Obstetric fistulae, birth outcomes, and surgical repair outcomes: a retrospective analysis of hospital-based data in Dodoma, Tanzania

Athanase Lilungulu[a], Balthazar Gumodoka[b], Mzee Nassoro[c], Patrice Soka[c] and Kibusi Stephen[d]

a Department of Obstetrics and Gynaecology, College of Health Sciences, The University of Dodoma, Dodoma, Tanzania.
b Department of Obstetrics and Gynaecology, Catholic University of Health & Allied Sciences, Mwanza, Tanzania.
c Department of Obstetrics and Gynaecology, Dodoma Regional Referral Hospital, Dodoma, Tanzania.
d College of Health Science, School of Nursing and Public Health, The University of Dodoma, Dodoma, Tanzania.

Correspondence: Athanase Lilungulu athalilungulu@yahoo.com

Submitted: May 2018 Accepted: October 2018 Published: November 2018

Introduction: Obstetric Fistula (OF) among pregnant women remains a widespread condition with devastating consequences and poses a significant challenge in a community as well as globally.

Objective: To determine the predictors and contributing factors associated with OF and birth outcomes in women undergoing fistula repair at the Dodoma Regional Referral Hospital (DRRH).

Method: This retrospective study used hospital records of women repaired over 2013 and 2014. Data were analysed using SPSS version 21 for Window (SPSS Inc., Chicago, IL, USA). Frequency tables were generated and bivariate analyses were conducted to determine the contributing factors associated with OF using chi-squared statistics.

Results: Fifty two women underwent surgical repair of a fistula; 47(90.2%) were primiparous and 5(9.6%) multiparous. There were 42(80.8%) vesico-vaginal fistulae (VVF), and 10(19.2%) recto-vaginal fistulae (RVF). Of those with VVF 5 (9.6%) had been living with urine leakage for 10 years, 25 (48.1%) for 17 years, and 12 (23.1%) for 20 years; all 10 (19.2%) with RVF had been living with the defect for 10 years. No patient had been living with both vaginal and recto fistulae.

Most of the fistulas were associated with prolonged difficult spontaneous vaginal delivery but two were associated with surgery: Caesarean Section and hysterectomy.

Surgical repair was by the transvaginal 47(90.4%) and trans abdominal 5(9.6%) routes. Female genital mutilation (FGM) was found in all the 28 women from the Gogo tribe but only in 12 of the 24 women from other tribes.

Conclusion: Timely fistula repair by experienced fistula surgeons, adhering to fastidious basic surgical principles, will improve outcomes and limit the clinical insult and distress that OF invariably causes.

Keywords: obstetrics fistula, recto-vaginal fistula, vesico-vaginal fistula, surgical repair, female genital mutilation, Tanzania.

INTRODUCTION

Obstetric fistula (OF) is a devastating pregnancy-related disability which affects an estimated 50,000 to 100,000 woman each year [1]. OF is a global problem, but is more common in Africa especially sub-Saharan Africa and South Asia [2]. The World Health Organization estimates that approximately 2 to 4 million women live with OF worldwide, with more than 1.5 million in sub-Saharan Africa [3].

This results in prolonged pressure of the baby's head against the mother's pelvis which cuts off the blood supply to the entrapped soft tissues; this leads to tissue necrosis and can involve the bladder, rectum, and vagina. The outcome is usually the death of the baby and OF in the mother [4]. In developed countries with good obstetric care OF has been completely eradicated [5].

The objective of the study is to determine the predictors and contributing factors associated with OF in women undergoing fistula repair at Dodoma Regional Referral Hospital (DRRH).

METHOD

The hospital records of 52 women whose fistula had been repaired between January 2013 and December 2014 were examined.

Data were analysed using SPSS version 21 for Window

Table 1. Socio characteristics of the enrolled patients (n=52)

Characteristics	n (%)
Age years	
Less than 35	30(57.7)
More than 35	22(42.3)
Education	
None - Primary education	49(94.2)
Secondary - highest education	3(5.8)
Occupation	
Peasants	50(96.2)
Small business	2(3.8)
Residence	
Rural	50(96.2)
Urban	2(3.8)
Marital status	
Married	15(28.8)
Divorced	30(71.2)
Others	7(13.5)
Tribe	
Gogo	28(53.8)
Other	24(46.2)
Mode of delivery	
Spontaneous Vaginal Delivery	45(86.5)
C-Section	7(13.5)
Vulva visual inspection	
With FGM	40(76.9)
Without FGM	12(23.1)

Table 2. Obstetric history and fistula outcome

Obstetrics history and fistula outcome	n(%)
Parity status	
Primipara	47(90.4)
Multipara	5(9.6)
Years of living with injury/defect	
For 10 years	5(9.6)
For 17 years	25(48.2)
For 20 years	12(23.1)
Duration of faecal vaginal leakage	
Up to 10 years	10(19.2)
Cause of fistula	
Prolonged obstructed labour	50(96.2)
Emergency Caesarian Section	1(1.9)
Hysterectomy	1(1.9)
Duration of labour	
Up to 24 hours	12(23.1)
24 - 48 hours	40(76.9)
Child outcome post delivery	
Died	20(38.5)
Survived	32(61.5)
Type of fistula	
Vesicle Vaginal	42(80.8)
Recto Vaginal	10(19.2)

(SPSS Inc., Chicago, IL, USA). Frequency tables were generated and bivariate analyses were conducted to determine the contributing factors associated with OF using chi-squared statistics.

The University of Dodoma Research Committee approved the study and permission was received from the DRRH authorities.

RESULTS

Table 1 shows the age, education, occupation, residence, marital status and tribe of the 52 patients at time of the OF repair.

Of the enrolled patients 47(90.4%) were primipara and 5(9.6%) were multipara. Table 2 shows the duration of urine leakage, cause of the fistula, and duration of labour and outcome for the baby.

Table 3 shows that transvaginal repair was the commonest route of repair - 47(90.4%) women - compared with 5(9.6%) having a trans abdominal repair. The commonest surgical suture materials used were vicrly number 3/0 and 2/0.

Repair of the fistulae it was done through the posterior wall of the vagina apart from three cases of base of the bladder fistulae and the two surgical injuries. These five were accessed abdominally.

After surgical repair 5 women (9.6%) had postoperative wound sepsis, 45(86.5%) had a negative dye test and 7(13.5%) a positive dye test (Table 4).

Table 5 shows the association between the variables related to OF and birth outcome. The deaths of all the babies delivered by C-Section were due to prolonged obstructed labour leading of massive head entrapment and causing foetal asphyxia.

DISCUSSION

The high prevalence of OF in Africa is due to poor/underdeveloped reproductive health services, individual illiteracy and community unawareness toward seeking health services [6]. Early marriage accounts for a high proportion of all pregnancies in developing countries. Studies show that OF tends to occur in first pregnancies often following teenage marriages; at this age the teenagers are at high risk of getting complications during and after delivery. Women often delay seeking medical help and live with OF for a long time even into advanced old age. This may be because of social stigma, a poor quality of life and/or lack of education preventing them seeking medical help [7].

Table 3. The surgical repair and perioperative characteristics among obstetric fistula-repaired women

Characteristics	n(%)
Route of repair	
Transvaginal	47(90.4)
Transabdominal (ureteric and bladder base injuries)	5(9.6)
Type of anaesthesia	
Spinal	49(94.2)
Saddle block	3(5.8)
Antibiotics given	
Preoperative	43(82.7)
Post-operative	9 (17.3)
Postoperative characteristics	
Duration of continuous bladder drainage	
Self-retaining catheterization - 14 days	47(90.4)
Self-retaining catheterization - 21 days	5(9.6)
Postoperative wound sepsis	
Yes	5(9.6)
No	47(90.4)
Haemoglobin level checked	
Yes	49(94.2)
No	3(5.8)

Studies done in Tanzania show that there are 1200 to 3000 new cases of OF each year; the contributing factors are lack of accessible care at dispensaries, health centres and hospitals so that women have to deliver at home [8].

The high rates of primipara in our study (90%) suggest that in order to reduce OF, one target for education on family planning should be teenagers and their families. In Zambia only 49% of women with OF were primipara[9].

In Tanzania the prevalence of FGM is 15% [10]; our study

Table 4. Post obstetric fistula surgical repair

Surgical repair outcome	n (%)
Vesicle vaginal fistula closure	
- Successful: Negative dye test	35(83.3)
- Unsuccessful: Positive dye test	7(16.6)
Total	42
Post Recto vaginal fistula repair and anal sphincter reconstruction	
- Successful repair	10(100)
Total	10

Table 5. Factors related to birth outcome among women with obstetric fistulae

	Birth outcome				
	Survived		Died		
Variables	**n**	**%**	**n**	**%**	**P-value**
Mode of delivery:					
SVD	20	44.4	25	55.6	<0.025
CS	0	0(0.0)	7	100	
Duration of labour:					
Up to 24 hours	0	0.0	12	100	<0.001(***)
24 - 48 hours	20	50	20	50	
Parity:					
Primiparous	19	40.4	28	59.6	<0.000(***)
Multiparous	1	20	4	80	
Tribe:					
Gogo	20	71.4	8	28.6	<0.000(***)
Other	0	0.0	24	100	
Genital Mutilated:					
With FGM	20	50	20	50	<0.000(***)
Without FGM	0	0.0	12	100	
Education Level:					
None–Primary	20	40.4	29	59.6	<0.224
Secondary–High	0	0.0	3	100	

area is among the geographical regions with a high rate of FGM. However the increased risk of both recto and vaginal fistula from FGM is still controversial [11]. In this study the Gogo were the tribe that seemed to have a high risk of fistula. The Gogo perform both clitoridectomy and the excision type of FGM, types that are probably not associated with the risk of OF. A similar study done in Ethiopia showed no association between FGM and risk of fistula [12].

However, the type of circumcision related to causing OF is still in doubt. Most studies have reported observational studies rather than clinical trials. These seem to indicate that FGM is associated with a significant risk of VVF and RVF [13]. On the other hand, a study in Somalia showed that the Infibulation type of FGM was the direct cause of prolonged obstructed labour rather than clitoridectomy and excision [14].

The Kuria in Mwanza is the only tribe that specifically performs clitoridectomy and similar rates of OF to that of the Kuria was observed among other tribes in Tanzania not practicing clitoridectomy. Therefore factors other than FGM should be considered when examining the risks of OF [15].

RECOMMENDATIONS

To prevent OF there needs to be increased awareness, through community education, of the dangers of prolonged labour especially among families of pregnant teenager girls and other primipara. The partogram should be seen as an important tool at all health facilities.

The social stigma of OF needs to be eradicated so that a woman with a fistula (whatever her marital status) can seek treatment early.

Skilled surgical personnel should be available to all health facilities for the intermediate and late surgical repair for both RVF and VVF.

Acknowledgements

We thank the Department of Obstetrics and Gynaecology, and all staff members of the Obstetrics theatre for their support and participation during data collection; we acknowledge the assistance provided by Medical Officer Incharge of DRRH.

Competing interests: The authors declare that they have no competing interests.

References

1. Weil L et al. Preventable maternal mortality and morbidity and human rights: Obstetric Fistula. J Chem Inf Model. 2013;53(4):1689–99.
2. Wall L. Overcoming phase 1 delays: the critical component of obstetric fistula prevention programs in resource-poor countries. BMC Pregnancy Childbirth. 2012;12(1):68.
3. Wall L et al. The Obstetric Vesicovaginal Fistula in the Developing World. WHO,UNICEF,UNFPA 2000. 2000;2(2000):1403–54.
4. Wall LL. Preventing obstetric fistulas in low-resource countries: insights from a Haddon matrix. Obstet Gynecol Surv. 2012;67(2):111–21.
5. Wall LL. Obstetric Fistula Is a "Neglected Tropical Disease." PLoS Negl Trop Dis. 2012;6(8):1769.
6. Miller S, Lester F, Webster M, Cowan B. Obstetric Fistula: A Preventable Tragedy. J Midwifery Womens Health. 2005;50(4):286–94.
7. Narcisi L, Tieniber A, Andriani L, Mckinney T. The Fistula Crisis in Sub-Saharan Africa : An Ongoing Struggle in Education and Awareness Global Incontinence Issues. Urol Nurs. 2010;30(6):341–7.
8. Mselle LT, Moland KM, Mvungi A, Evjen-Olsen B, Kohi TW. Why give birth in health facility? Users' and providers' accounts of poor quality of birth care in Tanzania. BMC Health Serv Res. 2013;13:174.
9. Holme A, Breen M, Macarthur C. Obstetric fistulae : a study of women managed at the Monze Mission Hospital , Zambia. BJOG An Int J Obstet Gynaecol. 2007;23(1):1010–7.
10. Toomany. FGM in Tanzania. Country profile. 2013;(December):5–77.
11. Erekson et al. Gynecology & Obstetrics Surgical Approach to Obstetric Fistula Repair in Niamey , Niger : A Description of Surgical Technique. Gynecol Obstet. 2011;1(1):1–3.
12. Gumodoka B, Mach E, Majinge CR. Genito-urinary fistula patients at Bugando Medical Centre. East Afr Med J. 2010;87(7):294–8.
13. Anzaku AA et al. Implication of female genital mutilation in Nigeria as portal for infectious diseases J Bacteriol Infec Dis. 2018;2(1): 28-30
14. Edna Adna University Hospital. Female Genital Mutilation Survey in Somaliland. WHO-International/Reproductive Heal. 2009;1(July):1–21.
15. Browning A et al. The Relationship Between Female Genital Cutting and Obstetric Fistulas. Obs Gynecol. 2013;115(3):578–83.