

COMPLICATIONS OF MALE INFANT CIRCUMCISION IN A SEMI-URBAN NIGER DELTA TOWN

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Author's contributions

This work was carried out in collaboration between both authors. PJA and IG designed the study. PJA performed the statistical analysis and wrote the first draft of the manuscript. IG managed the literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

Aim: This study aims at documenting the prevalence and complications of male infant circumcision and compares the complication rates between various circumcisers.

Study Design: A prospective study.

Place and Duration of Study: 300 consecutive male infants attending the infant immunisation clinic of the Niger Delta University teaching hospital, Okolobiri over a 6 month period; between the October, 2011 and March, 2012.

Method: Relevant information was obtained from the patients who were then examined. Information obtained was recorded on a proforma.

Results: The ages of the infants were between 1 day and 336 days. The circumcision rate was 93.3%. The mean age at circumcision was 15.5 ± 17.0 days. Nurses performed 47.1%, Traditional circumcisers 32.9% and Doctors 20.0% of all circumcisions. Educational status of mothers was a determinant of the Circumciser. None of the infants whose mothers had primary school education was circumcised by a Doctor, most (64.4%) of them were circumcised by a traditional circumciser. The general trend showed that the more educated the mothers of the infants, the more likely it was for their infants to be circumcised by Doctors and Nurses. The complication rate was 24.3%; most were mild. Infants circumcised by Nurses had the most complications (25.8%), followed by those circumcised by Doctors (25.0%) and least 21.7% in infants circumcised by Traditional circumcisers. There was however no significant difference in complication rates between infants circumcised by nurses as compared with

Traditional circumcisers ($p=0.793$); there was also no significant difference in complication rates between Doctors and Traditional circumcisers ($p=0.798$).

Conclusion: The prevalence of infant circumcision is very high in our community. The complication rate is also high. There was however no significant difference in complication rates between circumcisers. Efforts must be made to properly train all persons involved in this procedure.

Key words: *male;infant;circumcision;complications.*

INTRODUCTION

Male circumcision is the surgical removal of the foreskin from the penis in the human (Sawyer S, 2011; Lissauer T and Clayden G, 2011). It is one of the oldest and most commonly performed surgical procedures worldwide with approximately one in three males circumcised globally (WHO/UNAIDS, 2008; Weiss HA et al, 2010). It is performed for cultural, religious and aesthetic reasons among Africans, Jews and Moslems (WHO/UNAIDS, 2008; Glass JM, 1999). Such communities therefore experience a high prevalence of circumcision (Puig Sola C et al, 2003; Drain PK et al, 2006). In Nigeria, the prevalence of circumcision is high (Okeke IL et al, 2006) and a large proportion of this procedure is performed

outside the hospital. Often, this is done by medically untrained persons who are traditionally recognized as Circumcision practitioners. This situation of unregulated practice has apparently contributed to the large numbers of circumcision complications.

We therefore undertook this study to document the prevalence of the practice of circumcision and to evaluate its complications and ascertain any differences in complication rates between Doctors, Nurses and Traditional circumcisers.

MATERIALS AND METHODS

All 300 consecutive consenting male infants attending the infant immunisation clinic at the Niger Delta University Teaching Hospital, Okolobiri were recruited and studied over a 6 month period; from October, 2011 to March, 2012. Relevant information was obtained and recorded on a proforma. Information obtained included the circumcision status (circumcised or not circumcised), the age of the patient, age at circumcision, the performer of the procedure (Doctor, nurse, traditional practitioner etc). The patient was also asked on the occurrence of bleeding or other problems following the procedure. They were subsequently examined and findings were also noted.

Data was analysed using SPSS version 11. p values < 0.05 were regarded as significant.

RESULTS

A total of 300 male infants were studied. The minimum age was 1 day and the maximum was 336 days. 280(93.3%) had been circumcised while 20(6.67%) had not been circumcised. All those not circumcised had expressed their desire to do so in the near future. Childhood illness, prematurity and the age being below 8 days were the reasons given for haven not circumcised the infants.

The mean age at circumcision was 15.47 ± 16.99 days.

Most of the circumcisions were done by nurses 132 (47.1%), this was followed by traditional circumcisers 92 (32.9%) and doctors were responsible for 56 (20%). This is illustrated in Table 1.

When the educational status of the mothers of the circumcised infants was compared with the circumcisers, the following were observed: None of the infants whose mothers had primary school education alone was circumcised by a Doctor. 55% of such infants were circumcised by a Nurse and 64.3% were circumcised by a traditional circumciser. Among Infants whose mothers had up to secondary school education, 16.7% were circumcised by a Doctor, while 42.2% were circumcised by a nurse and 33.8% were circumcised by a traditional circumciser. Among infants whose mothers had tertiary education, 30.3% were circumcised by a Doctor, while 54.6% were circumcised by a Nurse and only 15.1% had their circumcision done by a traditional circumciser. (Table 2).

Of the 280 infants who had been circumcised, 68 (24.3%) had complications. The commonest complications observed were penile adhesions and redundant foreskin, each had 26 (38.2%) of complications. 8 (11.8%) had an excess of their foreskin removed, 6 (8.8%) had significant bleeding and 2 (2.9%) had urethrocuteaneous fistula. (Table 3). Complication rate in the hands of Doctors was 25.0%. Nurses recorded a complication rate of 25.8% and that of traditional circumciser was 21.7%. There was no significant difference in complication rates between infants circumcised by Nurses as compared with those circumcised by Traditional circumcisers ($p=0.793$). There was also no significant difference in complication rates between infants circumcised by Doctors as compared with those circumcised by Traditional circumcisers ($p=0.798$).

TABLE 1: CIRCUMCISERS OF INFANTS

CIRCUMCISER	NUMBER OF INFANTS	PERCENTAGE
Doctor	56	20
Nurse	132	47.1
Traditional circumciser	92	32.9
	280	100.0

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103 **TABLE 2: EDUCATIONAL STATUS OF MOTHERS AND CIRCUMCISER**

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CIRCUMCISER	EDUCATIONAL STATUS OF MOTHER			TOTAL
	PRIMARY	SECONDARY	TERTIARY	
Doctor	0 (0%)	36 (64.3%)	20 (35.7%)	56 (100%)
Nurse	5 (3.8%)	91 (68.9%)	36 (27.3%)	132 (100%)
Traditional Circumciser	9 (9.8%)	73 (79.3%)	10 (10.9%)	92 (100%)
TOTAL	14	200	66	280

TABLE 3: COMPLICATIONS OF CIRCUMCISION

COMPLICATION	NUMBER OF INFANTS	PERCENTAGE	
Adhesions	26	38.2	
Redundant foreskin	26	38.2	
Excess removal of foreskin	8	11.9	
Bleeding	6	8.8	
Urethrocutaneous fistula	2	2.9	
	68	100.0	

TABLE 4: COMPLICATIONS OBSERVED BY VARIOUS CIRCUMCISERS

CIRCUMCISER	NUMBER OF INFANTS	NUMBER OF COMPLICATIONS	% COMPLICATIONS
Doctor	56	14	25
Nurse	132	32	25.8
Traditional Circumciser	92	20	21.7

108 DISCUSSION

109 Worldwide, about one in every three males is circumcised (WHO/UNAIDS, 2008; Weiss HA et al, 2010). In Nigeria and other African countries, the
110 rates appear to be much higher (Okeke IL et al 2006; Drain PK, Halperin DT et al, 2006; Manji KP, 2000). In most of these countries, infant
111 circumcision is widely practiced. In this study, we had an infant circumcision rate of 93.3%. This is expected. A similar study done in Ibadan
112 showed a rate of 87% (Okeke IL et al, 2006). Only 6.7% of infants studied had not been circumcised. It must be noted though that they all plan to
113 do their circumcision in the nearest future. Reasons given for not being circumcised were neonatal illness and those waiting for the eight day of life
114 to perform the procedure. It is a widely held belief in this society that circumcision should be done on the eight day of life. It can be observed that
115 circumcision in this study environment is performed at infancy unlike some places where it is done later in childhood or early adolescence as part
116 of a traditional rite. It must be emphasised that all those studied were circumcised as a cultural-religious obligation.

117 Most circumcisions were performed by nurses. A similar pattern was noted by Okeke and his colleagues at Ibadan. Traditional circumcisers were
118 next and the least number of circumcisions were performed by doctors. This is largely so because circumcision in this Community is a cultural
119 practice and in this semi-urban setting, there are traditional circumcisers who have over generations performed this procedure. Infants are
120 therefore not routinely brought to hospital for this procedure. Nurses also run community practice and a sizeable number of circumcisions are
121 performed by them after delivery of such male infants. The hospital and even the doctor are seen as intruders in this practice. Another reason is
122 the relative poverty in the community. Patients are required to pay for hospital registration and for the procedure; traditional circumcisers are
123 cheaper and are usually known members of the community. This may well explain the higher patronage of these traditional circumcisers by those
124 with only primary school education.

125 Circumcision is relatively safe with an overall complication rate of 0.19-3.1% (Ben Chaim J et al, 2005; Bhat BA et al, 2001; Okafor P et al, 2005).
126 However, some studies show much higher complication rates even though these were relatively mild complications. Okeke et al observed a
127 complication rate of 20.2%. This is similar what we obtained in this study with a complication rate of 24.3%. None of our study infants required
128 hospitalisation and most were mild and not life threatening. Complications are said to be more in children circumcised for medical reasons like
129 phimosis. Those circumcised for religious and cultural reasons tend to have fewer complications. Although not statistically significant,
130 complication rates were higher with nurses and Doctors than traditional circumcisers. This is unusual and at variance with other findings. The
131 possible explanation is that most of the Doctors who performed the circumcisions had no training in surgery. The Doctors were mostly young and
132 inexperienced as is usually found in most semi-rural communities in Africa. Other studies showed much higher complication rates in non-medical
133 circumcisers. Two studies of note report complication rates as high as 80% in the hands of these traditional circumcisers. (Bailey RC et al, 2008;
134 Atikeler MK et al, 2005). It must be mentioned that in Israel, circumcision is performed mostly by non-medical traditional circumcisers and
135 complication rates are very low (Ben chaim J et al, 2005). Also training of traditional circumcisers have large resulted in lower complications.

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138 **CONCLUSION**

139 The findings in this study further reinforce the fact that the practice of circumcision needs to be made safer. Circumcision practitioners would
140 require training to improve the outcome.

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142 Competing interests: The Author(s) declare that there are no competing interests.

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UNDER PEER REVIEW