

Profile and Outcome of Obstetric Fistula Surgeries in a Fistula Care Centre in South-East Nigeria

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Abstract

Background: Prolonged obstructed labour is the main cause of obstetric vesico-vaginal fistula, however there is growing perception that a proportion of cases may be arising from surgical complications and errors. This study intends to evaluate this observation. **Subjects and Methods:** A retrospective study of 378 eligible cases of obstetric VVF repaired over a five-year period. Requisite information was retrieved from hospital case records. Data entry and analysis was done using SPSS version 20. Means and SD, Chi square test and the level of significance set at $p < 0.05$ were calculated. **Results:** The mean age was 33.9 ± 10.1 years, mostly multipara, majority following caesarean sections in 62.3% followed by prolonged obstructed labour in 28.6% of patients. The most common type of VVF was Intra-cervical fistula in 55.8% of patients. At the time of hospital discharge following repair, 76.5% were closed and dry, 18.5% had post-repair incontinence and 5.0% had a failed repair within the studied period. Half of our patients (50.3%) were referred from private hospitals, 40.3% had no referral letter and the remaining were referred from government hospitals. The outcomes of surgeries were not influenced by the type of VVF repaired. Chi square test was 0.38 at 95% CI ($p > 0.05$). **Conclusion:** There is a worrisome proportion of obstetric VVF from caesarean sections. Our success rates in obstetric VVF repair appears satisfactory; more effort be made in strengthening the referral system and impacting correct surgical skills especially in areas of caesarean section.

Keywords: Obstetric Vesico-vaginal fistula, Caesarean section, South-eastern Nigeria

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Introduction

Obstetric fistula is an abnormal communication between genital tract and bladder/rectum causing uncontrollable, constant leakage of urine and/or faeces.^[1,2] Obstetric fistula is usually caused by several days of obstructed labour without timely medical intervention.^[1] Iatrogenic fistula is caused by surgical error, most often during caesarean section resulting in various forms of obstetric genital fistula such as vesico-uterine fistula, utero-vesical fistula, uretero-vaginal fistula, intracervical fistula and possibly juxta-cervical fistula.^[1,2] Others could include vault fistula following post-partum hysterectomy and juxta-urethral (bladder neck) following operative vaginal deliveries such as ventouse procedure. Traumatic fistula is caused by injury for instance through sexual violence Female Genital Mutilation, Road Traffic or Domestic accidents.^[1,2]

Evidence is emerging that maternal morbidity is related to quality of care challenges.^[1] Obstetric VVF from surgical mishap appear to contribute significantly to the burden of genital fistula in low-income countries.^[1] A review of 5,959 fistula cases from 11 sub-Saharan African and South Asian countries classified 13% as caused by errors during medical procedures¹, eighty percent of these iatrogenic fistula cases occurred after procedures to address obstetric complications frequently caesarean section, hysterectomy and repair of ruptured uterus. These surgical procedures were, unfortunately, performed by all cadres of health staff.^[1,2] Reviews of fistula case records to identify the causes of

fistula, showed that 27% of cases in Bangladesh, 8% of cases in Democratic Republic of Congo (DRC) and 10% of cases in Niger were due to a surgical mishap following an operative surgical procedure.^[1]

Procedures associated with surgical errors also varied among countries; notably, in Bangladesh, 75% of obstetric fistula from surgical mishap resulted from hysterectomy whereas caesarean section was a more frequent cause in the DRC and Niger.^[1]

Globally there is a variation in the pattern of obstetric VVF seen and managed in various centres and even within the same country there is a debate among fistula care providers that this their various experiences.^[3,4] For example in Nigeria the type of obstetric VVF seen and managed in southern part of the country appears to vary compared to those seen and managed in the northern part of the country.^[2,3] Therefore, it also appears that the surgical outcomes may appear different depending on the anatomical location and the aetiology of the obstetric fistula. This work is intended to determine if these perceptions are indeed right.

Women who experience prolonged obstructed labour but who eventually had obstetric intervention for example Caesarean section, operative vaginal delivery represents a “gray area” in determining fistula causation.^[1] If a woman is in labour for several days at home, ultimately had a caesarean delivery and then develops a fistula, it is difficult to be certain whether the fistula was caused by ischaemic tissue necrosis from prolonged obstructed labour or from the operative procedure.^[1,4]

In our fistula care Centre, there are certain key indicators that have been adopted in the form of a guidance, to distinguish the two separate scenarios. These include the fetal outcome, time of onset of leakage of urine following eventual delivery; particularly in case of Caesarean Section. Others include: anatomical location/site of the fistula, presence or absence of field or focal injury and involvement or non-involvement of the urethra. These key indicators are not 100% accurate, however, employing them in our clinical practice has enable us to achieve reasonable degree of accuracy distinguishing obstetric fistula arising from Caesarean Section and/or from prolonged obstructed labour particularly when the events are such that labour events is succeeded by Caesarean section on the same patient during an index pregnancy.

We hereby seek to review and share our experiences in the area of surgical management of obstetric vesico-vaginal fistula, for a selected five year period, with the global fistula care community.

The aim of this study is to profile all the VVF cases admitted at the National Obstetric fistula centre, Abakaliki, Ebonyi state, Nigeria, from 2015-2019 and review the cases with the view to determining the aetiology, pattern of presentation of obstetric VVF and their respective management outcome.

Subjects and Methods

The study was a retrospective descriptive study of three hundred and seventy-eight (378) eligible cases of obstetric VVF patients that were repaired over a five year period (Year 2015-2019).

These surgeries were earlier performed by certified VVF surgeons. Patients with recorded urethral loss: partial or

complete were excluded from the study because their prognosis in having a post-repair stress urinary incontinence is already compromised at the point of this study. Those case records that had deficient documentation were also excluded from the study.

The requisite data was obtained from hospital case files/records, operation registers, hospital admission registers, treatment and discharge records of National obstetric fistula Centre, Abakaliki, Ebonyi state. The data was input into a pre-designed and validated proforma, it was eventually analysed using SPSS software version 20 The mean/averages were calculated with the standard deviation. Chi squared test was set to test for association at a 5% level of statistical significance, p-value of $p < 0.05$ was considered statistical significant. Logistic regression analysis was done for the co-variables

The secondary data was entered into a pre-designed proforma

Results

The mean age was 33.9 ± 10.1 years, mostly multipara, majority following caesarean sections in 62.3% followed by prolonged obstructed labour in 28.6% of patients. The most common type of VVF was Intra-cervical fistula in 55.8% of patients. At the time of hospital discharge following repair, 76.5% were closed and dry, 18.5% had post-repair incontinence and 5.0% had a failed repair within the studied period. Half of our patients (50.3%) were referred from private hospitals, 40.3% had no referral letter and the remaining were referred from government hospitals. The outcomes of surgeries were not influenced by the type of VVF repaired. Chi square test was 0.38 at 95% CI ($p > 0.05$).

Table 1: Socio-demographic distribution N=378

Socio-Demographic Variables	No of Respondents	Percentages
Age (years)		
15-19	10	2.6%
20-24	46	12.2%
25-29	75	19.8%
30-34	87	23.0%
35-9	69	18.3%
40-44	43	11.4%
45-49	12	3.2%
50 & above	36	9.5%
Parity		
Primiparity	88	23.3%
Multipara	270	71.4%
Grand multipara	20	5.3%
Marital Status		
Single	22	5.8%
Married	345	91.3%
Divorced/ Separated	11	2.9%
Religion		
Islam	24	6.3%
Christianity	343	90.7%
Others	11	2.9%
Highest Educational Level		
None/ Primary	119	31.5%
Secondary	122	32.3%
Tertiary	137	36.2%
Occupation		
Civil Servant	65	17.2%
Farmer	59	15.6%

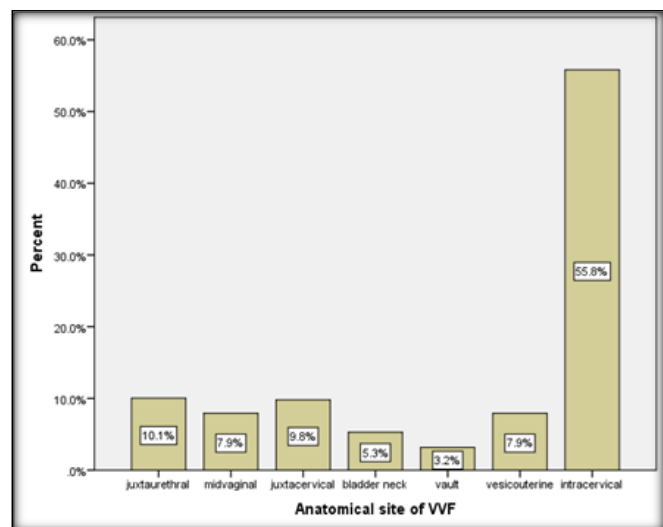
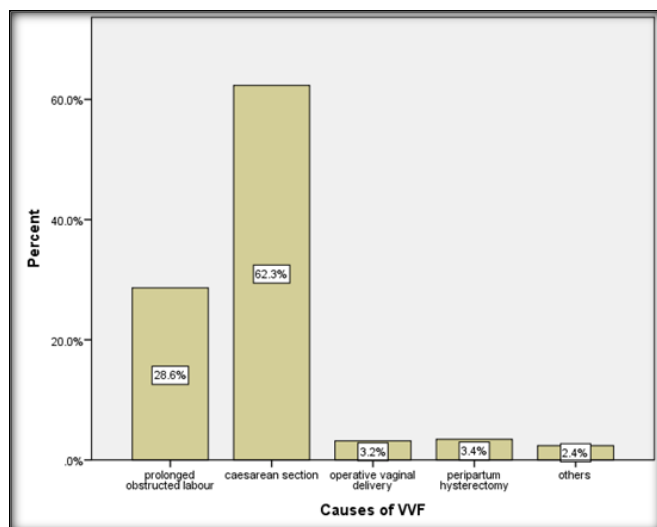
Artisan	92	24.3%
Trader	94	24.9%
Housewife/ None	68	18.0%
Place of delivery		
Teaching Hospital	13	3.4%
General Hospital	22	5.8%
Private hospital	190	50.3%
No referral letter provided	153	40.5%

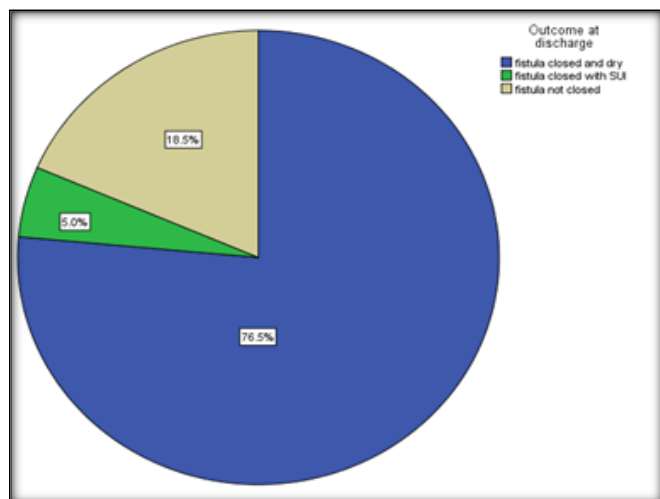
Table 2: Association between anatomical site of VVF and outcome on repair

Anatomical Site of VVF	Outcome at discharge				Fisher's exact test	P-value
	Fistula closed and dry	Fistula not closed	Post-stress incontinence	repair Total		
Juxtaurethral	30 (78.9%)	2 (5.3%)	6 (15.8%)	38(28.6%)	26.537	0.009
Midvaginal	25 (83.3%)	3(10.0%)	2 (6.7%)	30(62.3%)		
Juxtacervical	29 (78.4%)	2 (5.4%)	6 (16.2%)	37 (3.2%)		
Bladder neck	11 (55.0%)	5(25.0%)	4 (20.0%)	20 (3.4%)		
Vault	11 (91.7%)	0 (0.0%)	1 (8.3%)	12 (2.4%)		
Vesicouterine	24 (80.0%)	1 (3.3%)	5 (16.7%)	30 (2.4%)		
Intracervical	159(75.4%)	6 (2.8%)	46(21.8%)	211(2.4%)		

Table 3: Logistic regression of the associated factors on outcome of repair

Associated Factors	Coefficient	P-value	OR	95% C.I. of OR
No of previous repair				
0 (ref.)				
1	0.023	0.954	1.024	0.462-2.266
2	-1.384	0.000	0.250	0.124-0.507
3	-0.247	0.695	0.781	0.227-2.686
Parity				
Primipara (ref.)				
Multipara	0.440	0.148	1.552	0.856-2.815
Grand multipara	-0.250	0.713	0.779	0.206-2.952
Duration of symptoms				
Less than 1year (ref.)				
1-2years	-0.080	0.801	0.923	0.495-1.721
3-4years	-0.248	0.528	0.780	0.361-1.685
5years & above	0.125	0.804	1.133	0.423-3.033
Causes of VVF				
Prolonged obstructed labour (ref.)				
Caesarean section	0.721	0.104	2.056	0.863-4.899
Operative vaginal delivery	-0.367	0.614	0.692	0.166-2.888
Others	-0.285	0.660	0.752	0.211-2.667
Anatomical site of VVF				
Juxtaurethral (ref.)				
Midvaginal	1.102	0.071	3.010	0.912-9.936
Juxtacervical	0.147	0.786	1.158	0.401-3.347
Intracervical	-0.368	0.485	0.692	0.247-1.943





Discussion

The age distribution in this study reveals a homogeneous spread across the various strata of age groups: teenagers, young adult women, middle age group and elderly women. Our finding is inconsistent with earlier reports that obstetric vesico vaginal fistula occurs mainly among teenagers and young adults. It is noteworthy to mention that majority of this women were aged 30-34 years. This also implies that VVF is also prominent among middle-aged women. The age range in this study was 15 years to 68 years with mean standard deviation of 33.9 ± 10.1 years. This finding is similar to a study from Adeoyo maternity/Fistula centre Ibadan where they reported that most of their patients were between 28-80 years⁵. Our finding is also similar to the report from Ile-ife, Osun state where the mean age of their patients was $28.7 \text{ years} \pm 7.5$ the standard deviation 6. In support of our findings regarding age and parity, it was also reported that there has been the emergence of new scenario of the obstetric fistula among women who are older and of high parity, seen in their twenties and thirties, who have previously successfully delivered.^[4]

Majority of the patients were multipara while the least number were grand multipara. This finding is also in tune with the report from Adeoyo/fistula care centre⁵ where it was reported that many of the patients had at least three children. This again shows that VVF is no longer common amongst women giving birth for the first time.

Our study also shows that many of the patients within the studied had tertiary education; this therefore implies that VVF is no longer restricted to women who are illiterate.

This study shows that half of the women studied had their child birth in various private hospitals, while some was in general hospitals while relatively few of them had their childbirth in various teaching hospitals in Nigeria before their subsequent referral to National obstetric fistula centre, Abakaliki. Unfortunately, about one-quarter of them came to us with no accompanied referral letter. The finding appears similar to the study from Adeoyo maternity/fistula centre⁵ where they reported that majority of the women had caesarean section at private hospitals and these were performed by

medical personnel and other cadres of health workers that were not licensed to perform surgery and they presented to them based on self-referral. Our finding in this regard is also similar to report by fistula care organization¹. This shows the need to strengthen the capacity of health care provider's particularly private hospitals on the importance of referral letter and the two-way referral system.

Our study also shows that the commonest cause of obstetric VVF in the study centre is due to surgical errors following Caesarean section followed by prolonged obstructed labour. This finding is paradigm shift from the norm where prolonged obstructed labour was the leading cause. Other causes of obstetric VVF from the study included complications from operative vaginal delivery and complications from peri-partum hysterectomy. These findings differ from the long standing knowledge that prolonged obstructed labour is the commonest cause of obstetric VVF. This has created an irony that a life-saving surgical procedure, in the hands of the unskilled, has become a weapon of injury to women's sexual and reproductive health. This finding is in line with report by fistula care organisation that there is a surge in the number of cases of obstetric VVF following Caesarean delivery and that there is concern that caesarean section may contribute more especially in unreported cases that eventually present in fistula centres.^[4] However our finding is inversely related to the study by Olusegun FA⁶ where he reported that prolonged obstructed labour account for most of their cases of obstetric VVF and a few cases was from caesarean section or hysterectomy. The Olusegun FA et. Al study was a caesarean section for one year period only and therefore might not have captured variation possible a longer period covered by our study.^[6]

Our study also shows that the commonest anatomical site of the fistula we operated within the studied period was mainly Intra-cervical fistula followed by juxta-urethral, juxta-cervical, vesico-uterine, and mid-vaginal in that order. The preponderance of intra-cervical being the commonest type of obstetric VVF in our centre may be due to the large number of the patients whose Obstetric VVF was as result of mishap from caesarean section. This is equally supported by the fact that these caesarean sections would likely happen in advanced stage of labour. The mechanism giving forth to the fistula can be explain based on the knowledge of basic physiological processes of labour, which shows that cervical dilatation and effacement of the uterine cervix occurs in advanced stage of labour.^[7] Therefore, during caesarean section at this stage, unskilled personnel could involve the uterine cervix in the incision and repair particularly when very low uterine incision. This makes the cervix to be partially or wholly adhered to the uterus and the bladder.

The third major finding is the management outcome; this outcome is usually assessed about two weeks post-surgery. The chart reveals that the overall success rate for our patients was above two-third the number of cases, unfortunately a few of them had a failed surgical repair, while some of them had post-repair stress incontinence with the fistula been closed.

[Table 2] shows that there is significant association between the anatomical site of VVF and outcome on repair. This

implies that VVF located at the bladder neck had the outcome of either fistula closed with stress urinary incontinence (SUI) or fistula not closed. The possible explanation in this regard may be because the continence mechanism at the level of the urethra is affected before the repair was performed. In addition to this, the urethra has limited amount of muscular tissues to mobilise, this can compromise the function and anatomy of the urethra and hence the undesired outcome. Also, most of the patients whose anatomical site of their VVF is intracervical had the outcome of fistula not closed. This may be due to the technical difficulties in operating intracervical fistulas usually experienced by even the most skillful fistula surgeons. This entail dissecting the uterine cervix to gain access to the fistula, this on its own is fraught with a lot of challenges and undesired surgical outcomes. The logistic regression analysis, shows that there is a significant relationship between number of previous repairs and outcome on repair. This implies that those that had two previous repairs were 4 times less likely to have successful repair than those that had no previous repair. Other associated factors had no significant relationship with outcome on repair. This buttresses the fact that, cases of fistula should be managed within the capacity of the fistula surgeon⁸, because the more the number of surgical repairs the higher the chance of failed repair. This therefore supports the dictum that says ‘first attempt at VVF repair is usually the best for the patient in achieving continence.’^[8]

Conclusion

There appears to be a ‘paradigm shift’ in the profile of obstetric fistula cases in terms of their socio-demographic characteristics and bio-clinical presentation.

This is worrisome and an irony for obstetric VVF patients seen to arise from a life-saving obstetric procedure. We advocate that more effort be made in training and re-training of medical doctors in area of emergency obstetric care.

Pre-surgical counseling on outcome should be part and parcel of treatment and care of obstetric VVF patients particularly for patients with fistula at the site of the bladder neck in view of post-repair stress urinary incontinence.

If VVF from Caesarean sections continue to occur at current rate, a substantial case load of fistula cases will remain for years to come, even if fistula from prolonged obstructed labour is eliminated^{1, 8}. It is essential that adequate safety standards be established and maintained to prevent obstetric fistula and its adverse outcome.

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