

Epidemiology of Male Circumcision and Its Attendant Complications in Osogbo, Nigeria

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Abstract

Introduction:

Circumcision is a commonly performed procedure all over the world and it is done for various reasons ranging from medical to religious, cultural and other reasons. It is not without complications, some of which can be very distressing to both parents and practitioners. This study was carried out to describe the complications associated with circumcision among male children presenting at the infant welfare clinic and pediatric clinic in a teaching hospital in South western Nigeria.

Materials and Methods:

This descriptive study was conducted on 114 male children at infant welfare clinic and pediatric clinic of LAUTECH teaching Hospital, Osogbo. The respondents essentially consist of 114 consecutive children between the ages of one week to fifteen months attending pediatric outpatient unit whose parents consented to participate in the study. Data were retrieved using a structured questionnaire and clinical examination of respondents' phallus and the data collected included socio-demographic information, procedure's information and the attendant complications. Data analysis was done with SPSS 20.

Results:

The age range of the respondents was from one week to 15 years. The results showed that most of the respondents had circumcision done during the first two weeks of life, 81(71.1%), at the hospital 84(73.7%) and for cultural reasons 21(18.4%). Doctors performed most of the circumcision 57 (50.0%), followed by Nurses 43(37.7%), Traditional circumcisionist 11 (9.6%) and Community health worker 3(2.6%). The use of Plastibel was the most common technique utilized by the practitioners, 66 (79.5%), followed by free hand technique 15 (18.1%). Table 1

About 77 of them (67.5%) had one complication or the other. Figure 1. The early complications recorded excessive bleeding, pain and inadequate skin removal while the late complications were meatal stenosis and urethrocuteaneous fistula. Figure 2

There was significant association between when the circumcision was done and the complication rate $p= 0.023$. Those circumcised within 2 weeks of life had lesser complications, $p= 0.030$ compared to those circumcised after 2 weeks of life. The category of the Accoucher was also of importance, with those performed by Doctors having lesser complication rates

compared to other categories of health professional. There was no significant association between the method of circumcision and the complication rate. Table 2

Conclusion:

The findings indicate that complications can occur in circumcision done by Practitioners of any cadre, however those done in the hospital and by Doctors were associated with lower complication rates.

We recommend the training and retraining of all categories of workers who perform circumcision to achieve desired result

Keywords human papillomavirus virus, papanicolaou smear test, visual inspection with acetic acid/visual inspection with lugol's iodine, age, non-communicable diseases

INTRODUCTION

Male circumcision is defined as the surgical removal of the foreskin covering the glans penis. It is a commonly performed procedure all over the world and it is safe with a fairly low complication rate. Male circumcision is done for various reasons ranging from medical to religious and cultural reasons and there are several methods of performing the procedure. Various authors have reported benefits of circumcision including but not limited to: prevention of urinary tract infection, decreased incidence of penile cancer, and decreased sexually transmitted infection. However, circumcision, like any other surgical procedure, does carry the risk of complications. Complication rate depends on so many factors, including anatomic abnormalities, medical co morbidities, surgical technique and patient age.

The rate of complications varies widely across reports, depending on the definition chosen for a post circumcision complication. Adverse events following circumcision can be categorized as early or late complications. Some of these complications can be dreadful while others are minor complications that can be managed on out-patient basis. It ranges from, but not limited to glandular necrosis, meatal stenosis, urethrocutaneous fistula and ammoniacal meatitis

In a one year multicenter survey of complication of circumcision in Israel in 2005, it was showed that complication rate was as low as 0.34% with acute bleeding being the most early complication in 57% of cases². A similar study carried out in the United State in the 90's showed a complication rate of 0.19% and these complications include local infections, haemorrhage, surgical trauma and urinary tract infections³.

In Africa, a study conducted in UCH, Ibadan by Linus Okeke et al in 2006 found that the rate of complication is high. A complication rate of 20.2% was observed. 53.8% of these were redundant foreskin, 24.6% excessive loss of foreskin and 3.1% sustained amputation of glans⁴. It was also observed that circumcision rate was 87% with 80.7% of these performed in the hospital (55.9% by nurse and 35.1% by doctors)⁴. Another study carried out among the Igbo's of Southeast Nigeria in 2004 showed a complication rate of 24.1%⁵.

More than 10years after the above publications in Nigeria with such high complication rate, there is a need to carry out another retrospective survey to see the present epidemiology of complications of circumcision. Hence the need for this study which was carried out in LAUTECH Teaching Hospital, Osogbo, Southwestern Nigeria.

MATERIALS AND METHODOLOGY

A total of 114well-structured semi-open questionnaires were administered to 114consecutive children between age of one week to fifteen years attending infant welfare clinic and pediatric outpatient of LAUTECH Teaching Hospital Oshogbo whose parents consented to participate in the study over a 16 week period. Information about their circumcised male children was collected with the help of the questionnaire as well as examination of the external genitalia... The information obtained was entered into SPSS for analysis.

RESULTS

The age range of the respondents was from one week to 15 years. The results showed that most of them had circumcision done during the first two weeks of life, 81(71.1%), at the hospital 84(73.7%) and for cultural reasons 21(18.4%). Doctors performed most of the circumcision 57 (50.0%), followed by Nurses 43(37.7%), Traditional circumcisionist 11 (9.6%) and Community health workers 3(2.6%). The use of Plastibel was the most common technique utilized by the practitioners, 66 (79.5%), followed by free hand technique 15 (18.1%).

Table 1: Age and circumcision related characteristics

Variable	Frequency (n=114)	Percentage
Age group (Months)		
<1	7	6.1
1-12	74	64.9
>12	33	28.9
Age at circumcision (Days)		
<7 days	40	35.1
8-14	41	36.0
15-28	19	16.7
>28	14	12.3
Location of circumcision		
Hospital	84	73.7
Home	26	22.8
Religious center	4	3.5
Accoucheur		
Doctor	57	50.0
Nurse	43	37.7
Traditional circumcisionist	11	9.6
Community worker	3	2.6
Reason for circumcision		

Compulsory for boys	15	13.2
Cultural reason	21	18.4
Medical reason	10	8.8
Social reason	2	1.8
Religious reason	14	12.3
Not specify	52	45.6
Used of specialized method		
Yes	83	72.8
No	31	27.2
Specialized method use(n=83)		
Plastibel	66	79.5
Free hand circumcision	15	18.1
Gomco	2	2.4

About 77 of them (67.5%) had one complication or the other. Figure1.

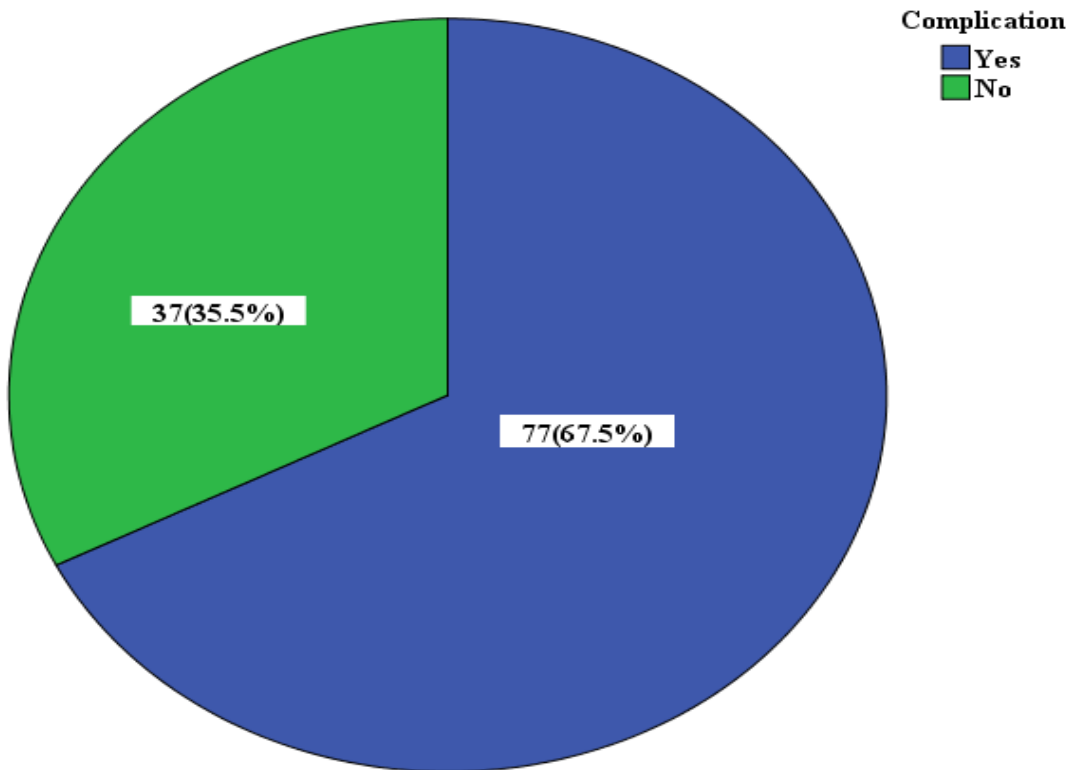


Figure 1: Rate of Complication

The early complications recorded excessive bleeding, pain and inadequate skin removal while the late complications were meatal stenosis, urethrocutaneous fistula and iatrogenic hypospadias. Figure 2

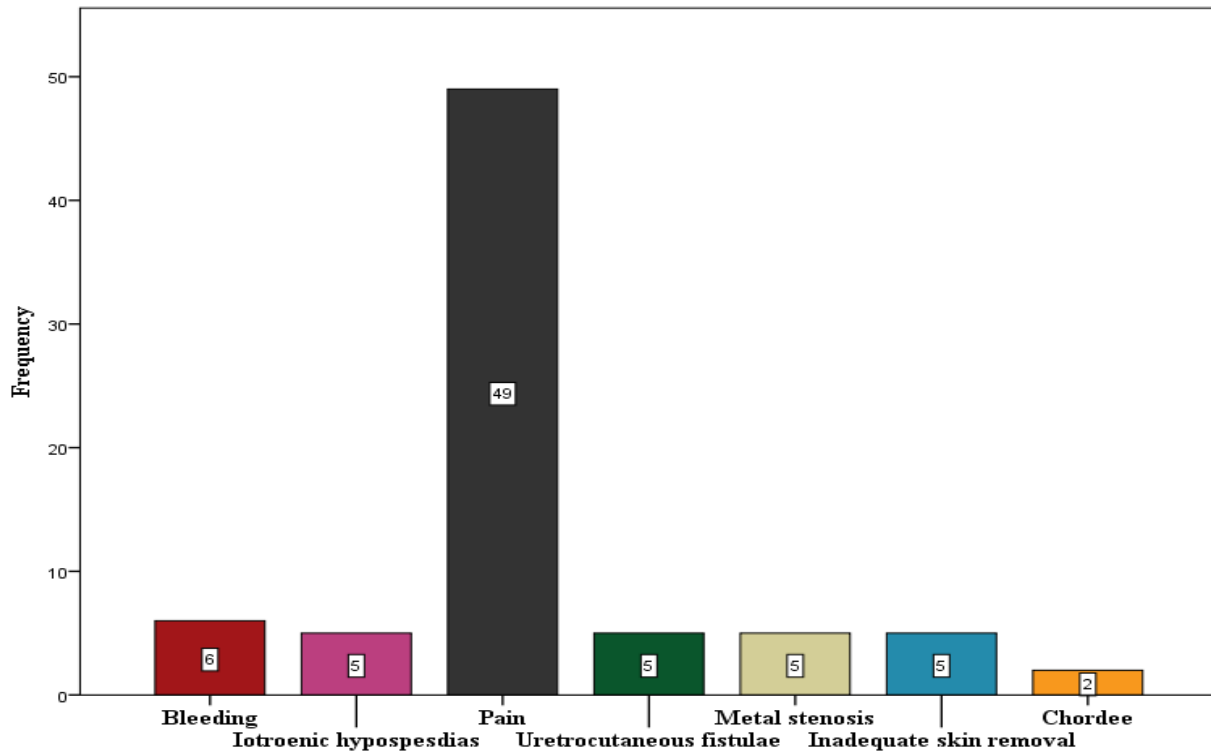


Figure 2: Different complications

There was significant association between where the circumcision was done and the complication rate $p= 0.023$. Those circumcised within 2 weeks of life had lesser complications, $p= 0.030$ compared to those circumcised after 2 weeks of life. The category of the Accoucher was also of importance, with those performed by Doctors having lesser complication rates compared to other categories of health professional. There was no significant association between the method of circumcision and the complication rate. Table 2

Table 2: Association between complication status and circumcision related characteristics

	Complication (n=77)	No complication (n=37)	f	p-value
Location of circumcision			5.215	0.023*
Hospital	52(61.9)	32(38.1)		
Home	21(80.8)	7(19.2)		
Religious center	4(100.0)	0(0.0)		
Age at circumcision (Days)			7.788	0.030*
<7 days	26(65.0)	14(35.0)		
8-14	23(56.1)	18(43.9)		
15-28	15(78.6)	4(21.1)		
>28	13(92.9)	1(7.1)		
Accoucheur			3.047	0.384

Doctor	37(64.9)	18(32.7)		
Nurse	28(62.2)	17(37.8)		
Traditional circumcisionist	9(81.8)	2(18.2)		
Community worker	3(100.0)	0(0.0)		
Used of specialized method			0.859**	0.354
Yes	54(65.1)	29(34.9)		
No	23(74.2)	8(25.8)		
Method type (n=83)			1.390	0.499
Plastibel	45(68.2)	21(31.8)		
Free hand circumcison	8(53.3)	7(46.7)		
Gomco	1(50.0)	1(50.0)		

F=fischer exact test, *=significant, **=Chi square test used

DISCUSSION

Circumcision, though a procedure done worldwide has different epidemiological pattern in different culture and country.

The circumcision rate also varies from different countries. In our study, the circumcision rate was 100%. This is different from the circumcision rate of 80% from a study done in Ibadan western Nigeria in 2006 and far from the average world circumcision rate of 25%-33.3%^{6,7}. The higher circumcision rate in our environment may not be unconnected to the cultural and religious believe in the need for circumcision for a male child. In our study, reasons given for circumcision of male child were mainly cultural followed by religious and medical reasons.

Male circumcision is commonly done during neonatal period worldwide⁴. However, people in the pacific region prefer it done for their male children between the ages of 6 and 10 years⁸ while in South Africa, among the Xhosa tribe in the Eastern Cape region, it is done to initiate manhood⁹. In our study, majority of the children were circumcised within the first 2 weeks of life. This is in agreement with the commonly held believe that circumcision is mostly done in the neonatal period

Majority of the cases of male circumcision we studied were done in the hospital, 84(73.7%). This is similar to what was observed in Ibadan, South Western Nigeria and Ilorin, North central Nigeria⁴. However, in some part of the world, nearly all circumcision are done outside the hospital^{9,2} This is seen commonly in community that carry out circumcision mostly for religious purpose e.g. Israel² and for initiation into manhood e.g. Xhosa tribe in South Africa⁹.

Overall, doctors performed 57 (50.0%) of the cases of circumcision studied while nurses and traditionalist performed 43(37.7%) and 11(9.6%) respectively. This may be due to the fact that some male health workers posed as doctors to carry out this procedure for mothers.

Linus Okeke et al in their study in Ibadan in 2006 found out that most circumcision procedures were performed by nurses⁴. However, in countries like Israel and South Africa, it is not unusual for non-doctor to perform the procedure^{2,9}.

We observed that plastibel was used in most of the cases studied accounting for 66 (79.5%) and this was commonly used by medical doctors, as 91.3% of medical doctors used this method over others. This is supported by a similar study done by Popoola et al and Abdur-Rahman et al in Ilorin^{10,11}. On the other hand, free hand techniques are favored by the nurses.

Excluding some minor early complications like bleeding and pain, the complication rate from our study was 19.3%. Though complications are known to follow any surgical procedure and circumcision is not excluded, the complication rate from this study is still relatively high. This especially is in comparison to average world circumcision complication rate which ranged between 0.19% and 3.1%^{2, 12, 13}. However, the complication rate is similar to that reported by Okeke et al in Ibadan South west Nigeria in 2006 which was 20%.

Urethro-cutaneous fistula and meatal stenosis each accounted for about 5%. These are not in agreement with findings of Ben chaim et-al² in Israel and Yegane R.A¹⁴ in Iran where redundant skin was seen to be the most common late complication.

Most of the late complications were observed in cases handled by the community health workers 3(100%), followed by traditional circumciser 9(81.8%) and nurses 28(62.2%). This may be connected to the type of circumcision method used by them, which is more of the free-hand method

Conclusion: These findings indicate that complications can occur in circumcision done by Practitioners of any cadre, but are significantly lower in those done by highly trained and more qualified personnel.

Therefore, we recommend training and retraining of health workers that are involve in circumcision so as to reduce associated morbidity especially in the tropics.

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