



Socio-Demographic and Delivery Characteristics of Patients with Obstetric Fistula in the Haut-Katanga Province, Democratic Republic of Congo

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Abstract

Background: In developing countries, fistulae are generally caused by long-obstructed labors. Obstetric fistula (OF) is a severe condition that can have devastating impacts on a woman's life. The objective of this study was to describe the socio-demographic and delivery characteristics of patients with OF in the Haut-Katanga province of DR Congo.

Methods: This was a prospective, descriptive study on 413 patients with OF in the Haut-Katanga province during the period from September 2009 to December 2018.

Results: At the initial occurrence of OF, 53.3% of patients were younger than 20 years (mean age: 21.3±6.7 years), and 65.8% were primiparous. More than half had primary education but 39.7% were illiterate; 70.2% of the patients were separated or divorced. Fistula developed after delivery at home in 239 (57.9%) of 413 women. A total of 393 (95.2%) women developed OF after vaginal delivery. A total of 387 (93.7%) of the 413 women reported that the fetus did not survive the labor during which fistula developed. Out of all the women, 92.3% had a vesico-vaginal fistula. The mean fistula age was 6.5 years, and surgical repair was successful in 82.9% of the cases.

Conclusion: Obstructed labor remains as the most important cause of OF in Haut-Katanga. It is important to prevent OF arising from obstructive causes. The surgical treatment of OF depends upon the type, size and location of the fistula.

Keywords: Obstetric fistula, Socio-demographic, Delivery, Haut-katanga

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Introduction

An obstetric fistula (OF) is an abnormal communication between the vagina and the urological or colorectal systems caused by obstetrical trauma, resulting in urinal or fecal incontinence (1). This condition is common among women living in low-income countries, where it usually develops as a result of obstructed labor or inadequate access to prenatal and intrapartum care (2). Despite being a global health challenge, it is difficult to obtain accurate statistics on OF because of the lack of reliable data due to the fact that it mainly affects women living in highly remote regions.

About 2 to 3.5 million women live with fistula worldwide, with 50, 000-100, 000 new cases occurring each year, most of which are in sub-Saharan Africa and Asia (3-6). The exact prevalence of OF in the Democratic Republic of Congo (DRC) is not well known, but the United Nations Population Fund (UNFPA) estimates that about 40, 000 women suffer from this condition (3). The 2007 Demographic and Health Survey indicated that 0.3% of women report having experienced the symptoms of OF (7). In fact, these values probably underestimate the true occurrence of OF because many of the affected women remain unidentified due to their social isolation. In developing countries, the literature review shows that OF seems to be linked with certain socio-economic and cultural factors such as young age at marriage, poverty and illiteracy, and living in rural areas with a lack of obstetric care (5, 8).

Obstetric fistulae usually affect primiparous women who have prolonged in-home deliveries lasting for several days without access to emergency obstetric care, including rescue procedures such as cesarean section (8).

The main objective of this study was to describe the socio-demographic and delivery characteristics of patients with OF in the Haut-Katanga province of the DRC.

Methods

This was a prospective descriptive study that took place from September 2009 to December 2018 in the province of Haut-Katanga (DRC). This work was the result of several campaigns of free surgical management for OF organized by non-governmental organizations (UNFPA, Médecins du Désert, Médecins sans Frontières Hollande) in collaboration with the provincial Ministry of Public Health, who wished to provide access to specialized care to the populations living in the following health zones: Pweto, Kilwa, Mitwaba, Kasenga, Kashobwe and Lubumbashi.

This study involved 413 women with OF who sought medical care after community awareness was improved in and around the mentioned health zones. We included all women with OF who were referred for surgical

repair during the study period and in our study setting. The data was collected via a questionnaire, which was completed based on data collected from the patient's interview, the outpatient registers, the operating room register, and the hospital records. These documents provided necessary information on the patients from admission to discharge. The recruitment process consisted of awareness periods organized by non-governmental organizations (NGOs) working in this domain. They went to the distant regions of the country in seek of women with OF.

We studied the socio-demographic and delivery characteristics of these patients, as well as the parameters related to OF and the outcome of surgical repair.

Statistical analyses were made using the STATA 15 software. We used the whole sample to summarize the sociodemographic, obstetrical and fistula-related characteristics, and the outcome of surgical repair was described with frequencies (%) and means as well as standard deviation.

This study obtained the approval of the Medical Ethics Committee of the University of Lubumbashi. The data was collected anonymously.

Results

A total of 413 patients with OF were enrolled during the study period. At the time of recruitment for surgical repair, the mean age of the patients was 27.8±9.9 years, and 47.5% of the patients were aged 20 to 29 years. Patients had a mean parity of 2.4±2.1, and almost 50% were primiparous. More than half had primary education but 39.7% were illiterate; 70.2% of the patients were separated or divorced (Table 1). At the occurrence of OF, 53.3% of the patients were younger than 20 years (mean age: 21.3±6.7 years), and 65.8% had completed one delivery (mean parity: 1.6±1.0).

Table 1: Socio-demographic characteristics of patients with OF at surgical repair

Variable	Number (n=413)	Percentage
Age		
<20 years	76	18.4
20-29 years	196	47.5
30-39 years	93	22.5
≥40 years	48	11.6
Parity		
1	205	49.6
2-4	145	35.1
≥5	63	15.3
Education level		
None	164	39.7
Primary	227	55.0
Secondary	22	5.3
Marital status		
Divorced/Separated	290	70.2
Married/Union	123	29.8

Fistula developed after delivery at home in 239 (57.9%) of 413 women. A total of 393 (95.2%) women developed OF after vaginal delivery, while the other 20 (4.8%) reported having delivered by caesarean section. In more than 30% of the patients, the labor phase of delivery lasted 3 days or more (mean duration of labor: 2.2 days). A total of 387 (93.7%) of the 413 women reported that the fetus did not survive the labor during which OF developed (Table 2).

Table 2: Socio-demographic and delivery characteristics of patients with OF at the onset of obstetric fistula

Variable	Number (n=413)	Percentage
Age at onset of fistula		
<20 years	220	53.3
20-29 years	149	36.1
≥30 years	44	10.6
Parity at onset of fistula		
1	272	65.8
2	87	21.1
≥3	54	13.1
Event after which fistula occurred		
Vaginal delivery	393	95.2
Cesarean section	20	4.8
Duration of labor		
1 day	55	13.3
2 days	232	56.2
≥3 days	126	30.5
Place of delivery		
Home	239	57.9
Health center	91	22.0
Reference general hospital	83	20.1
Neonatal outcome at delivery		
Stillborn	387	93.7
Alive	26	6.3

The mean age of the fistulae was 6.5 years, and nearly 43% of fistulae were 5 years or older. Almost 26% of our sample had a history of fistula repair, and 26.2% had cicatricial fibrosis (Table 3).

Of the 413 women, 381 (92.3%) had a vesico-vaginal fistula, 23 (5.6%) had a recto-vesico-vaginal fistula, 5 (1.2%) had a rectovaginal fistula, 2 (0.5%) had an uterovaginal fistula and 2 (0.5%) had a vesico-uterine fistula. A total of 392 women underwent surgical repair to correct the OF, and in 325 (82.9%) of these women, surgical repair was successful (complete closure of the fistula with or without sphincter deficiency). Nearly 79% (308/392) of the fistulae had been repaired by the trans-vaginal approach (Table 3).

Discussion

This study shows that at the onset of fistula, the mean age of women was 21.4 years, and more than half of the patients were adolescents (<20 years). In Zambia, Holme *et al.* found that the mean age of patients with OF was 22 years old (8). Obstetric fistula

Table 3: Fistula's characteristics and outcome of surgical repair

Variable	Number (n=413)	Percentage
Age of fistula		
<1 year	7	1.7
1-4 years	229	55.4
≥5 years	177	42.9
Previous surgical repair		
None	306	74.1
One	67	16.2
Two or more	40	9.7
Vaginal scarring		
Yes	108	26.2
No	305	73.8
Type of fistula		
Vesico-vaginal	381	92.3
Rectovesico-vaginal	23	5.6
Rectovaginal	5	1.2
Uretero-vaginal	2	0.5
Vesico-utérine	2	0.5
Number of fistulae		
1	375	90.8
2	35	8.5
3	3	0.7
Route of repair*		
Vaginal	308	78.6
Abdominal	71	18.1
Combined	13	3.3
Outcome of surgical repair		
Success	325	78.7
Failure	67	16.2
No operated	21	5.1

*n=392

occurs predominantly in young parturients: the very young age of the patient has been noted by several researchers (8-10). Previous studies have found a high rate of obstetrical complications in teenagers (11, 12). The increased obstetrical risk in adolescent girls may be partially explained by anatomical immaturity, which is responsible for the anomalies of the basin and more frequent obstetric complications (13).

The majority of our patients (65.8%) were primiparous at the onset of fistula. Our results are comparable to other studies conducted in Uganda and Zambia, where women with OF were primiparous at fistula occurrence (8, 14). This shows that OF usually affects primiparas probably because of pelvic insufficiency leading to prolonged and obstructed deliveries (cephalopelvic disproportion) of up to more than two days on average. These deliveries took place at home in most cases (57.9%). In other cases, deliveries were carried out in a health facility (health center or reference general hospital), but this does not always entirely involve the skills of health professionals. Our patients, mostly rural, live in remote areas isolated by a poor road network, making emergency obstetric evacuation difficult or delayed. These patients travel hundreds of kilometers to reach

a health center where they arrive with obstructed labor and fistula under development. In previous studies, deliveries producing fistulae occurred at home in 70.7 to 97.1% of cases (15-18).

The vaginal route was the main route of delivery at the onset of fistula in our study, whereas caesarean section was performed in 4.8% of cases. Diverging results have been reported in Zambia and West Africa (2, 8, 19), with 50% of fistulae occurring during caesarean section.

Regarding the neonatal outcome during fistula delivery, perinatal mortality was 93.7% in our study, ranging from 78.1 to 96% in the literature (8, 20, 21). This excess neonatal mortality is easily understood if one considers the duration of labor, which is generally long and can reach several days. In fact, the development of fistula is merely the result of the body's struggle against dystocia. Nsambi *et al.* highlighted the more frequent use of particularly harmful practices during deliveries conducted at home: traditional birth attendants make use of prohibited maneuvers (e.g., use of mortar and pestle pressure on the belly of the parturient) to force the expulsion of the fetus, thus leading to obstetric morbidities such as uterine rupture or obstetric fistula (15). This situation is the result of delayed access to emergency obstetric care, which is a common finding of all studies conducted in low-resource countries. Reasons for the delayed decision to seek care may include financial, cultural, religious and geographic reasons, with many women living too far from a clinic to receive timely care (15, 16).

One hundred and twenty-three (29.8%) patients in our study were living with their husband despite fistula, and these results appear to be lower than those observed in Zambia (8), where 75.7% of fistula patients were still married. This differs from our results and the results of previous studies, which seemed to suggest that women with OF were neglected and abandoned by their husbands (5, 6). This difference in the proportion of married women is difficult to explain, but may be due to differences in cultural and religious beliefs in different study populations.

A high number of the patients in this study had a very low level of education (only 5.3% had a secondary level). This could be explained by the fact that women with OF had dropped out of school to get married or had an early pregnancy. The same was found by other researchers, who reported a high number of patients without formal education (2, 5, 15, 22). This could be explained by the low literacy rate in rural areas where these women live (7).

The majority of patients in our study (92.3%) had a vesico-vaginal fistula alone, and 28 patients (6.8%) had a rectovaginal fistula alone or associated with a vesico-vaginal. Our results corroborate those of previous studies, where most patients had a vesico-vaginal fistula (8, 14, 15). This high frequency of vesico-vaginal fistulae compared with other fistulas is probably due to the greater likelihood of

compression of the anterior vaginal wall by the fetal head against the pelvis, resulting in greater ischemia of the bladder than the rectum.

The success rate after surgical repair of fistulae varies from one center to another and is determined by many factors such as the fistula site, degree of healing, previous attempts at repair, technique of surgical repair, expertise of the surgeon, equipment used, and post-operative nursing. The success rate in our study was 82.9%. Such high success rates after repair have reported by other authors, ranging from 72.9 to 93% (8, 15, 23-25). However, even after successful closure, 15-20% of women may continue to suffer from urinary incontinence related to sphincter deficiency and not to the leakage to the fistula site. Closing the bladder is much more important in achieving a successful repair than vaginal closure. As long as these principles are respected, the surgical approach often concludes successfully. In most cases, the choice is essentially dictated by the procedure with which the surgeon is more comfortable and familiar with.

In our series, 79% of cases were repaired trans-vaginally. We personally favored the vaginal approach when the fistula was near the neck of the bladder. The benefits include a low rate of complications, minimal bleeding, rapid postoperative recovery and short hospital stay (26). We reserved the trans-vesical approach for when the fistula could not be correctly visualized (upper fistula location) and for when an intra-abdominal disease state required simultaneous care.

In conclusion, obstructed labor remains the most important cause of OF in Haut-Katanga. It is important to prevent OF arising from obstructive causes. The surgical treatment of OF depends upon the type, size and location of fistula. Prevention is based on proper monitoring of pregnancies and delivery within a medical facility. This information could potentially be used to educate rural populations, guide public policies, and improve morbidity and mortality related to OF in the DRC.

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