

Parental circumcision preferences and early outcome of plastibell circumcision in a Nigerian tertiary hospital

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ABSTRACT

Background: Parents are central in decisions and choices concerning circumcision of their male children and plastibell circumcision is a widely practiced technique. This study determined parental preferences for male neonatal and infant circumcisions and evaluate the early outcomes of plastibell circumcisions in a tertiary centre. **Patients and Methods:** This is a prospective study on consecutive male neonates and infants who were brought for circumcisions at Nnamdi Azikiwe University Teaching Hospital Nnewi, South-East Nigeria and their respective parents between January 2012 and December 2012. Data on demography, parental choices and early outcome of plastibell circumcision were obtained and analysed. **Results:** A total of 337 requests for circumcisions were made for boys with age range of 2-140 days. Culture and religion were the most common reasons for circumcision requests in 200 (59.3%) and 122 (36.2%), respectively, other reasons were medical, cosmesis, to reduce promiscuity and just to follow the norm. Most parents, 249 (73.9%) preferred the procedure to be performed on the 8th day and 88.7% would like the doctors to perform the procedure while 84.6% preferred the plastibell method. Among those who had circumcision, 114 complied with follow-up schedules and there were complications in 22 (19.3%) patients. Parents assessed the early outcome as excellent, very good, good and poor in 30.7%, 45.6%, 18.4% and 5.3% of the patients, respectively. **Conclusion:** Parents request for male circumcision in our environment is largely for cultural and religious reasons; and prefer the procedure to be performed by a physician. Plastibell method is well known and preferred and its outcome is acceptable by most parents.

Key words: Complications, infants, neonates, Nigeria, plastibell circumcisions, preferences

INTRODUCTION

Male circumcision is perhaps the oldest, most common and most controversial surgical procedure world over.^[1-3] It is usually carried out largely for cultural and religious reasons. Other indications are for hygienic benefits, treatment of phimosis, paraphimosis, prevention of penile and cervical cancers, urinary and sexually transmitted infections including human immunodeficiency virus (HIV).^[1-4]

There are various methods of performing newborn circumcision which include the traditional free hand technique, dorsal slit method, use of bone cutters and the use of clamp devices which includes; Mogen clamps, Gomco clamps and plastibells® (Hollister inc. Illinois, USA). The use of plastibell is widely preferred and practiced due to its ease of performance, safety and short duration of procedure.^[5-7]

Despite its merits, the plastibell technique could result to certain complications ranging from minor events such as oedema, surgical site infections, residual foreskin and retained ring to severe and challenging complications such as ring slippage with attendant primary haemorrhage, glansular gangrene and urethrocutaneous fistula.^[5-10]

Most male circumcisions are carried out during the newborn periods and infancy.^[2,7,11] This underscores

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the role of parents and care givers in the decision and choices regarding circumcision of their boys who are minors.^[12] The prevalence of male circumcision in the Eastern Nigeria likely exceeds the World Health Organization's reported figure of 90% for Nigeria Majority of these are carried out for cultural and religious reasons.^[1,2,8]

In Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, routine neonatal circumcisions are done with the use of plastibell technique except when not feasible, however no study has been done in the region to determine the indications for the procedure, the choices of the parents requesting for circumcisions for their sons and the outcome of the plastbell circumcisions done in the centre.

Aims

The aims of the study are to determine the indications for neonatal circumcisions, parental preferences in terms of timing, method and personnel for early childhood circumcisions, outcome and acceptance of plastibell circumcision at NAUTH, Nnewi and to determine the parental acceptance and satisfaction following plastibell circumcisions.

PATIENTS AND METHODS

A prospective cross-sectional study on consecutive male neonates and infants who were brought for circumcisions at Nnamdi Azikiwe University Teaching Hospital, Nnewi and their respective parents between January 2012 and December 2012. Informed consents were obtained from the parents. Domains explored were; demography, parental preferences and early outcome.

The babies were reviewed at the out-patient clinics and parents were interviewed on their preferences. Those with hypospadias, micropenis and parents who declined participation were excluded from the study. Those who were fit for the procedure and whose parents had consented to participate in the study were enrolled. Standard plastibell circumcisions using plastibells® (Hollister inc. Illinois, USA) [Figure 1a-g] were performed 3 days after (the unit's circumcision day) by doctors in the paediatric surgery unit and the patients were discharged home the same day. They were seen and evaluated in the out-patient clinic 7 days after to identify the circumcision complications and assess early outcome and parental satisfactions. Those whose plastibell rings were yet to fall off were seen again the 2nd week.



Figure 1a: Plastibell (hollister)



Figure 1b: Clamping of the prepuce after dorsal penile nerve block

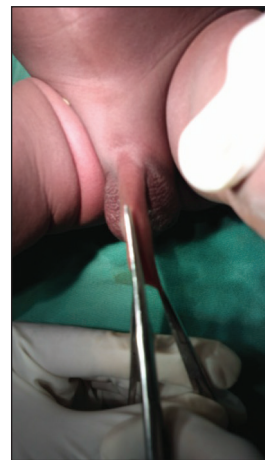


Figure 1c: Dorsal slit

Statistical analysis

Data were obtained and entered into a structured proforma and analyzed using Statistical Software Package for Social Sciences (SPSS) version 17.0 for windows (SPSS Inc, Chicago, Illinois, USA). Association between complication and parents' satisfaction was explored using Chi-square test while ANOVA was used to determine the significance of



Figure 1d: Application of plastibell ring



Figure 1e: Tying over the plastibell ring



Figure 1f: Immediate post-operative appearance (prepuce excised and plastibell handle broken off)



Figure 1g: Appearance at 2 weeks follow-up

mean difference of age at circumcision between pre-term and term babies while logistic regression was done to determine the effect of age on presence or absence of complications. Statistical significance was inferred at $P < 0.05$.

RESULTS

A total of 337 male neonates and infants were brought for circumcision within the study period of 1-year by their parents. They were aged 2-140 days with a mean age of 18.4 days. There were 20 (5.9%) boys who were delivered preterm but brought for the circumcision at a mean age of 61.4 ± 34.2 days, while the remaining 317 (94.1%) term patients were brought for the procedure at a mean age of 15.6 ± 13.9 days ($P = 0.001$). A total of 335 (99.4%) of the parents were Christians, 1 (0.3%) Muslim and 1 (0.3%) practice Judaism.

The reasons for the requests were culture in 200 (59.7%) babies, religion 122 (36.4%), medical 5 (1.5%) and cosmetic 6 (1.8%). Three (0.9%) boys were brought for the procedure for no reason but to follow the norm and 1 (0.3%) request was sought to reduce promiscuity [Table 1].

On the preferred age for circumcisions, 249 (73.9%) of the parents would prefer circumcisions to be carried out on their boys on the 8th day of life while 19 (5.6%) parents preferred the procedure to be done immediately after birth. Others are as shown in the Table 2. The preference of the 8th day of life is predicated on religious reasons, 'to minimize pain', culture and expectation that umbilical stump must have fallen off by then in 73 (20.9%), 59 (23.7%), 52 (20.9%) and 19 (7.6%). Others are as depicted in Table 3.

Plastibell method of circumcision was known to and preferred by 285 (84.6%) of parents, 30 (8.90%) did not have any preference whatsoever, 15 (4.5%) preferred any good method while 7 (2.1%) preferred the traditional method. On the preferred circumcisionist, 299 (88.7%) preferred doctors to circumcise their boys while 35 (10.4%) and 3 (0.9%) would prefer any trained person and nurses, respectively.

Following circumcision with plastibell on 309 (91.6%) of the 337, only 114 (33.8%) of the children were followed up for at least 1-week to determine the outcome and acceptance among parents. Plastibell fall

off time ranged between 1 and 20 days with a mean duration of 3.79 days. Complications were neither reported nor observed in 92 (80.7%) after a week of follow-up. Complications were seen or reported in 22 (19.3%) of the patients of whom only one patient (0.7%) had a severe event in form of urethral injury [Table 4]. The effect of age at circumcision on presence or absence of complication was not significant ($P = 0.85$). Parents assessed the outcome as excellent in 35 (30.7%), very good in 52 (45.6%), good in 21

(18.4%) and poor in 6 (5.3%). Parental satisfaction is influenced by the presence or absence of complication ($P = 0.04$).

DISCUSSION

Male circumcision is a common practice in Nigeria with a rate of 87-90%.^[1,13] It may even be higher among the Igbos of the South-East Nigeria where circumcision is a common practice. The procedure is frequently performed for cultural and religious reasons and rarely for medical reasons.^[8,12-16]

Three hundred and thirty seven circumcision requests were made within a year in our institution with an average of 6.5 requests per week. Perhaps this could have been more but owing to our circumcision schedule which allows us a day each for evaluation/booking and circumcision proper, respectively.

The requests were for children aged 2-140 days, with a mean age of 18.4 days, with a total number of neonates at 282 (84.7%). This is similar to findings by Nnamonu in Jos, Nigeria, where 96% were <28 days.^[8] However Abdu-Rahman *et al.* in Ilorin, Nigeria reported fewer neonatal circumcisions in their study, reason for which was customary.^[12] Preterm babies 20 (5.9%) were brought at a later age than term babies 317 (94.1%) at a mean age of 61.4 ± 34.2 days and $15.615.6 \pm 13.9$ days, respectively, this was statistically significant. The delay in the time of request for preterm babies perhaps may be as a consequence of the time needed for management of these babies for prematurity and its attendant problems.

Even though 335 (99.4%) were Christians, the predominant reason for the circumcision requests was more of cultural in 200 (59%) babies than religious 122 (36.4%) [Table 1]. Culture remains the main indication for male neonatal circumcisions no matter the religious affiliation of the parents.^[12,13] Only 5 (1.5%) parents made their requests on the grounds of perceived health benefits despite the World Health Organization's recommendation that it could be effective in preventing sexually transmitted diseases including HIV.^[1,17] No request was made because of hygiene and this contrasts with the findings by Xu and Goldman in Australia where 77.9% were for hygienic reasons.^[4] Cosmesis was considered paramount in six patients and a baby was brought on the grounds that it reduces promiscuity, drawing parallel to the major reason female genital mutilation is still carried out in some climes.^[12,18] Three babies (0.9%) were brought by the parents for circumcision without any known reason but for the

Table 1: Indications for circumcision

Indications	Frequency (%)
Religion	122 (36.2)
Culture	200 (59.3)
Medical	5 (1.5)
Cosmetic	6 (1.8)
To reduce promiscuity	1 (0.3)
Nil reason	3 (0.9)
Total	337 (100)

Table 2: Preferred time for circumcision

Time of preferred circumcision	Frequency (%)
Birth	19 (5.6)
8 th day	249 (3.9)
9-28 th day	39 (12.2)
Umbilical detachment	15 (4.5)
Post-neonatal	11 (3.3)
No response	4 (1.2)
Total	337 (100)

Table 3: Reasons for choosing circumcision on the 8th day

Reason	Frequency (%)
Religion	73 (29.3)
Tender age	1 (4.0)
Less pain	59 (23.7)
Religion + less pain	1 (4.0)
Grandmother instruction	2 (8.0)
Biblical	2 (8.0)
Umbilical detachment	19 (7.6)
Culture	52 (20.9)
To mature better	1 (4.0)
No reason	4 (5.6)
No response	25 (10.0)
Total	249 (100)

Table 4: Complications

Nature of complication	Frequency (%)
No complication	92 (80.7)
Urethral injury	1 (0.7)
Bleeding	6 (5.3)
Retained plastibell	2 (1.8)
Other complications	13 (11.4)
Total	114 (100)

fact that it is done. This is much less than the finding by Osifo in which 7.7% of parents were unaware of the reason for circumcisions.^[19] Perhaps the reason for this smaller number is because the study sampled parents who were already seeking for the circumcision on their infants.

The 8th day of life was the most preferred age for circumcision in 249 (73.9%) [Table 2]. This was predicated on varied reasons [Table 3], with religion being the most cited reason for the choice of 8th day. This could be traceable to the first mentioned circumcision in the Holy Bible in genesis 17 verse 12 when God instructed Abraham to circumcise on the 8th day.^[20] Nineteen (5.6%) parents prefer the procedure to be done immediately after birth, this they believe would obviate the pain of the procedure even though studies have established that neonates feel pains.^[21,22]

The plastibell technique is well known to and preferred by 84.6% of the parents. This is much higher than those seeking for the circumcision in sub-urban Lagos in which 41.5% preferred plastibell.^[15] Perhaps this higher knowledge and preference for plastibell is because it has been the routine technique in NAUTH, Nnewi and awareness might have been widespread.

Doctors were the most preferred circumcisionists by 88.7% of our clients, while 10.3% and 0.9%, respectively, preferred the nurses or any other trained person to circumcise their boys. Osuigwe *et al.* reported fewer complications with the doctors who circumcise at the teaching hospitals than other providers of this service.^[23] This agrees with the findings by Okeke *et al.* that circumcision performed by nurses were met with more complications compared to those performed by doctors.^[13]

Plastibell circumcisions were finally carried out on 309 (91.6%) of the boys, but only 114 (33.8%) of the babies were brought back for evaluation and follow-up. This low compliance to follow-up may not be unconnected to our previous routine of not requesting for follow-up reviews after circumcisions except there is an event. It may also be due to parents' reluctance to comply to follow-up visits especially when there are no complications. Spontaneous plastibell fall off occurred between 1 and 20 days with a mean duration of 3.79 days. Only 2 (1.8%) cases of impacted plastibell ring were observed [Table 4] both of which were manually removed with ease as an office procedure after cleaning with Chlorhexidine and Cetrimide solution which aside from serving as an antiseptic, also functioned

as a lubricant. Previous reports of complications from plastibell circumcisions are variable ranging from 0.19% to 26.8%.^[6,10,13,24-26] Complications were reported or seen in 19.4% of the 114 children [Table 4] that were brought for follow-up, most of which were minor events that resolved spontaneously. Our figure appears to be on the high side of reported figures and could perhaps be as a result of the possibility that those that came back for follow-up were those who had concerns while majority of those who had no event did not comply with the follow-up schedule. Secondly, circumcisions in our unit are performed only by the doctors with varying experiences from senior house officers to consultants. The only major complication was a case of urethral tear following separation of the prepuce which was repaired primarily with 5/0 polyglactin-90 and healed well. Primary haemorrhage mostly due to glandular injury occurred in 6 cases (5.3%) all of which were arrested by pressure. The glandular and meatal ulcers healed nicely after conservative care. As against previous reports that retained plastibell is the most common complication such was not our experience, it was seen in only 2 (1.8%) patients.^[24] This may be attributable to careful selection of appropriate sizes of plastibell and firm knotting of the thread over the plastibell ring which would cause early ischaemia and sloughing off of the skin distal to it.

The final outcome was acceptable to 94.7% of parents in terms of cosmesis while 6 (5.3%) assessed the outcome as poor. These were parents of the children that had glandular injury, retained plastibell and wound infection. Parental satisfaction was influenced negatively by the presence of complications ($P = 0.04$).

CONCLUSION

Culture is a major indication for circumcisions in our setting while religion is a major influence on when it should be performed. There is widespread awareness, preference and good acceptance of plastibell technique of circumcision among our clients and they prefer doctors to perform the procedure. This underscores the import of proper training of doctors at various levels who perform circumcisions to further reduce the incidence of complications following the procedure.

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Conflicts of interest

There are no conflicts of interest.

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