

## NEONATAL CIRCUMCISION: WITH OR WITHOUT ANAESTHESIA

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### ABSTRACT

**Objective:** To determine the pain experience during circumcision in a newborn child and its comparison when some form of anesthesia is used versus when no anesthesia is used during the procedure.

**Study Design:** Prospective study.

**Setting & Duration:** Department of Surgery Unit I, Baqai Medical University and Aga Khan Day Care Centre, Karimabad and from May 2008 to August 2008.

**Methodology:** During twelve weeks prospective study a performa was developed using the FLACC scoring system and observation are recorded and then analyzed. New born male babies up to 12 weeks of age and up to 5 kg of weight are included in the study. Total 148 children were circumcised during the twelve week study period and three groups of newborn babies were formed i.e. group one, where circumcision was performed using topical anesthesia (48 babies), group two, where circumcision was performed under ring block (47 babies), and group three where no anesthesia was used (53 babies). Children were selected randomly for each of these groups and circumcision was performed by plastibell method. The pain experience of every individual baby was recorded on to the Performa using FLACC scoring system and the results were then compared.

**Results:** By comparison of FLACC scores of three groups of children it was found that the severity of pain in group one and in group two where topical anesthetic cream and ring block using 1% xylocaine with insulin syringe were used as a mean of anesthesia is almost the same i.e. 7.7 and 8.01 respectively while FLACC scores in group three where no anesthesia was used are slightly higher, 7.85 than group one but lower than group two.

**Conclusion:** Circumcision in a newborn child may be performed with ease and comfort by using plastibell method even with out any sort of local anesthesia or analgesia.

**KEYWORDS:** New Born Circumcision, FLACC Scoring, EMLA Cream, Ring Block, Anesthesia/Analgesia

### INTRODUCTION

Circumcision is the surgical removal of foreskin from the glans penis and is performed throughout the world but mandatory in Islamic world where every child should be circumcised under religious obligation and the earlier, the better. The medical benefits of newborn circumcision include a decrease in the number of infant urinary tract infections<sup>1</sup>, protection against penile cancers<sup>2</sup>, protection against HIV infection<sup>3</sup>, and protection against transmission of human papilloma virus.<sup>4</sup> Even

in the western societies it is being said that, on the basis of existing data, circumcision has more potential benefits particularly in the later life than harm.<sup>5</sup>

Complication rate of newborn circumcision is reported to be approximately 20% or 1 out of every 476 male infant circumcised<sup>6</sup> and the most common reported complication from the procedure includes bleeding, infection, adhesions and injury to the glans.<sup>7</sup> Practices for pain management during newborn circumcision have been inconsistent and there are different perceptions among surgeons as to whether newborn experience pain during circumcision or not. For the very same reason current hospital practices do not consistently manage or minimize pain and distress during the procedure. Although there are numerous professional organizations that support the use of analgesia during circumcision<sup>8,9,10,11</sup> but such practices have not been universal. There are no formal guidelines available regarding uses of anesthesia/analgesia for the most frequently and widely performed surgical procedure throughout and especially

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in the Muslim world. In our country the procedure is being performed not only by the trained general and pediatric surgeon but others like gynecologist, paediatricians, general practitioners and even the quacks are also performing procedure according to their knowledge and belief, therefore it can be said that newborn circumcision is the most commonly performed surgical procedure without any standardization.

### Background

Despite the universal awareness of new born pain there are health care workers who believe new born circumcision is not a procedure that require analgesia or anesthesia. Such beliefs are due to the concept that the new born do not feel or remember the pain of the procedure.<sup>12</sup>

The four main type of anesthesia/analgesia used during the new born circumcision include:

1. Concentrated oral sucrose solution
2. Topical anesthesia (EMLA)
3. Ring block
4. Dorsal penile nerve block (DPNB)

Concentrated oral sucrose is recently being used for pain management.<sup>13</sup> A concentrated oral sucrose solution of 24% is more effective at reducing crying and grimacing during newborn circumcision.<sup>14</sup> Topical anesthetic cream (EMLA) has been used to reduce pain of circumcision and found effective.<sup>15,16</sup> Ring block by subcutaneous infiltration of 1% xylocaine is another method for reducing pain during circumcision and is found more effective than Dorsal Penile Nerve Block.<sup>17</sup>

### METHODOLOGY

As the pain management during circumcision is quite controversial and haphazard this study is carried out to score the severity of pain during circumcision with and without anesthesia and to remove the confusion as to whether there is any advantage of using anesthesia or not during the newborn circumcision. The study is carried out in surgical unit I of Baqai Medical University and Aga Khan Day Care Centre, Karimabad from May 2008 to August 2008. The severity of pain for every individual child during the procedure recorded by using

FLACC scoring system.<sup>18</sup> The FLACC chart has five categories with gradings from 0-2 i.e. Face (0-2), Leg (0-2), Activity (0-2), Cry (0-2) and Consolability (0-2) which result in a combined total score of 0-10. The FLACC scoring system is clinically approved for the detection and management of pain occurring as a result of illness or procedures in children under the age of three years. The higher the FLACC score the more intense is the pain. The FLACC table was provided for each individual child undergoing circumcision and observations were recorded.

Three groups of new born male children with similar weight and age were formed. In group one (48 babies) the circumcision was performed after the application of topical anesthetic cream (EMLA). In group two children (47 babies) the procedure was performed using ring block by infiltrating 1% xylocain subcutaneously while in group three (53 babies) circumcision was performed without the use of any anesthetic mean. The FLACC score for each of these three groups were recorded and compared for the severity of pain during the procedure.

### RESULTS

The FLACC scores of group one is 7.7, of group two is 8.01 and of group three is 7.85. It is obvious from these values that the difference in severity of pain is insignificant in infants who receive some form of anesthesia during the circumcision to those infants who did not received any anesthesia. The FLACC score is rather slightly higher in group two where the procedure was performed under the ring block by subcutaneous infiltration of 1% xylocaine (Table I).

### DISCUSSION

By having a look on the average FLACC scores it is found that there is negligible difference in severity of pain in all of these three groups whether the circumcision is performed with or without anesthesia. In our study the average FLACC score in group two children is higher than the other two groups which do not support other studies<sup>19</sup> which found the ring block to be the most effective method of anesthesia for new born circumcision. When the ring block is used during circum-

**Table I. Type of Anaesthesia and FLACC Score**

Groups	No. of Children	Type of Anaesthesia	FLACC Score
One	48	Topical Anaesthetic Cream (EMLA)	7.7
Two	47	Ring Block	8.01
Three	53	No Anaesthesia	7.85

cision the pain scores may also have been influenced by the length of time the surgeon is waited for the block to take effect before performing the procedure. The higher FLACC score in group two children may be due to the injection prick and the introduction of local anesthesia and the other reason of higher FLACC scores in this group seems to be the fact that the child starts crying and limb activity is increased even before the actual procedure is started therefore the slight advantage of anesthesia is lost in the beginning and the procedure become rather more difficult and uncomfortable for both the surgeon and the child himself. The FLACC score is slightly lower in group one where topical anesthetic cream is used and the finding is consistent with a study by Taddio (1997) and Benini (1993) who found topical anesthetic cream to be effective to reduce pain during newborn circumcision. But the difference is so slight that it outweighs the advantage as the topical anesthetic cream is not only very costly but is not available easily everywhere in this country. The second disadvantage of using topical anesthetic cream is that it require some time to be effective at all and the time is a rare commodity for surgeons specially in an OPD setup so the slight advantage is lost again as is the case with ring block.

### CONCLUSION

The study is carried out to remove some misconceptions and confusion as to whether anesthesia should be used or not during the neonatal circumcision and advantage and disadvantage of its use during the procedure. Despite the frequency with which the procedure is being performed no procedural guide lines are available any where in the world. The use of anesthesia for neonatal circumcision is still controversial because it is not proved beyond doubt that whether newborn experience pain or not during the procedure and if yes how severe is that and if there is any advantage of using anesthesia to alleviate the pain during the procedure. Similarly here in our country circumcision is being carried out without any standardization.

One of the commonly used methods of anesthesia for neonatal circumcision is ring block which is one of the effective method but not the most effective method. The topical anesthetic cream is also used during the procedure but its cost and difficulty in availability limits its use most of the time. As far as the severity of pain during the procedure is concerned it does not differ much whether ring block or topical anesthetic cream is used for circumcision or the procedure is performed without any means of anesthesia. Therefore if the circumcision is performed by sufficiently trained specialist it does not matter if any sort of anesthesia is used or not

during the procedure, instead the procedure performed with out anesthesia is slightly less painful than using a ring block which in its own merit is more discomforting and causes severe pain and irritability even before the procedure is started and some times leads to the formation of a large unwanted haemotoma which is really very annoying for both the surgeon as well as for the parents also.

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