

## Quality care for rectovaginal Obstetric Fistula. The Northern Cameroon experience: case series and a review of the literature

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### ABSTRACT

**Objective:** To describe the circumstances of occurrence, identify potential risk factors and the surgical outcome of rectovaginal obstetric fistula in Northern Cameroon.

**Methods:** This case series study included 6 rectovaginal obstetric fistula patients seeking services at the Regional Hospital of Maroua, Cameroon between May 2005 and August 2007. Structured interviews of patients were conducted prior to surgical intervention and the surgical outcome was recorded. We conducted a literature search to identify relevant studies on recto-vaginal fistulas.

**Results:** Patients were found to suffer an average of 12 years with fistula, with four of them living with fistula for more than 10 years at the time of surgery. Four patients were teenagers (less than 19 years old) in their first delivery. Patients had a parity ranging from 1-9 with the mean of 5. Regarding the pregnancy and delivery preceding the occurrence of the fistula, all the 6 women reported to have received antenatal care and 5 of them gave birth in the health facility. Four patients delivered within the 24 hours of onset of labour. All the 3 patients with combined fistulas delivered a stillborn baby. Six months after transperineal repair surgery, closure and continence were observed in all 6 cases. In the literature the overall closure of recto-vaginal fistula was found to range between 79-100% with the overall closure with continence between 56-100%

**Conclusion:** Obstetric recto-vaginal fistula patients in Far North Cameroon had a high parity, delivered in a facility usually within 24 hours of labour, lost their foetus if they had a combination of fistulas, had been suffering of fistula for an average of 12 years. The technique by transperineal repair used in our practice provides complete closure and continence.

## Introduction

A rectovaginal obstetric fistula (RVF) is the presence of a hole between a woman's genital tract and the rectum and is characterised by the leakage of flatus and stool through the vagina. This is associated with the presence of a persistent offensive odour leading to social stigma and then patients are ostracized.<sup>1,2</sup>

The other type of obstetric fistula is the so-called vesico vaginal fistula (VVF) characterised by leakage of urine through the vagina. Among the obstetric fistula cases, recto-vaginal fistula represents 1 to 5%; vesico-vaginal, 79 to 98% of cases and combined vesico and recto vaginal fistula, 4 to 16% of cases.<sup>3-7</sup>

Three causes of RVF are highlighted by the authors which occur as a complication of delivery or uterine evacuation in the absence of a skilled birth attendant. The most common cause is ischemia of the soft tissue between vagina and rectum by compression of the foetal head; the second cause is the direct tear of the same soft tissue during precipitate (quick) delivery of the foetal head or obstetric manoeuvres; the last and scarce category of causes is the unsafe abortion. These causes are not exclusive and can present as additive causal effects.

Little is known about the circumstances of occurrence, risk factors and the outcome of treated rectovaginal fistulas and this is needed to raise awareness, and mobilize communities, health care providers, program managers and policy makers on the appropriate preventive and treatment measures. Several types of population-based estimates of obstetric fistula have been presented. The most frequently cited estimate is the incidence rate of 1 to 2 per 1000 deliveries, presented by Waaldijk in 1993.<sup>8</sup> Using this incidence rate it was estimated that between 50 000 to 100 000 new cases of obstetric fistula occurred each year worldwide leading to 2 millions of prevalent cases. If rectovaginal fistula represents 5 to 21 % of obstetric fistula, with the mean at 10% as suggested above, it appears that the incidence of recto-vaginal fistula is 0.5

to 2.1 per 10000 deliveries and that 4000 to 16000 new cases of obstetric rectovaginal fistula occur each year in the world. Another recent study highlights a lack of scientific evidence in estimates of incidence and prevalence of obstetric fistula and encourages the use of the third type of estimate. Namely the prevalence rate per 100 000 women aged 15 to 49 years listed in some studies with a description of method used for estimation.<sup>9</sup> This study reports an estimate for the prevalence of obstetric fistula of about 188 per 100 000 women aged 15 to 49 year in sub-Saharan Africa emphasizes on the need for population-based studies. Consequently, the estimate of the prevalence of recto-vaginal fistula should be about 10 to 40 per 100 000 women aged 15 to 49 year in sub-Saharan Africa.

The objective of this study was to describe the epidemiology of obstetric fistula, circumstances of occurrence, identify potential risk factors, and treatment outcome of rectovaginal fistulas in our setting and in the available literature.

## Methods

### *Case series procedure*

This case series study took place at Maroua Provincial Hospital, Cameroon, the second level referral hospital for the Far North Region, located at 1,500 kilometers from the capital city, Yaoundé. Maroua Regional Hospital is a public health facility that provides comprehensive health care services, including surgery. Women who consulted at the Maroua Regional Hospital between May 2005 and August 2007 for leakage of stool through the vagina, and for whom the diagnosis of obstetric recto vaginal fistula was confirmed, were included. The site and size, anatomic localization, and the possible combination of fistulas were confirmed by speculum examination.

During the study period, 9 patients with recto-vaginal fistula were identified. Three cases were due to non-obstetric causes; among them, one was attributed to genital cancer, one to infection in an HIV carrier patient, and one to sexual violence. These were excluded and consequently, 6 women with obstetric

rectovaginal fistula were included in the study.

Data were collected through a structured questionnaire including information on socio-demographics (residence, age, educational level, marital status, and occupation), reproductive history, cause of obstetric fistula and the treatment procedures. The pregnancy and delivery that preceded or led to obstetric fistula were defined as the index pregnancy and delivery.

#### *Surgical procedure*

Transperineal repair was the procedure used for our cases. All patients received two enemas prior to the operation with one in the evening and the second on the morning of operation. Intravenous antibiotics (ampicillin 2 grams and Gentamicin 80 mg) was given, after induction of anesthesia. The patient was placed in the lithotomy position and the operation began with routine betadine preparation of the perineum and the vagina. The fistula was demonstrated digitally and then . infiltration was done with adrenalinated saline solution (500 cc saline + 1 ml adrenalin 1/500000). A circumferential anal right angled incision was then made between the vagina and the anus. The sphincter complex (the internal and external anal sphincter) was dissected en bloc to expose the free ends on either side of the sphincter in order to allow an overlapping sphincteroplasty later. The anovaginal septum was then dissected up to approximately 2 cm cranial to the fistula. A levatoroplasty was carried out which involved the opposition of the puborectalis muscles. This was then followed by the closure of the vaginal and anal defects. Overlapping sphincteroplasty was then carried out with 1 vicryl, usually requiring three to four sutures. Occasionally, the incision was extended to make an X and the lateral subcutaneous flap then transposed in order to achieve easier closure and cosmesis. Finally, the skin was closed with subcuticular interrupted 3/0 Monocryl Ethicon. Diet was recommenced the day after the operation and advice was given regarding no strenuous physical activity or sexual intercourse for at least 12 weeks.

#### *Data processing procedure*

Data was entered by an assistant nurse with good computer skills in an Excel database at the Department of Obstetrics and Gynecology of the Maroua Regional hospital. Data analysis was performed using EPI Info 3.4. Descriptive analysis included the calculation of mean, median, range and proportions.

#### *Review procedure*

We conducted a search of the literature to identify all relevant articles published in the period 1987-2008 in the following bibliographic databases: Medline (Pubmed, Ovid), Cochrane Trials Register, and Cumulative Index to Nursing and Allied Health. We conducted a variety of searches using a combination of the following medical terms and MeSH headings: obstetric fistula, urinary fistula, vesicovaginal fistula, vesico vaginal fistula, vesico-vaginal fistula, recto-vaginal fistula, rectovaginal fistula, recto vaginal fistula. In addition, potentially relevant publications were identified from the reference lists of identified and/or reviewed articles. No attempt was made to identify unpublished studies.

## **Results**

Out of the 6 obstetric RVF patients identified during the study period, 3 were diagnosed with pure recto-vaginal and 3 with combined fistulas. All 6 recto-vaginal fistulas involved the sphincter and none was purely suprasphincteric. All the patients lived in the Far North Region. The median age of patients at the time of intervention was 36.5 years and ranged from 22 to 45 years. Three patients had received no formal education, and 5 patients were housewives. Regarding marital status, 5 patients were still married at the time of surgery, and 1 was divorced. In terms of obstetric history, the parity ranged from 1 to 9 with the mean parity of 5. Four patients were teenagers (i.e. 10 to 19 years old) at their first delivery. Time between the occurrence of obstetric fistula and intervention ranged from 1 month to 33 years with a mean duration of 12.4 years. Four patients had been suffering from obstetric fistula for ten years and more prior to the present surgery.

Following the occurrence of the RVF and despite the presence of it, 3 women had a subsequent delivery. Five patients reported having received antenatal care (ANC) during the index pregnancy. Among the 5 women with available information on the duration of labour, four patients gave birth within the 24 hours of onset of labour, and 1 woman gave birth after 72 hours. Of the 4 patients with available information about the duration of labour and who directly arrived in the facility without trying to be delivered at home, 3 gave birth after more than 12 hours and one gave birth after 3 days. While 5 of the 6 women were delivered at health facilities (i.e. health centers and hospitals), 1 had delivery at home. All the 5 women declared to have given birth at a health facility without trying to give birth at home. Five women delivered vaginally and one by caesarean section. Among the three patients who presented with combined fistulas, one underwent craniotomy and the other one was delivered by caesarean section but after failure to deliver at home. All the 3 women with pure recto vaginal fistula had live births compared to the stillbirth for the 3 women with combined fistulas. Among the 6 patients, 3 patients were at their first operation, 1 had one prior operation, and 2 others had two prior operations for their RVF.

Six months after the operation in our unit, the complete closure with good continence of recto vaginal fistula was concluded for all the 6 patients.

## Discussion

### *Associated factors*

In our study, 3 out of the 6 rectovaginal obstetric fistula patients had no formal education. The illiteracy rate was quite similar to what is reported by DHS in 2004 for women in the Far North Region (68%).<sup>10</sup> though the illiteracy rate among obstetric fistula patients has been recently reported in the Far North region even higher (78%) than what is found in RVF only.<sup>11</sup> The illiteracy rate among obstetric fistula patients has been reported in several studies as ranging from 78 to 96 %, but those studies included almost all vesico vaginal fistula.<sup>12,13</sup>

We found that 4 patients were teenagers at the time of first delivery; these findings somewhat similar to the recent findings concerning the overall obstetric fistulas in the Far North Cameroon, where we found that the vast majority (86%) of obstetric fistula patients were teenagers at their first delivery.<sup>11</sup> Very few studies examining the characteristics of obstetric fistula patients reported the teenage status at first delivery, and in only two studies a mean age of 17 at first delivery was reported.<sup>14</sup>

In Far North Region of Cameroon, the use of any contraceptive method among couples is 3.3%; this observation implies that just after the marriage those teenagers could become pregnant.<sup>15</sup> The teenage delivery rate among obstetric fistula patients aged 15-49 years is much higher compared with the country female population of the same age (82% vs. 21%).<sup>10</sup> These observations suggest that being a teenager at the time of marriage or delivery might be a risk factor for obstetric fistula in Far North Cameroon.

Regarding the parity of the patient, only one patient was primiparous while the mean parity of the patients was at five. A high number of primiparous women has been reported in many studies with rates ranging between 42% and 67%.<sup>7</sup> A primiparous rate of 67% among 51 rectovaginal fistula patients was reported in Australia.<sup>16</sup>

Five of the 6 patients declared to have received antenatal care. About half of obstetric fistula patients did not attend any ANC visits during the index pregnancy among the overall cases in the Far North Cameroon.<sup>11</sup> The ANC attendance among our patients is quite high compared to the Demographic Health Survey data that showed only 59% of women reporting at least one ANC visit in Maroua Region. The majority of studies reported even higher percentages (72% to 92%) of women who did not attend an ANC visit during the index pregnancy but those studies included only very few cases of rectovaginal fistulas.<sup>17,18</sup>

We found that 4 out of five patients with available information on the duration of labor delivered within the 24 hours of onset of labour. In Saudi Arabia, only 20% of the 35 obstetric fistula patients experienced labour for more than 24 hours.<sup>19</sup> Several studies have reported that 70% to 96% of patients had been in labour for more than 24 hours and again those studies included mostly vesico vaginal fistulas.<sup>20</sup> Poor quality emergency obstetric care (EmOC) at the right moment is an important risk factor for the occurrence of fistula.

We also found that 5 of the 6 rectovaginal obstetric fistula patients delivered at a health facility, compared with 26% overall health facility delivery at the regional level.<sup>21</sup> None of the patients delivered in the health facility after failure of delivery at home. The fact of arriving in the health facility without trying to deliver at home does not ensure that the woman will deliver in safe condition in Far North Cameroon. This observation was expected, as the monitoring of labor with a partograph was introduced only in 2003, in Far North Cameroon and is still implemented only in 1 out of 28 health districts in the Province.<sup>22</sup> Health facility delivery is effective in preventing severe complications if the pregnant woman arrives in early labour, and if labour is monitored by a competent staff using the partograph, which helps to detect and manage complications in a timely way.<sup>23</sup>

Only 1 of the 6 fistula patients were delivered by caesarean section (CS). The CS rate in the regional population of Far North (0.4%) is indeed too low from the lower threshold of 5% accepted by UN organizations.<sup>24,25</sup> The extremely low population-based CS rate of 0.4% in Far North Province of Cameroon reflects the potential high risk of severe obstetric complications, including obstetric fistula that could have been prevented by timely CS delivery.

### **Repair outcome**

Among the 6 patients with RVF, both closure and continence were observed in 6 cases. Our result fit within the WHO target of 85%.<sup>26</sup> WHO also recommends that 90% of the closed fistula should also

be continent, and this implies the complete cure of the patient.<sup>26</sup> In the literature the overall closure of rectovaginal fistula ranges between 79-100% with the overall closure with continence between 56-100%.<sup>5, 16, 18, 19, 27</sup> Closure does not necessary mean that the patient is cured and in Australia 45.5% of the treated patients had closure of their fistula, but still with a residual incontinence.<sup>16</sup>

### **Operative procedure**

There are four main techniques described in the published reports for the treatment of RVF. These are the trans-anal advancement flap, perineo-proctotomy (converting the perineum to the state of four degree tear and layered closure) and trans-vaginal and trans-perineal approaches. Transperineal repair was the procedure used for our case series as described above. The transanal advancement flap is another technique used. Mac Rae et al. reported a success rate of 44 % among nine patients using this technique.<sup>28</sup> Another five patients had sphincteroplasty and the success rate was 100%. Although the number was small, it showed a trend that sphincter repair might have a higher chance of healing obstetric RVF. The Tsang et al. study on women with RVF found that the endoanal advancement flap was successful in 50% of patients with normal sphincter function, but only 33% in patients with abnormal sphincter function.<sup>29</sup> This emphasizes that a perineal approach with repair of the sphincter is almost always required in true anovaginal fistulae. This differs from fistulae which lie above the anal sphincters and may therefore be amenable to advancement flap techniques. The transperineal approach with sphincter repair produced the best results. In this operation, the dissection is carried out up to the level of the levator ani muscle, separating the rectum from the vagina. This is followed by plication of the levator muscles, overlapping anal sphincter repair and excision of anal and vaginal mucosal flaps containing the fistula.

The trans-vaginal approach can be defined as the other side of trans-anal approach. The so-called transvaginal repair involves the advancement of the vaginal flap. A study that used perineoproctotomy was reported to show very good results although the proportion of

patients who actually had obstetric related fistulae was not known.<sup>30</sup>.

## Conclusions

Obstetric RVF patients in Far North Cameroon had a high parity, delivered in a health facility most often within 24 hours of onset of labour, lost their foetus in case of combined fistulas, had been suffering of fistula for the average of 12 years, and were more likely to have had a prior unsuccessful operation. The transperineal repair with sphincteroplasty described in the current study is straightforward and effective in healing obstetric related RVF with improved continence and is unlikely to require a repeat procedure.

Our findings highlight the urgent need for training of surgeons and gynaecologists for proper treatment of RVF in Far North Cameroon. We also strongly recommend that the maternal health program in Cameroon be revised, re-organized and strengthened in order to improve the quality of and the access to maternal health care services.

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