

Plastibell-A Quick Technique to Decrease the Distress of Neonatal Circumcision

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Circumcision remains the most common operation performed on males in many parts of the world. The pain management for this procedure proves to be helpful but not perfect. It was noticed that by reducing the time of completion of the procedure the suffering of the neonate was reduced during circumcision. I described my experience and technique of plastibell circumcision. Which was done safely, in a shorter period of time in spite of being performed by a single handed operator. The study was conducted at Lady Willingdon Hospital Lahore, including the technique and the results of the neonatal circumcisions that were performed by using the plastibell in all of them. In Eight months, 100 plastibell circumcisions were performed. The total distress time was 3 to 4 minutes. The overall complications was 2% and consisted of mainly bleeding and infection which were managed without major consequences. The use of the plastibell seems to be superior technique for neonatal circumcision. It provides excellent cosmetic results with few and mild complications.

Keywords: Neonatal circumcision, plastibell, single handed procedure.

Circumcision is an operation in which the foreskin is removed. This procedure has been known and widely practiced since ancient times.

Circumcision is being carried out for different reasons such as religion, culture or due to medical indications. The procedure used to be performed at any age with different techniques, e.g. Gomco clamp, plastibell, Mogen clamp or free-hand surgical technique.

The current pain management for neonatal circumcision (e.g. Emla Cream) is helpful but not practical, and perfect pain management for this painful operation has not yet been discovered. I believe that time factor is important, the shorter the duration of the procedure the less the suffering the neonate.

Methods

Neonatal circumcision is accomplished by trained and experienced clinicians. Pre-operative requirements include the administration of Vitamin K, informed consent, infant feedings are avoided for at least one hour before the procedure and the infant's penis and scrotum are carefully examined to identify if there are any abnormalities like hypospadias or other contraindications presents.

Technique.

In preparation for circumcision, the infant is restrained on the operation table. I used dorsal penile nerve block in all cases. Under aseptic conditions the procedure is commenced by: Dilating the preputial ring by curved hemostat avoiding the urethral meatus, the foreskin is peeled backwards to be separated from the glans up to the coronal sulcus taking care not to traumatize the frenulum. This can be assisted by blunt peeling movement using a piece of gauze. Alternatively the dorsal edge of the foreskin can be grasped with a straight mosquito hemostat while a second curved hemostat is used to lyse the tissue plane which should be introduced dorsally until the corona

is reached, the tip of the hemostat should always tent the foreskin to avoid entering the urethral meatus. The hemostat is then opened and rotated to the right and the left to free the foreskin from the glans.

Then the foreskin is pulled forward to cover the glans, the foreskin is grasped with two mosquito clamps at the 10 o'clock and 2 o'clock position and a third straight mosquito clamp is used to crush the distal part of the foreskin for the dorsal slit. The string is placed around the penis and the first throw of a simple square knot is made, a straight mosquito is used to catch one limb of the string to be used as a hinge at the time of tightening the first throw of the knot. The appropriate sized plastibell device is inserted carefully using a sliding movement. The string is adjusted to fit in the plastibell groove by the fingers of the right hand (dominant hand) while the two mosquitoes and plastibell handle are held by the left hand (non-dominant hand). Tightening the knot around the foreskin and plastibell device in the groove can be carried out by pushing the straight mosquito by the index finger of the right hand (dominant hand).

The second throw of the square knot is completed, the handle of the plastibell is broken off the device and the excess foreskin is trimmed from around the bell using iris scissors.

A short period of observation (up to 4 hours) is suggested to check for bleeding and the infants ability to urinate. The parents are provided with instructions, the area can be gently cleansed with soap and water if it is soiled and to see the doctor if there is any significant bloodstain on the diaper, if the plastibell device has not fallen off within 10 days or if signs or symptoms of infection develop.

Results.

During the period between November 1999 to June 2000, neonatal circumcision using plastibell technique was

performed for 100 male newborns with few complications (Table I). Circumcision was performed by using dorsal penile nerve block in all cases.

Unanesthetized circumcision, as a painful experience, has been found to cause several physiological changes, (e.g. heart rate, respiratory rate, transcutaneous oxygen concentration, plasma cortisol level). However, I did not measure any of these parameters. I depended only on the subjective data such as facial expression and the crying time of the newborn baby at the time of circumcision.

I found that the total distress time is from 3 to 4 minutes. The overall complication rate was 2%, bleeding in 1 patient (1%), and infection in 1 patient (1%). Bleeding was detected a few hours after the procedure and was managed by applying a second string over the first one. Localized infection of the wound was managed with the usual wound care and local antibiotics. I found less complication rate if neonatal plastibell circumcision was performed in the first week of life and before discharging the mother home after delivery. None of the neonates had major complications or a long-term problem.

Table I- Complications of plastibell circumcision in newborns.

Age	No.	Postoperative complications		
		Bleeding	Infection	Others
12 hrs to 7 days	80	-	-	-
1 wk to 4wks	20	1	1	-

Discussion.

Circumcision is the most common operation all over the world, e.g. it has to be carried out to almost every male in Pakistan. Therefore, circumcision deserves more effort and consideration in order to make it safer and less painful. In this regards I would like to stress the point that circumcision is a very minor procedure and any medical person can be experienced to do it.

Theoretically, to be effective, the EMLA Cream would have to penetrate the outer epidermis, dermis, dartos muscle, mucosal lamina propria, the fused inner prepuce, mucosa/glans penis mucosa, and the glans lamina propria to anesthetize the free nerve endings of the glans penis. Clearly, it does not. The dorsal penile nerve block is inadequate because the ventral surface of the penis is also innervated by the perineal branch of the pudendal nerve. Penile ring block anesthesia in newborns could be effective but with high risk of complications-mainly bruising and haematoma formation.

Really, I do not appreciate very much difference regarding pain relief in newborn circumcision with or without the use of the current methods of anesthesia and until an ideal and acceptable method of pain management is discovered, I believe that one way to help to reduce the pain and suffering of the male newborn during circumcision is to have the procedure to be performed as quickly as possible by an experienced surgeon.

The need for assistance in adjusting and tying the string over the plastibell while the operator holds the plastibell and the foreskin with his two hands is the common and usual way of performing this procedure. However, I find that it is better and faster if the operator can do the procedure alone.

In conclusion, I can no longer make the assumption that the effects of circumcision pain are short-lived and clinically insignificant, also I think that the current pain management for neonatal circumcision could be approved to be helpful but unfortunately not perfect.

The long term result of newborn circumcision is uniformly good. Until the discovery of an ideal method of pain control for neonatal circumcision, I believe that neonatal circumcision deserves a well trained person to perform it efficiently by any safe method of circumcision, such as plastibell technique, using any of the available methods of pain management and by doing it as quickly as possible.

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