

## Original Article

# Circumcision in Infants and Neonates with or without Local Anesthesia

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## ABSTRACT

**Objective:** To find the simplest, fastest and safest method of local anesthesia for circumcision to suit a large number of neonates and infants attending the accident and emergency department.

**Setting:** The Accident and Emergency (A&E) department of Al-Adan Hospital, Kuwait.

**Methods:** Two surgeons performed circumcisions for children from the age of one month to 7 years. Children less than one year (n = 90) received a subcutaneous ring

block.

**Results:** Those children who had their circumcision done under local anesthesia showed less physical changes and pain response.

**Conclusion:** Circumcisions done under local anesthesia is a far more humane approach than surgery without any anesthesia. Subcutaneous ring block is a simple, fast, effective and safe technique to provide pain relief in neonates and infants undergoing circumcision.

KEYWORDS: circumcision, subcutaneous ring block

## INTRODUCTION

Circumcision is the most common surgical procedure performed in children<sup>[1]</sup>, especially infants and neonates, primarily due to religious reasons. The other indications are medical<sup>[2]</sup> and parental desire<sup>[3]</sup>.

Circumcision was performed without any anesthesia for more than a thousand years and the practice still continues in many parts of the world<sup>[4]</sup>. Family physicians and pediatricians have strong supportive data against the old belief that infants and neonates do not feel pain during minor procedures<sup>[5]</sup>, and preliminary studies show that children who undergo painful circumcision have subsequent behavior changes though these are usually ignored<sup>[6]</sup>.

Nowadays, for any surgical procedure, preoperative preparation includes pre-and post-operative patient comfort. Though pre-emptive analgesia is becoming a routine preoperative technique, circumcision without anesthesia has not yet been reviewed in this regard<sup>[4]</sup>. We strongly believe that circumcisions must be done either under local or general anesthesia irrespective of the age of the child, and the old belief that neonates and infants do not feel pain should be discarded<sup>[7]</sup>.

In our Accident and Emergency (A&E) department, since 1992, we have performed 15,695 (8.6%) circumcisions in 11 years out of 181,245

general surgical cases. Our policy has been to give general anesthesia for the children above the age of nine months and no anesthesia if the child was nine months or younger. In 2002, a detailed analysis showed that the total number of circumcisions done for children aged between one month and seven years was 1105 while the number of children below one year of age was 989. Circumcisions for these children were done without any anesthesia and they constituted 90% of the total. Their age distribution is shown in Fig. 1.

The main bulk of neonates and infants were between one to three months of age (Fig. 2). Among this age group, majority (70%) were Kuwaiti nationals, while the rest (30%) were Non-Kuwaiti (Fig. 3).

We felt that circumcision without anesthesia is a very painful and inhumane approach. Therefore, we decided to use local anesthesia for children below the age of one year from October 2002 while other surgeons continued the old practice of circumcision without local anesthesia.

## PATIENTS AND METHODS

All children were divided into two groups. Those above one year, underwent the procedure under general anesthesia while those under one year of age had the circumcision done under local anesthesia using subcutaneous ring block (n = 90)<sup>[8,9]</sup>.

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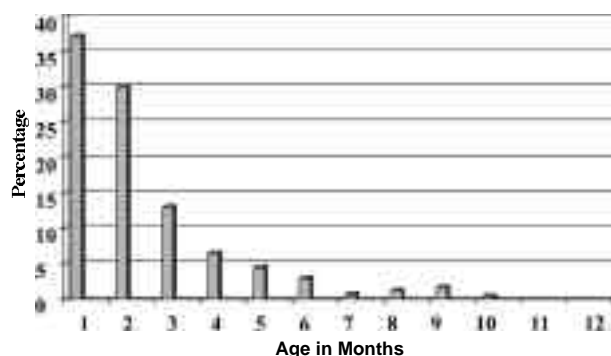


Fig. 1: Distribution according to age in months and percentage

In the minor operation theatre, the baby was attached to a physical digital monitor for observation of pulse rate, blood pressure, respiratory rate and oxygen saturation by pulse oxymetry. Facial expression and crying time were compared for changes from the base line resting child. All children were observed for half to one hour postoperatively for their response to their mother and feeding.

We advised follow up the next day or after a few days postoperatively but failed to ensure compliance due to parental non-cooperation as their other circumcised siblings had no follow up in past. They were advised to report any abnormal swelling, bleeding or urinary symptoms, but as there was not a single recall, we presume that there were no complications.

## PROCEDURE

The neonates and infants were kept fasting for 3-4 hours preoperatively. A paracetamol suppository was inserted half an hour before the procedure. On the table, the injection site was cleaned with an alcohol swab and local anesthesia was given using one ml of lidocaine (1%). By this injection a small weal was produced at the base of the dorsal part of penis at 1 and 10'O clock positions and through it the needle was further forwarded till its entire length for continuous infiltration to a complete 360-degree block. The operative site was surgically scrubbed and draped using standard antiseptic solution. By this time (3-5 minutes), the local anesthetic was acting to produce a block. The circumcision was performed using the circumcision clamp (Winkelman' circumcision clamp from Aescalup). If the baby occasionally cried, we used the pacifier to keep it calm<sup>[10]</sup>. The cause of this occasional crying was probably the strange atmosphere and uncomfortable position rather than the pain, which could be assessed, by facial expressions and changes in vital signs. Post operatively, the baby took the feed without distraction and crying.

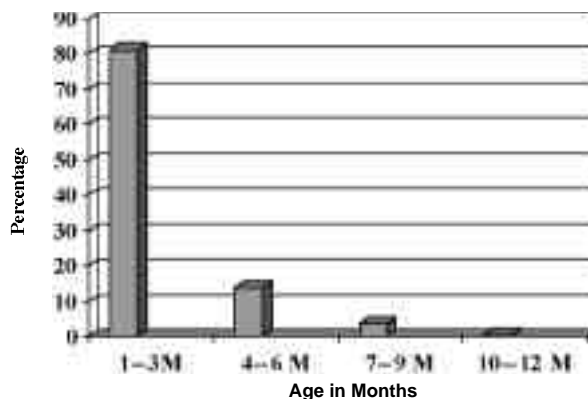


Fig. 2: Distribution according to age groups

The complications we noticed were: (1) a small hematoma at the injection site in four cases which resolved spontaneously within a few hours and, (2) a swelling at the ring block site that sometimes caused difficulty for application of a small size clamp (no. 5). Here, we switched to a bigger size clamp (no. 6).

## DISCUSSION

Circumcision is mostly performed on infants and neonates but surgeons do not routinely use local anesthesia, as it is parent's wish in our social setup. Majority of our patients were between 1-3 months of age. The subcutaneous ring block was a very easy and effective way of providing analgesia. As we were using very small needles (sizes 26-27-G) for local anesthesia infiltration, it was minimally painful.

Our study clearly demonstrated that bulk of neonates and infants had circumcision without anesthesia. This is a very painful procedure (the child is screaming, passing urine, stool, holding breath, turning bluish red, and forcefully struggling for escape)<sup>[5]</sup>. On comparing clinical parameters on the monitor, we noticed that without anesthesia, the pulse, BP, respiration and pulse oxymetry changes were very significant<sup>[11]</sup>. However, when local anesthesia was used properly, the pulse did not change significantly, the pain was minimal and the baby stayed quiet. More so, they were completely quiet after the procedure, and took the feed without distraction (as compared to those who had circumcision without anesthesia who kept on crying continuously during their feed).

## CONCLUSION

Circumcision is definitely a painful procedure<sup>[12]</sup>. The subcutaneous ring block is a simple technique causing almost no pain (if given cautiously), and can be easily taught to junior doctors without complications<sup>[13]</sup>. We strongly recommend subcutaneous ring block technique using lidocaine

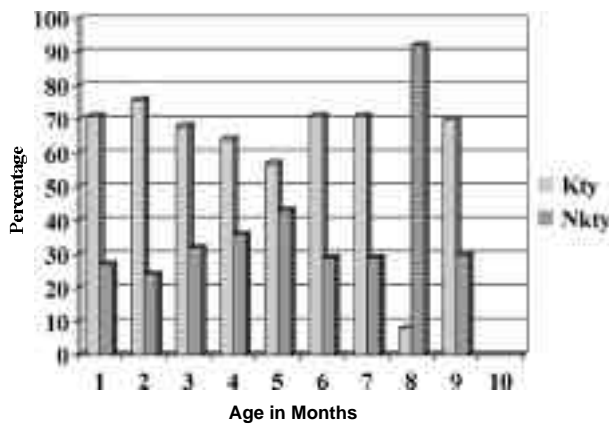


Fig. 3: Distribution according to nationality  
Kty = Kuwaiti, Nkty = Non-Kuwaiti

(1%) for children below one year of age undergoing circumcision. It is a fast, easy and painless procedure with no significant complications. It is ideal in our setup where we have very busy emergency operation theatre.

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