Original Article

Co morbidities associated with vesico vaginal fistula in patients managed in Maryam Abacha Fistula Hospital Sokoto, Northwestern Nigeria

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ABSTRACT

Background: Prolong obstructed labor is a preventable obstetric complication in the developing countries with devastating consequences and comorbidities. This study aimed to determine the frequencies of the common comorbidities in patients managed for obstetrics fistula at Maryam Abacha Women and Children Hospital, Sokoto, and also to identify the association of age and parity on the occurrence of some of the comorbidities observed.

Materials and Methods: This was a cross-sectional study involving 179 patients with obstetric vesicovaginal fistula seen at Maryam Abacha women and Children VVF center, Sokoto, from January to December 2017. A proforma was used to assess the sociodemograhic features and also to record comorbidities during preoperative evaluation.

Results: Foot drop was the commonest comorbidity seen in 106 (59.2%), followed by depression in 104 (58.1%). There was statistically significant association between age, parity, and foot drop P = 0.025. Depression was found to be higher in the primipara P = <0.001.Urinary dermatitis occurred more frequently in the older age group and multipara 62.7% and 80%, respectively. Amenorrhea was commoner among age group 30 years and above 62.7%. Out of 179 patients analyzed, 36 (20.1%) had eclampsia whereas gynaetresia was present in 29 (16.2%).

Conclusion: Significant comorbid conditions accompany obstetrics trauma and vesicovaginal fistula. Foot drop had statistically significant association with age. Depression was common in all age groups. There was significant association between depression and parity. Urinary dermatitis occurred more frequently in the older age group and multiparae.

Key words: Comorbidities; obstetrics trauma; vesicovaginal fistula.

Introduction

Obstetric fistula has been eliminated from advanced industrialized nations a long time ago; however, it remains a major public health problem in the world's poorest countries. It is the most important and socially disastrous result of neglected obstructed labor.[1] In 2006, the WHO estimated that more than 2 million young women throughout the world live with untreated fistula and between 50,000 and 100,000 new women are affected each year.[2]

In Nigeria, it is estimated that between 800,000 women are living with obstetric fistula with about 20,000 cases annually.[3]

Obstetric trauma to the bladder from prolonged and neglected obstructed labor is the main cause in the tropics

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and other developing countries, accounting for 80--95% of cases in Northern Nigeria.[4]

Obstructed labor is seen when the progressive descent of the presenting part is arrested because of mechanical obstruction despite good uterine contractions.[5-7]

In prolonged obstructed labor, the fetal head becomes stuck, deep into the maternal pelvis causing ischemic injury to the surrounding structures. When the baby's head is stuck in the pelvis, the most common site for ischemic injury is the urethrovesical junction, but injury can also occur at other sites, either in isolation or together as one massive defect. In the most severe cases, ischemia will affect the whole of the anterior wall of the vagina, the bladder base, much of the urethra, and sometimes the rectum as well, leading to a rectovaginal fistula. In the extreme cases, the bladder is completely destroyed. Obstructed labor injury complex' is a term for a broad range of injuries that the patient suffering from an obstetric fistula may encounter as explained by Arrowsmith *et al*.[8] These can be divided into primary conditions directly because of the ischemia from the obstructed labor and conditions that are secondary to this ischemic damage.[8]

Many suffer from varying degrees of vaginal stenosis, loss of the anterior cervix and canal, and occasionally severe cervical stenosis leading to hematometra. Compression damage to the lumbosacral plexus can lead to nerve damage. The most common manifestation is foot drop from involvement of the L5 root or in extreme cases paraplegia. There may also be saddle anesthesia with the loss of anal reflex and the risk of pressure sores. Muscle and fascial damage had also been reported which may lead to pelvic organ prolapse.[9] The social consequences of obstetric fistula can be just as devastating to the patient as the symptoms of incontinence with many of the patients abandoned by the husband and family leaving them in a state of depression.

It is important to understand the full impact of the damage to the physical and mental well-being of the patient not just closure of the fistula so that supportive and additional treatment for these comorbidities can be included in the holistic package of care given to these patients. This study aimed to determine the frequencies of the common comorbidities in patients managed for obstetrics fistula at Maryam Abacha Women and Children Hospital, Sokoto, and also to identify the association of age and parity on the occurrence of some of the comorbidities observed.

Materials and Methods

Study area

This was a prospective cross-sectional study among patients presenting with obstetric fistula at the Maryam Abacha Women and Children Hospital Sokoto, Nigeria, from 1st January to 31st December 2017. The hospital is owned by the Sokoto State Government and it largely offers treatment to fistula patients from Sokoto, Kebbi, Zamfara, and neighboring countries like Niger. The hospital also provides maternity services to these fistula patients and the community as well. Large number of patients do present for surgical pooled efforts evaluation which frequently takes place in the hospital, these are supported by Fistula Care Plus, Engender Health, UNFPA, and USAID. The surgical pooled efforts are usually performed by many fistula surgeons (the authors inclusive) who come from different parts of the country to operate patients that are pooled together from all over the country following announcement for such mass repair. Permission to conduct the research was obtained from the hospital ethical committee. All patients who presented to the hospital with a history of leakage of urine from January to December 2017 were considered eligible for recruitment into the study. The sample size was estimated at 131 using the formula for determining sample size in descriptive studies[10] (Araoye, 2004), a 23.3% prevalence of comorbidity (foot drop) in a previous study (Kabir *et al*., 2004), a precision level of 5%, correction for a finite population of an average 178 seen per year at the hospital, and an anticipated 80% response rate. However, a total of 179 patients were enrolled into the study at the end of the year. The data was obtained during the weekly preoperative evaluation of the patients when they are gathered together for preparation prior to surgery. The demographic details and examination findings of the patients including the presence or absence of comorbidities noted at presentation were prospectively recorded in a proforma by the researchers and the research assistants. The Beck's inventory was used to assess for presence of depression. It contains 20 items with responses ranked and scored from 0--3; this gives a minimum total score of 0 and maximum score of 63. Severity of depression was graded as minimal (0--13), mild (14--19), moderate (20--28), and severe (29--63).[11] The data was analyzed using IBM SPSS 22. Frequency distribution tables were constructed, cross tabulations were done to examine the relationship between categorical variables. The Chi-square test was used to compare differences between proportions. Statistical analysis was set at 5% level of significance, $P \leq 0.05$ (95% confidence interval).

Ethical approval

Permission to conduct the research was obtained from the Hospital Ethical Committee and informed consent was obtained from each patient before enrollment into the study.

Results

There were 186 patients managed during the study period, however, only 179 records had complete information and were analyzed. The ages of the patients ranged between 14--50 years. The mean age was 25.9 years ± 8.5. Majority of the study subjects were less than 25 years of age. Most of the subjects 155 (86.6%) were Hausa, 18 (10%) were Fulani, whereas other tribes constituted 6 (3.2%). More than half of them were housewives 100 (55.9%), petty trading was noted in 42 (22.3%). All the subjects were Muslims 179 (100%), nearly all were still married 155 (86.6%), whereas 20 (11.2) were divorced. Almost all had no formal education 166 (92.7%) [Table 1].

The study showed that more than half of the patients (55.30%) were married before the age of 18 years [Figure 1].

Majority of the patients presented with more than one comorbidity. Foot drop was the commonest comorbidity seen in 106 (59.2%) of the patients, closely followed by depression 104 (58.1%). Urinary dermatitis and amenorrhea were the next common comorbidities noted. Out of 179 patients analyzed, 36 (20.1%) had eclampsia whereas gynaetresia was present in 29 (16.2%) [Table 2].

The study showed that foot drop had statistically significant association with age ($P = 0.025$). The younger the subjects, the more their chances of having foot drop as comorbidity [Table 3].

Depression was found to be common in all age groups but there was no significant association with a particular age group. There was significant association between depression and parity, the condition is least common in grand multiparae ($P = 0.001$) [Table 4].

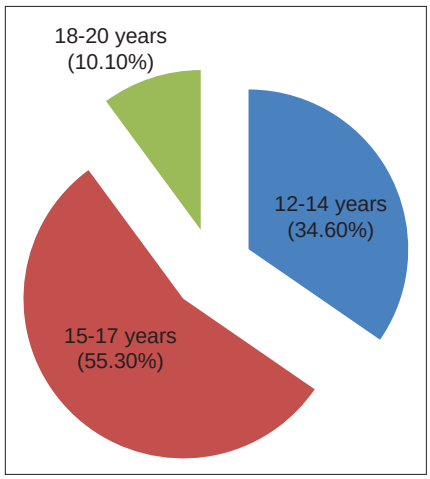

Figure 1: Age at first marriage

Urinary dermatitis occurred more frequently in the older age group and multiparae but the differences were not statistically significant [Table 5].

Amenorrhea was significantly associated with age, it was commonest in the age group 30 years and above [Table 6].

Table 1: Sociodemographic characteristics of the respondents

Characteristics	*n*	%
Age		
14-19 years	50	27.9
20-24 years	43	24.0
25-29 years	27	15.1
30 years and above	59	33.0
Ethnicity		
Hausa	155	86.6
Fulani	18	10.1
Others	6	3.4
Occupation		
House wife	100	55.9
Petty trader	40	22.3
None	14	7.8
Others	25	14
Religion		
Islam	179	100
Marital status		
Married	155	86.6
Widow	4	2.2
Divorcee	20	11.2
Educational status		
No formal education	166	92.7
Primary	8	4.5
Secondary	5	2.8

Table 2: Distribution of co-morbidities

Co-morbidity	Number	Percentage
Foot drop	106	59.2
Urine dermatitis	49	27.4
Amenorrhea	46	25.7
Pressure sore	3	1.7
Eclampsia	36	20.1
Depression	104	58.1
Gynaetresia	29	16.2

Table 3: Association of foot drop with age and parity

Factors	Foot drop		No foot drop		χ^2/ Fisher	*P*
	n	%	*n*	%		
Age						
14-19 years	37	74.0	13	26.0	9.32	0.025
20-24 years	27	62.8	16	37.2		
25-29 years	15	55.6	12	44.4		
30 years & above	27	45.8	32	54.2		
Parity						
Primipara	50	69.4	22	30.6	5.4	0.067
Multipara	22	55.0	18	45.0		
Grand multipara	34	50.7	33	49.3		

Table 4: Association of depression with age and parity

Factors	Depression		No depression		χ^2/ Fisher	*P*
	n	%	*n*	%		
Age						
14-19 years	31	62.0	19	30.8	0.845	0.839
20-24 years	26	60.5	17	39.5		
25-29 years	15	55.6	12	44.4		
30 years & above	32	54.2	27	45.8		
Parity						
Primipara	45	62.5	27	37.5	39.78	<0.001
Multipara	25	62.5	15	37.5		
Grand multipara	34	50.7	33	49.3		

Table 5: Association of urine dermatitis with age and parity

Factors	Dermatitis		No dermatitis		χ^2/ Fisher	*P*
	n	%	*n*	%		
Age						
14-19 years	9	18.0	41	82.0	6.5	0.089
20-24 years	9	20.9	34	79.1		
25-29 years	9	33.3	18	66.7		
30 years & above	22	37.3	37	62.7		
Parity						
Primipara	19	26.4	53	73.6	2,1	0.344
Multipara	8	20.0	32	80.0		
Grand multipara	22	32.8	45	67.2		

Table 6: Association of amenorrhea with age and parity

Factors	Amenorrhea		No amenorrhea		χ^2/ Fisher	*P*
	n	%	*n*	%		
Age						
14-19 years	6	12.0	44	88.0	12.5	0.006
20-24 years	11	25.6	32	74.4		
25-29 years	5	18.5	22	81.5		
30 years & above	24	40.7	35	59.3		
Parity						
Primipara	15	20.8	57	79.2	4.1	0.123
Multipara	8	20.0	32	80.0		
Grand multipara	23	34.3	44	65.7		

Discussion

There were 186 patients managed during the study period, however, only 179 records had complete information and were analyzed. The ages of the patients ranged between 14--50 years. The mean age was 25.9 years ± 8.5. Majority 93 (52%) of the study subjects were less than 25 years. This finding is similar to studies done in Jos and Maiduguri where they noted that the minimal age at presentation was 15 and 16 years, respectively.[1,12] The lowest age at presentation of 10 years was found in similar study done in Kano, which is lower than that found in our study.[13] Sub-Saharan Africa has the highest level of adolescent childbearing, with more than 50% of women giving birth before the age of 20 years. Factors such as poverty, lack of education, and cultural practices that encourage child marriages lead to childbearing before the pelvis is mature.[14,15] In our study, we noted that more than half (55.3%) of the subjects got married before the age of 18 years. These findings concur with that found by Wali *et al*.[1,13,15] However, it varies with the study in Ethiopia that found the age at marriage and at first pregnancy to be generally older than that in previous reports.[16]

Many women deliver at home because the health facility is far away, cultural beliefs, or because the facilities do not offer friendly services.[15] There is always tissues trauma during pregnancy and labor. Normally, these trauma resolves during the involution period of the puerperium although small defects may remain, and repeat pregnancies and deliveries will repeatedly add to these small defects and may result in real pathologic defects. However, when labor becomes obstructed and this is not relieved in time by active intervention pressure, necrosis will develop resulting in an endless variety of anatomic tissue loss with devastating consequence and associated comorbidities for the woman affected.[17,18] Majority of the patients in this study presented with more than one comorbidity; however, foot drop was the commonest comorbidity seen in 59.2% of the patients which is in agreement to results found in other studies.[1,13,19,20] The study revealed a statistically significant association between foot drop and age. The younger the subjects, the more the chances of having foot drop as comorbidity. This could probably be explained by the fact that in the very young it is expected that the pelvis has not yet reached its full reproductive capacity, thereby sustaining more severe obstetric trauma during childbirth involving the sciatic nerve or its lumbosacral branches.

Depression, urinary dermatitis, and amenorrhea were the next common comorbidities noted.

Depression was common in both the young and older patients. Depression was also observed to be common irrespective of the parity; however, it was commoner among primiparous and multiparous women compared with grand multiparae. This difference was statistically significant ($P = 0.001$). This observation may have been confounded by age and experience of the grand multiparae in handling stress. This is similar to 62% found in Tanzania.[21,22] A higher percentage was recorded in similar study done in Niger by Alio *et al*.[23] Similar findings were also noted by Arrowsmith *et al*.[8]

Vulval ammoniacal dermatitis was seen in 27.4% of the patients, which occurred as a result of continuous contact of the vulva skin with urine which may be worsened by prolonged use of rags/pads by many of the patients. This finding is however higher than 32% that was obtained

in Kano.[13] Gharoro *et al*. also recorded a lower value.[24] Amenorrhea occurred in 25.7% of the patients and was more frequent in women who were 30 years and above. This observation was statistically significant. This association was found to be significant statistically. In this study, 56.1% presented with amenorrhea which is higher than similar studies in Ilorin, Sudan, and Lagos.[8,24,25]

Conclusion

Significant comorbid conditions accompany obstetrics trauma and vesicovaginal fistula. The study showed that foot drop had statistically significant association with age and younger the patients, the more their chances of having foot drop. Depression was found to be common in all age groups but there was no significant association with a particular age group. There was significant association between depression and parity, the condition is commoner in primiparae and multiparae compared with grand mutiparae. Urinary dermatitis occurred more frequently in the older age group and multiparae but the differences were not statistically significant.

Amenorrhea was significantly associated with age, it was commonest in the age group 30 years and above.

Fistula surgeons should not just close the fistula but apply a multidisciplinary specialist approach to treatment of such patients that involves gynecologist, urologist, physiotherapist, psychologist, and psychiatrist in order to manage these common disturbing comorbidities.

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Conflicts of interest

There are no conflicts of interest.

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