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# Circumcision: Perspective in a Nigerian teaching hospital

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## ABSTRACT

**Background:** The practice and pattern of male infants circumcised is influenced by culture, religion and socio-economic classification. The debate about the benefits and risks of circumcision has made a hospital-based practice the most acceptable. Objective: The objective of this study is to evaluate the ages, indications, co-morbidity, types and methods of circumcision, usage and mode of anaesthesia and outcome of male circumcision at a tertiary health centre in Nigeria. **Materials and Methods:** A retrospective review of male circumcision in a paediatric surgery unit was done from January 2002 to December 2007. The data was analysed using SPSS software version 15. **Results:** There were 438 boys with age ranged between 6 days and 10 years (median 28 days, mean 53.6 days standard deviation 74.2). Neonatal circumcision (<29 days) was 201 (46%) and 318 (72.6%) of the children were circumcised by the 3rd month of live. Religion or tradition were the major indicators in 384 (87.7%) patients while phimosis 38 (8.7%), paraphimosis 4 (1%), redundant post circumcision skin 10 (2.3%) and defective prepuce in 2 (0.5%) were other indications. Plastibel™ (PD) was used in 214 (48.9%), classical circumcision 194 (44.2%), guillotine technique (GT) and Gomco™ 10 (2.3%) cases each while 10 (2.3%) had a refashioning/re-excision post previous circumcision. There was an increase in use of PD, drop in the use of GT; and increase in the number of circumcision done over the years. Only 39.7% had anaesthesia administered and complication rate was 6.7%. **Conclusion:** Neonatal circumcision was highest in the hospital-based circumcision practice, which allowed the expected ideals in the use of devices in a tertiary health centre. However, the low rate of anaesthetic use is unacceptable.

**Key words:** Anaesthesia, circumcision, hospital-based practice

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## INTRODUCTION

The practice of circumcision is age-long and wide spread art that was conducted by local surgeons (Mohens, traditional circumcisionists, Rabbis), but became part of orthodox medical practice by 17th century.[1] This refined the practice in terms of safety, relief of pain, prevention of complications and improved aesthesis. Whether or not circumcision is a necessary 'assault' has led researchers to review the pros and cons and hence suggested alternatives.[2-5] There is a reducing trend in circumcision practice in Europe and Australia[6,7] however, where religion and culture are indicators as in our subregion, there is no decline in incidence, rather hospital practice is modified to give quicker, safer and less painful service with good functional and cosmetic outcome.[2,8-10]

Medical problems arising in the uncircumcised state and a likelihood of higher cost of circumcision in the post-neonatal period have recently been revisited to support the need for early circumcision.[11,12] Advocacy for wider practice of male circumcision in sub-Saharan African based on the reported reduced relative risk of HIV infection transmission among circumcised men is on-going.[13,14]

We review the practice of circumcision in a tertiary health centre in the north-central geopolitical zone of Nigeria, highlighting age at presentation, indications, techniques and outcome. The aim was to educate the circumcision practitioners.

## MATERIALS AND METHODS

This retrospective study reviewed the paediatric surgery unit and theatre registers for all cases of circumcision from January 2002 to December 2007. The ages, indications, co-morbidity, technique of circumcision, usage and mode of anaesthesia and outcome were documented. The data was analysed by using the

statistical package for social sciences software (SPSS) version 15 and *P* value was set at <0.05.

## RESULTS

A total of 438 boys whose age ranged between 6 days and 10 years (median 28 days, mean 53.6 ± 74.2 days). Neonatal circumcision (<29 days) was the highest 201 (46%), though 318 (72.6%) of the children were circumcised by the 3rd month of life [Table 1]. The indications were religious or traditional practice in 384 (87.7%) patients, phimosis 38 (8.7%), paraphimosis 4 (1%), redundant post circumcision skin 10 (2.3%) and defective prepuce in 2 (0.5%) patients. There were 12 (2.7%) cases of associated patent processus vaginalis. 416 (95%) boys had various types of circumcision technique (classical circumcision [CC] 194 [44.2%], Plastibel™ [PD] 214 [48.9%], guillotine technique [GT] and Gomco™ [GD] 10 [2.3%] cases each), while 10 (2.3%) had refashioning/re-excision of the prepuce post previous circumcision. There was an increase in use of PD and drop in the use of GT [Figure 1] and there was an increase in the number of circumcision done at our centre over the years (2002-2007) [Figure 2].

174 (39.7%) children had a form of anaesthesia during circumcision. The types of regional anaesthesia used were dorsal penile block 74 (16.9%), ring block (RB) 52 (11.9%), caudal block (CB) 10 (2.3%), general anaesthesia (GA) in 38 (8.7%) cases. Mode of anaesthesia in 264 (60.3%) patients was not stated either because they were not given at all or the procedure was inadequately documented. From the record, many of younger age groups circumcision was conducted without anaesthesia which is statistically significant with a *P* value of 0.00 [Table 2].

The complications recorded were reactionary haemorrhage 10 (2.3%), migration of PD to the shaft or adherence to glans 8 (1.9%), wound infection 6 (1.5%), buried penis 2 (0.5%), skin bridge 2 (0.5%). No penile gangrene, fistula or amputation was recorded. The procedure was mainly done by senior registrars in the unit who also supervise the junior doctors. Post circumcision visits were arranged for the 3rd day on the

**Table 1: Age groups at circumcision of the children**

| Age groups (days) | Number of patients | Percentage of total |
|---|---|---|
| <29 | 202 | 46 |
| 29-90 | 160 | 36.6 |
| 91-180 | 23 | 5.2 |
| 181-365 | 29 | 6.6 |
| >365 | 24 | 5.6 |
| Total | 438 | 100 |

**Table 2: Tabulation of age groups against the type of anaesthesia given during circumcision**

| Age groups (days) | Anaesthesia types | | | | | Total |
|---|---|---|---|---|---|---|
| | General anaesthesia | Ring block | Dorsal block | Caudal block | Not stated | |
| <29 | 2 | 30 | 34 | 2 | 126 | 194 |
| 29-90 | 0 | 19 | 30 | 4 | 102 | 155 |
| 91-180 | 0 | 2 | 5 | 2 | 12 | 21 |
| 181-365 | 16 | 1 | 4 | 2 | 3 | 26 |
| >365 | 20 | 0 | 1 | 0 | 3 | 24 |
| Not stated | 0 | 0 | 0 | 0 | 18 | 18 |
| Total | 38 | 52 | 74 | 10 | 264 | 438 |

Pearson's Chi-square = 149.1, *P* = 0.000

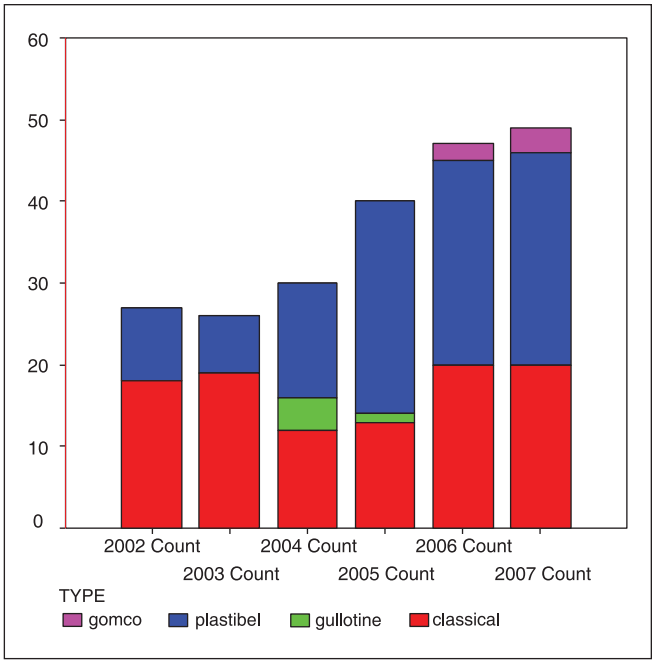



**Figure 1: Proportion of circumcision methods over the years**

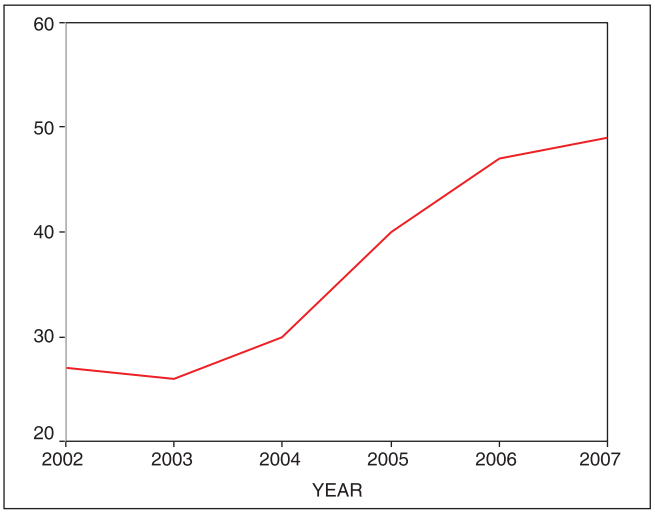



**Figure 2: Yearly increment in the number of cases (2002-2007)**

ward and the 9th and or the 16th day in the out-patient clinic.

## DISCUSSION

The practice of circumcision in our environment has been driven mainly by religious injunction and art in terms of when, where and by who varied according to the background of the parents and socioeconomic factors.[1-8,15] A community based study showed that though, more than 72% of children were delivered in a hospital set-up in Ilorin, less than half of the recruited children (48%) were circumcised in the hospital and the procedure was equally performed by traditional circumcisionists and the health-care personnels (mainly family physicians and nurses) with complete excision of the prepuce.[15] Circumcision is often left in the hands of the junior staff as a minor procedure with attendant high complications which may cost the patient his entire social life, in years to come.[9,10] Senior registrars conduct the procedure in our unit to prevent complications and to teach the junior doctors, medical students and nurses rotating through the unit. The needs for caution and promotion of safety in circumcision should always be emphasized.

Neonatal circumcision in this study though higher than what is practiced at the community level; it is still lower than what is obtainable in the USA and Israel.[16] Many of the children had been circumcised by the 3rd month of life which probably may be due to the parents' background many of whom are elites and probably had delivered in the teaching hospital or have a relation working in the hospital. This is consistent with Abdur-Rahman's study[15] in which early circumcision were conducted before resumption of the 3 months maternity leave by mothers. The varying methods of circumcision offered allowed the parents to have informed choice and consent and also enabled training of medical students and postgraduate surgical trainees and nurses. The use of GD is also fast though slower than PD, the patients would not need to carry any ring for some days as done with PD. The devices (GD or PD) afford ease of home care by parents. Many of the doctors in Ilorin metropolis are not familial with GD as this was revealed by Popoola *et al*.[17]

A study showed that the complication rate was higher with PD than CC in older patients and recommended PD use for neonates; our experience does not support this view.[18] Rightful selection of size and fixing without excessive tension on drawn prepuce reduces shaft migration and adherence to glans penis.

Abdur-Rahman's[15] community study demonstrated that PD used mainly by family physicians caused penile torsion and this suggest that attention has to be paid to the orientation of the glans and meatal vertical slit in relation to the dorsum of the penis during application of the PD.

Many have insinuated that local infiltration of anaesthetic agents makes the wound to bleed, delay wound healing and may render the child impotent (personal discussion), hence the regional block we offer is discouraged. There is no proof for these and a study may be needed to evaluate this. The ultimate goal of a paediatric surgeon is to ensure robust professional care of all the children needing surgical service in terms of affection, safe anaesthesia and analgesia and appropriate evidence based procedure. In spite of the use of Senior Registrar, the low use of anaesthesia in this study is worrisome and unacceptable. This is brought about partly by 'regulation' that all forms of anaesthesia including regional blocks should be conducted by anaesthetists in the teaching hospital. Furthermore, the incompetence of the junior doctors in giving the anaesthesia needed is another factor. The old assumption that children (especially neonates) do not feel pain has long been disproved and the immediate and long term effect of pain in children have been reported and our practice should therefore change.[19,20] Topical anaesthetic, e.g., EMLA® (prilocaine-lidocaine) cream, Dorsal nerve block and a subcutaneous RB are options, though, the subcutaneous RB may provide the most effective analgesia, all these forms are cheap.[21] The current recommended standard is balanced anaesthesia for all procedures, which in the case of circumcision includes a combination of GA, CB and adequate perioperative and post analgesics which can be commenced with acethaminophen suppository at induction or immediately post operation. It is true that this will increase the cost of the circumcision, which currently ranged between N1000 and N1500 naira ($6-9 USD) to about N7000 and N8000 Nigerian naira ($40-45 USD) to pay for GA, intravenous fluids and parenteral drugs. This cost can be subsidised for children or spread among them in a way that the cost is minimised since the procedure is short and consumables are likely to be minimal. The community based study revealed that many parents patronised local/traditional circumcisionists because it is free or paid for by philanthropists, hence group/congregation circumcision with its hazards is rampant.[15]

Since circumcision is a cultural and religious affair, the National Health Insurance Scheme can bank roll the cost so that our children can have safe circumcision

and their health is promoted. This will serve as a social service by the government and will assist religious practice; promote the health of the nation and eradicate circumcision mishaps.

The nurses and midwives still have a big role in counselling mothers about safe circumcision practice during antenatal and post natal clinics and at the community level. The practitioners in the hospital and at the community level including the nurses/midwives can be appropriately trained and re-trained to ensure that a complete package of safe surgery and anaesthesia are provided at circumcision. It is important that those who practice circumcision become sufficiently skilled at the technical aspects of the procedure so that complications can be minimised. Those performing circumcision should be adept at suturing to ensure that haemostasis can be secured when necessary and that skin edges can be brought together if they should separate widely.

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