

East African Medical Journal Vol. 78 No. 5 May 2001

IMPACT OF FEMALE GENITAL MUTILATION ON MATERNAL AND NEONATAL OUTCOMES DURING PARTURITION

L. Y. Hakim, MD, PhD, Associate Professor, Department of Obstetrics and Gynaecology, Medical Faculty, Addis Ababa University, P.O. Box 8365, Addis Ababa, Ethiopia.

## IMPACT OF FEMALE GENITAL MUTILATION ON MATERNAL AND NEONATAL OUTCOMES DURING PARTURITION

L. Y. HAKIM

### ABSTRACT

**Objective:** To evaluate the impact of female genital mutilation on parturition and to create awareness of its implication on women and neonatal health.

**Design:** A cross-sectional study.

**Setting:** Tikur Anbessa, St. Paul's and Gandhi Memorial hospitals between January and December 1997.

**Subjects:** One thousand two hundred and twenty five mothers with and 256 without FGM who have had spontaneous, term, singleton and vertex vaginal delivery. Of these, 762 (51.5%) were primipara and 719 (48.5%) of them multipara. The parameters focussed upon included age, ethnicity, parity, type of circumcision, episiotomy, stages of labour, Apgar scores and related complications.

**Results:** The study revealed that 82.7% of the subjects had one form of FGM. The mean ages for the circumcised and non-circumcised were  $25.9 \pm 5.9$  and  $21.8 \pm 4.5$  years, respectively. The frequently performed genital mutilation was type II (85.5%). The mothers who required an episiotomy incision for foetal and maternal indications among the circumcised accounted for 43.0% whereas it was only 24.6% for the referent group. The mean duration of labour by conventional standards is prolonged in primiparae and multiparae both in the circumcised and non-circumcised groups, though the second stage is delayed more so for the circumcised category ( $p < 0.05$ ). The first and tenth minute mean Apgar scores seem to be more favourable for the non-circumcised ( $p < 0.05$ ) but the perinatal mortality rates are quite similar. More complications in terms of perineal tears, bleeding, incontinence and febrile illnesses are registered for the FGM.

**Conclusion:** The study demonstrates the negative impact of FGM more on maternal than neonatal outcomes during parturition.

### INTRODUCTION

Female genital mutilation (FGM) or circumcision is a genital operation for non-medical reasons and involves the cutting away of a part or whole of female external genitals(1). The art varies from region to region, country to country and is practised by Moslems and Christians alike though neither of the faiths advocates the practice(2,3). FGM can be performed during infancy, childhood, adolescence, at the time of marriage or during first pregnancy. It is often considered a harmful traditional practice detrimental to the health of the female gender and a form of violence or discrimination against girls and women(3).

FGM is performed for socio-cultural, psychosexual, hygienic, aesthetic and religious reasons(1-4). Unless and otherwise it is medicalised neither asepsis nor antisepsis nor analgesia and anaesthesia are usually employed to carry out the procedure. It is invariably performed with crude tools in poor hygienic conditions coupled with poor eyesight of the elderly traditional operators(3). Its immediate and late complications are many and leave behind an irreversible damage to the external genitalia.

It is reported that globally 100-132 million women are mutilated; about two million are at risk each year and

6000 procedures are performed everyday. FGM is practised in 28 nations in the African continent(1-5). In the Ethiopian context, sporadic reports have put the prevalence of female genital mutilation between 85-90%(6). The procedure is a widely practised phenomenon and complications of the surgery during labour, coupled with the negative effects of early marriage are marred with the development of obstructed labour and fistula formation(7-11). Therefore, the purposes of this multi-centre study were to identify the maternal and foetal obstetrical outcomes and establish a baseline information for the future implementation of any plan of action and broaden its implications for women's health by increasing awareness.

### MATERIALS AND METHODS

This cross-sectional multi-centre study was conducted in three University affiliated hospitals located in Addis Ababa during the period between January 1997 to December 1997. Tikur Anbessa, Gandhi Memorial and St. Paul's hospitals possess operational obstetric units and are actively serving as academic referral centres. The centres deliver an average of 84-210 subjects a month. The study was specifically designed to assess the prevalence and demonstrate the effects of FGM on the

immediate maternal and neonatal outcomes during delivery in 1225 genitally mutilated and 256 referent cases.

Those considered eligible for this study were consecutive cases who have had spontaneous, singleton, term and vertex vaginal delivery in the aforementioned hospitals. Each of the parturient was interviewed by the attendant physician and accordingly filled in the structured and pre-tested questionnaire that contained both closed and open-ended questions. The average time required to complete the interview was 20 minutes. Specific physical findings related to the theme were taken note of and documented. The birthweight and role of birth attendants were not outcome interests. For operational purposes, the World Health Organisation (WHO) description and classification of the different types of FGM was adopted (1).

The important parameters that were analysed at baseline included relevant socio-demographic characteristics, parity, conduct of the three stages of labour, first and tenth minute Apgar scores, degree of perineal damage unrelated to episiotomy, bleeding and type of incontinence if any among other possible complications. The first draft involving the analysis of a fourth of the population was subjected for further scrutiny by Obstetrics-Gynaecology colleagues and public health specialists; and then the parameters were updated.

The exclusion criteria encompassed include intra-uterine foetal death, multiple gestation, ruptured uterus, induced labour, malpresentations and malpositions in addition to maternal and foetal indications that necessitated instrumental vaginal and operative abdominal deliveries. An episiotomy incision was not regarded as exclusion criteria.

The patients were briefed on the objectives of the study, assured of strict confidentiality and verbal consent obtained. No formal ethical clearance was required from the hospitals. A database was created using EPI-Info Version 5, the questionnaire information loaded and statistical analysis for frequencies, comparison of proportions and t-tests were carried out.  $P < 0.05$  was considered significant.

## RESULTS

The study population composed 1481 delivering mothers from the three University teaching hospitals. The majority of the studied subjects were married 1302 (87.9%), of urban residence 1320 (89.1%), Amhara 581 (39.2%), Christians by faith 1254 (84.7%), housewives 942 (63.6%) and with high school education in 661 (44.6%) of them. The mean parity for the total population was  $1.9 \pm 1.1$  children. There were 638 (52.1%) and 124 (48.4%) primipara; and 587 (47.9%) and 132 (51.6%) multiparas in the FGM and non-FGM groups, respectively. The mean ages computed for those with and without FGM were  $25.9 \pm SD 5.9$  and  $21.8 \pm SD 4.5$  years, respectively.

The episiotomy rate that was required for the women among the FGM category was 527 (43.0%) while it was 63 (24.6%) for those without FGM. A medio-lateral incision was the rule rather than the exception with an overall rate of 590 (39.8%). The different degree of lacerations without protective episiotomy accounted for 171 (13.9%) and 20 (7.8%) among those with FGM and without. No fourth degree perineal tears involving the rectal mucosa were recorded.

The ethnic distribution of the population in the order of frequency is illustrated in Table 1. Those who did not have any form of genital mutilation accounted for 256

(17.3%) as opposed to 1225 (82.7%) with type I (11.8%), type II (85.5%) and type III (2.7%) as shown in Table 2. Inter-subject variability with respect to the surgery existed even within the specific categories. An introcision that is characterised by splitting of the vagina and perineum has not been diagnosed in any of the subjects.

**Table 1**

*Ethnic distribution of study population*

Ethnic group	FGM		Without FGM		Total	
	No	%	No	%	No	%
Amhara	505	41.2	76	29.7	581	39.2
Gurage	307	25.1	68	26.6	375	25.3
Oromo	229	18.7	60	23.4	289	19.5
Tigre	124	10.1	40	15.6	164	11.1
Others	60	4.9	12	4.7	72	4.9
Total	1225	100.0	256	100.0	1481	100

**Table 2**

*Frequency of type of FGM by parity*

Type	Primipara		Multipara		Total	
	No	%	No	%	No	%
Type I	90	12.6	54	10.5	144	11.8
Type II	613	86.1	435	84.8	1048	85.5
Type III	9	1.3	24	4.7	33	2.7
Total	712	100.0	513	100.0	1225	100.0

The mean duration of first, second and third stages of labour for FGM and without FGM subjects in relation to their parity status is presented in Table 3. The differences in the means of the first and third stages between the two groups and within parity status were not statistically significant ( $P > 0.05$ ). The mean second stage between those with FGM and without showed statistical difference ( $P < 0.05$ ).

The changes in the first and tenth minute Apgar scores as initial recordings and following resuscitative interventions are elaborated upon under 4a and 4b. This is expressive of the degree of asphyxia/apnoea of foetuses in the first and tenth minutes of the intrapartum period among both groups.

The mean first and tenth minute Apgar scores for the primipara with FGM were  $6.9 \pm SD 1.9$  and  $7.7 \pm SD 2.8$ , whereas it was  $7.2 \pm SD 1.7$  and  $8.1 \pm SD 2.4$  for the multipara, respectively (Table 4c). There was statistical difference ( $p < 0.05$ ) in the first and tenth minute Apgar scores between the primipara and multipara. However, the mean tenth minute Apgar scores between the multipara of the groups was not statistically significant ( $p > 0.05$ ).

The first and tenth minute Apgar scores for the non-FGM primipara were  $7.6 \pm SD 1.1$  and  $8.5 \pm SD 2.6$  as opposed to  $7.6 \pm SD 1.3$  and  $8.5 \pm 2.9$  for the multipara. There were statistical differences with regard to parity status in the first and also in the tenth minute Apgar scores ( $p < 0.05$ ) as shown in Table 4c. The Apgar scores for the non-FGM are relatively higher than for those with FGM ( $p < 0.05$ ). The mean tenth minute Apgar scores revealed no statistical difference ( $p > 0.05$ ).

**Table 3**

*Duration of labour by parity and status of FGM*

Stage of labour	FGM		Without FGM		P-value for means FGM FGM vs without	
	Primipara	Multipara	Primipara	Multipara		
First stage (hrs)	12.3±4.8	11.3±4.6	12.5±2.2	10.8±2.2	t=0.7	P=0.51
Second stage (min)	42.7±13.5	40.3±13.1	41.4±3.2	38.9±3.2	t=2.1	P=0.03
Third stage	11.3±4.6	10.8±3.4	12.1±4.8	10.2±3.3	t=0.5	P=0.64
Total (hrs)	13.12	12.09	13.23	11.37		

**Table 4a**

*Mean apgar score by parity and status of FGM  
Degree of apnoea for FGM group*

Parity	Terminal apnoea 0-1		Moderate apnoea 2-4		Primary apnoea 5-7		Normal 8-10	Total
	First	Tenth	First	Tenth	First	Tenth		
Primipara	27	(70)	21	(-)	285	(35)	305	638
Multipara	20	(45)	15	(-)	213	(15)	339	587
Total	47	(115)	36	(-)	498	(50)	644	1225

**Table 4b**

*Degree of apnoea for non-FGM*

Parity	Terminal apnoea 0-1		Moderate apnoea 2-4		Primary apnoea 5-7		Normal 8-10	Total
	First	Tenth	First	Tenth	First	Tenth		
Primipara	1	(16)	9	(-)	17	(-)	97	124
Multipara	0	(8)	5	(-)	8	(-)	119	132
Total	1	(24)	14	(-)	25	(-)	216	256

**Table 4c**

*Mean Apgar scores*

Parity	Apgar Score FGM		Without FGM	
	First minute	Tenth minute	First minute	Tenth minute
Primipara	6.9±1.9	7.7±2.8	7.6±1.1	8.5±2.6
Multipara	7.2±1.7	8.1±2.4	7.6±1.3	8.5±2.9
Means	7.0±1.8	7.9±2.6	7.6±1.2	8.5±2.8

**Table 5**

*Frequency of complications by parity and status of FGM*

Complication	FGM				Without FGM			
	Primipara		Multipara		Primipara		Multipara	
	No	%	No	%	No	%	No	%
Foetal loss	70	27.1	45	35.4	16	59.3	8	34.8
Lacerations	123	47.7	48	37.8	7	25.9	13	56.5
Shock/Bleeding	39	15.1	15	11.8	3	11.1	2	8.7
Febrile illness	21	8.1	18	14.2	1	3.7	-	-
Urinary incontinence	3	1.2	1	0.8	-	-	-	-
Faecal/flatus								
Incontinence	2	0.8	-	-	-	-	-	-
Total	258	100	231	100	27	100	23	100

More entries of various complications in isolation or in combination were observed for the FGM group of 489 (39.9%) as compared to the control group 50 (19.5%) as depicted in Table 5. The unadjusted perinatal mortality rate for those with FGM and without FGM were 93.9/1000 and 93.8/1000 births, respectively. It was noted that 171 (13.9%) subjects with FGM had perineal lacerations with 102 (59.7%) first, 56 (32.7%) second and 13 (7.6%) third degree tears. The different perineal tears for the referent

cases 20 (7.8%) were 15 (75%), 4 (20%) and one (5%) for first, second and third degree, respectively. Febrile illnesses, bleeding and incontinence of either urinary and flatus or faeces were observed more frequently in the immediate postpartum period among the FGM group.

## DISCUSSION

The perineum is delicate in its anatomical structure and is highly vascular and rich in nerve supply. Genital mutilation is an irreversible damage with scarification and loss of elasticity of the involved tissues. The disfigured external genitalia is obviously subjected to a higher incidence of tears/lacerations during parturition and is anticipated to interfere with the progress of labour. Intuitively, it is thus obvious that it does contribute to a number of obstetrical complications during delivery. This is the first ever article on the subject providing an insight on FGM and its effect during parturition from an Obstetrician's perspective.

The frequently practised form of FGM is type II 1048 (85.5%) which by definition implies the removal of the clitoris, prepuce and varying amounts of labia minora and parts or all of the labia majora. This was the case in 82.7% of the study population irrespective of their residence, religion and ethnicity and this observation is consistent with other studies (3, 6-8). The mean age was  $25.9 \pm SD 5.9$  years for subjects with FGM as opposed to the younger population ( $21.8 \pm SD 4.50$  years) who have not undergone genital mutilation ( $P < 0.05$ ). This may suggest a changing attitude towards the practice of FGM among the younger generation though it still heralds an epidemic proportion of prevalence with tremendous cosmetic and health issues.

The mean duration of each of the stages of labour for those with and without FGM is shorter for the multiparae than primiparae ( $p < 0.05$ ) and the data presented herein is basically in agreement with the normally accepted figures (12-14). The status of FGM had no bearing or influence on the first and third stages of labour and a critical appraisal does not warrant any clinical association. However, the second stages of labour are found to be shorter, for the ones without genital mutilation; and the difference was statistically significant ( $p < 0.05$ ). In the light of possible anoxic or hypoxic insults to the brain and the interplay of several factors affecting the physiology of cardiopulmonary functions, the second stage is considered a determinant phase in the well-being of the foetus in the intrapartum period. The better Apgar scores of neonates born to those without FGM nevertheless did not impressively reflect the possible untoward consequences of second stage of labour since the perinatal mortality rates were similar in both groups and are in fact in congruence with departmental monthly records. The available resuscitative measures employed could salvage only limited number of distressed foetuses. It is not a customary practice to perform postmortem examinations in order to establish the causal factors. Hence, caution is exercised in the interpretation and association of such closed attributions.

In all aspects and unlike the mean, the total duration of labour is not prolonged in comparison to the normally cited ranges in standard textbooks; and these are in agreement within durations of less than 18 hours and 12 hours for primis and mults, respectively. This observation may be attributed to several confounding and specifiable factors like cultural influence, time of hospital arrival, labour orientation, type of pelvis and stature, birth weight, meticulous monitoring of labour through the application

of a cardiocotograph and a partograph or determining the foetal scalp pH and acid-base balance.

The frequency of various types of maternal complications especially perineal tears are commoner among the genitally mutilated particularly in the multiparae. The causes of these could be due to repeated scarification, unyielding perineum and larger infant birthweight with increasing parity resulting in increased demand for episiotomy in order to overcome the soft tissue dystocia or limited elasticity. This is in complete contrast to the common belief that circumcision facilitates an easy delivery and confers a good protection against lacerations and uterine rupture. It is beyond the scope of the study to establish an association between episiotomy and lacerations even though it is generally accepted that episiotomy rates vary greatly by centre (39%-88%) and type, and that it could markedly contribute to the evolution of severe lacerations (15).

The study despite being institution-based has reckoned the impact of FGM on maternal soft tissue even though it did not make its marks on neonatal outcomes despite significant shorter second stage of labour among subjects without FGM is painfully tolerated and forcibly performed in crude and unhygienic traditional operation with no universally accepted indication and mode. Hence, there is a concern and a need to bring forth the issue in order to improve the quality of women's life through a campaign tailored towards its discouragement as a preventative measure by highlighting its negative impact in many spheres, including delivery.

## ACKNOWLEDGEMENTS

I thank Drs. Harar A., Shabir I., Yirgu G/H., Alemayehu W., Misganaw F., and Ato Fikre E. for assistance and constructive comments right from the pilot analysis upto the completion of the write-up. I also thank the consultants, residents and interns who helped in the supervision and data collection during the specified period. Special thanks go to Ms. Anketse Kassa for the secretarial support.

## REFERENCES

1. World Health Organisation. Female genital mutilation: Report of a WHO Technical Working Group. Geneva, 1995; P.17-19.
2. Toubia, N. Female genital mutilation: a call for global action. New York Women Inc. 1993; pp 48-57.
3. Hosken, F.P. The Hosken Report: genital and sexual mutilation of females. 4th Rev. Ed. Lexington, Massachusetts, Women's International Network News. 1993; pp1-86.
4. Slack, A.T. Female Circumcision: a critical appraisal. *Human Rights Quarterly*. 1988; **10**:437-486.
5. Karungari K. Female genital mutilation: a reproductive health concern. *Population Reports (Supp)*. 1995; **41**:39-43.
6. Inter-African Committee on Traditional Practices Affecting the Health of Women and Children in Africa, 6-10 April 1987. Addis Ababa, Ethiopia. IAC, 1987, P 182-188.
7. Huber, A. Die Wabliche Beschneidung. *Journal der Tropen Medizin und Parasitologie*. 1969; **20**:1-10.
8. Huber, A. Weibliche Zircumzision und Infibulation in Aethiopien. *Acta Tropica (Basel)*. 1966; **23**:87-91.
9. Odoi A, Brody S.P, Elkins T.E. Female genital mutilation in rural Ghana, West Africa. *Int. J. Gyn-Obs*. 1997; **56**:179-180.
10. Cutner L.P. Female genital mutilation. *Obstet Gynec Sur*. 1985; **40**:437-443.
11. Azbaha. H. Fistula: a socio-medical problem. *Ethiop. Med. J*. 1983; **21**:71-77.
12. Gabbe S.G. Niebyl J.R. and Simpson J.L. *Obstetrics: normal and problem pregnancies*. Churchill Livingstone Inc. 1996; pp369-375.
13. Cunningham F.G, Mac Donald P.C. Et al. *Williams Obstetrics*. 20th Ed. Prentice-Hall International Inc. 1997; pp261-317.
14. Whitfield C.R. Dewhurst's Textbook of Obstetrics and Gynaecology for Postgraduates. Blackwell Science Ltd. 5th Ed. 1995; pp293-311.
15. Green J.R. and Soohoo S.L. Factors associated with rectal injury in spontaneous deliveries. *Obstet. Gynec*. 1989; **73**:732-737.