomes of surgical treatment for lower urinary-genital tract fistula among English National Health Service hospitals between 2000 and 2009. *BJU Int* 2013; **111**(4 Pt B): E257–E262.
- [4] Chereau E, Stefanescu D, Selle F, Rouzier R, Darai E. Spontaneous rectovaginal fistula during bevacizumab therapy for ovarian cancer: a case report. *Am J Obstet Gynecol* 2009; **200**(1): e15–e16.
- [5] Shefren JM. The tragedy of obstetric fistula and strategies for prevention. *Am J Obstet Gynecol* 2009; **200**(6): 668–671.
- [6] Arrowsmith SD, Ruminjo J, Landry EG. Current practices in treatment of female genital fistula: a cross sectional study. *BMC Pregnancy Childbirth* 2010; **10**: 73.
- [7] Forsgren C, Lundholm C, Johansson AL, Cnattingius S, Altman D. Hysterectomy for benign indications and risk of pelvic organ fistula disease. *Obstet Gynecol* 2009 Sep; **114**(3):594–9.
- [8] Uprety DK, Subedi S, Budhathoki B, Regmi MC. Vesicovaginal fistula at tertiary care center in eastern Nepal. *JNMA J Nepal Med Assoc* 2008; **47**(171):120–122.
- [9] Leng WW, Amundsen CL, McGuire EJ. Management of female genitourinary fistulas: transvesical or transvaginal approach? *J Urol* 1998; **160**(6 Pt 1): 1995–1999.
- [10] van der Hagen SJ, Soeters PB, Baeten CG, van Gemert WG. Laparoscopic fistula excision and omentoplasty for high rectovaginal fistulas: a prospective study of 40 patients. *Int J Colorectal Dis* 2011; **26**(11): 1463–1467.
- [11] Olusegun AK, Akinfolarin AC, Olabisi LM. A review of clinical pattern and outcome of vesicovaginal fistula. *J Natl Med Assoc* 2009; **101**(6): 593–595.
- [12] Sjoveian S, Vangen S, Mukwege D, Onsrud M. Surgical outcome of obstetric fistula: a retrospective analysis of 595 patients. *Acta Obstet Gynecol Scand* 2011; **90**(7): 753–760.