

COMPARISON OF COMPLICATIONS OF CIRCUMCISION BY 'PLASTIBELL DEVICE TECHNIQUE' IN MALE NEONATES AND INFANTS

Dr. Naresh Bodige

Postgraduate, Department of General Surgery, Deccan College of Medical Sciences.

Dr. Qamesa Ubhathullah

Postgraduate, Department of General Surgery, Deccan College of Medical Sciences.

ABSTRACT

To determine the effectiveness of the circumcision by Plastibell technique comparing the complications among neonate and infant age groups.

KEYWORDS :

Plastibell technique, inadequate skin removal, proximal migration of ring, local superficial infection, bleeding, delayed ring separation

INTRODUCTION

Male circumcision is the surgical removal of the foreskin covering the penis. It is one of the most common operations performed worldwide for therapeutic, protective, religious, cultural or social reasons; The World Health Organization (WHO) manual on male circumcision lists this technique as a proven method with regard to its results and complications. The Plastibell device is a clear plastic ring with a handle. The ring, which comes in various sizes, has a deep groove that runs around the circumference. A cotton thread is usually included in the pack. It is a simple operation in both infants and young children and healing is usually completes within two weeks. Various techniques are available for circumcision, namely Plastibell, Gomco clamp, Mogan clamp, bone cutting method and dorsal slit (open cut) method. Among these, the Plastibell method has become quite popular and seems to be the preferred method especially in the newborn to one year age group. It is a quick, easy, minimally invasive technique with minimal blood loss and minimal complications. It also provides excellent cosmetic results.

METHOD:

Patients were divided into two groups: neonates (0 to 4 weeks) and infants (5 to 52 weeks). The study only included data from healthy infants and infants who underwent plastibell circumcision. In all cases, preoperative evaluation was performed. To avoid vomiting and possible aspiration, parents are advised to stop feeding infants or infants 1 to 2 hours before surgery. Verbal consent was obtained from one of the parents describing all the benefits and adverse effects after the procedure. Records of all patients with congenital abnormalities such as hypospadias, profound jaundice, deranged coagulation profile, extensive skin nappy rash, and other medical conditions were excluded. Expected complications included were inadequate skin removal, proximal migration of the ring, local superficial infection, bleeding, delayed ring separation.

Procedure Of Plastibell Circumcision:

In this procedure, a plastic ring is fitted around the glans and a strong thread is tied around it. The thread will cut off the blood supply to the foreskin, which will eventually die and fall off with the ring in 1 to 2 weeks. Aseptic measures were ensured, local anesthesia in the form of dorsal penile block and ring block using 1cc of lignocaine (1%) in a disposable insulin syringe was administered in all cases. A trained nurse assisted in this procedure. The foreskin was separated from the glans using blunt curved artery forceps and gauze, after which a dorsal slit was made across the foreskin until the corona gland was visible. An appropriate size of Plastibell that fits comfortably in 2/3 of the glans is then placed on the glans and the skin is brought over it. It was then secured with the cotton thread supplied with the plastibell. The foreskin was then trimmed, and the handle of the ring was broken off

(Figure 2). After the procedure, the parents were given oral analgesic drops and topical antibiotic ointment. All neonates and infants were called for the first follow-up after two days and asked to be contacted first in case of any complications. In patients in whom the ring did not dislodge within 1-2 weeks, they were called for a second follow-up and the necrotic foreskin suture was cut and the ring removed with or without local anesthesia. A ring cutter was used to remove the ring (if needed). Complete records of these patients were maintained during follow-up.

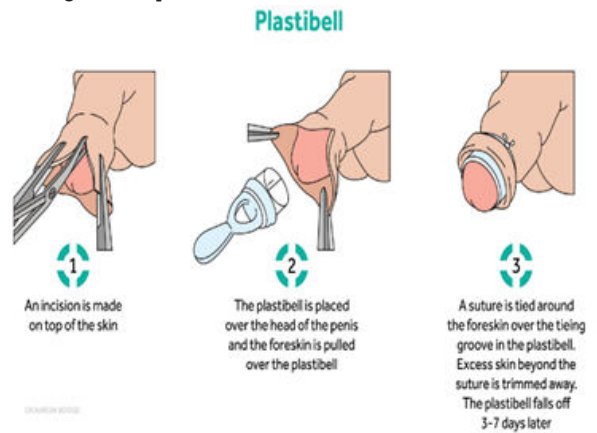


Figure : 1



Figure: 2

RESULTS

During the study period, 150 cases of Plastibell circumcision fulfilling the inclusion criteria were included and analyzed. Out of the total cases, 90 (60%) were neonates, whereas the remaining 60 (40%) were infants. The mean age of the neonates was 14 ± 2 days whereas that of infants was 3.0 ± 0.5 months. Out of the total 150 cases, the successful rate of Plastibell circumcision without any complication was recorded in 126 (84%) cases. The remaining 24 (16%) cases developed minor complications. In neonates, out of 90 cases only 08 (8.8%) developed complications. The most common was delayed separation of the ring, recorded in 03 cases (3.3%). In infants, out of 60 cases, 16 (26.6%) developed complications, the most common was delayed separation of the ring in 6 (10%) cases. According to the comparison of different complications in neonate and infant age groups, delayed separation of the ring was the highest and was recorded in 9 Cases. This complication developed in only 03 of neonates. Other complications included bleeding in 4 cases (2neonate and 2infants) and localized superficial infection in 4 cases (2neonate and 2infants) inadequate skin removal in 3 cases (0 neonate and 3 infants) and proximal migration of ring in 4 cases (1 neonate and 3infant)

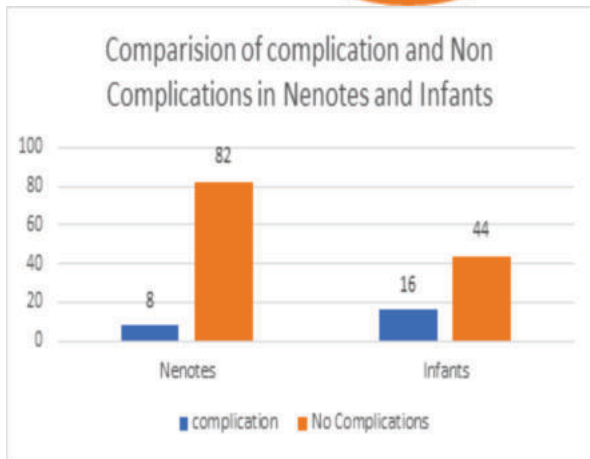
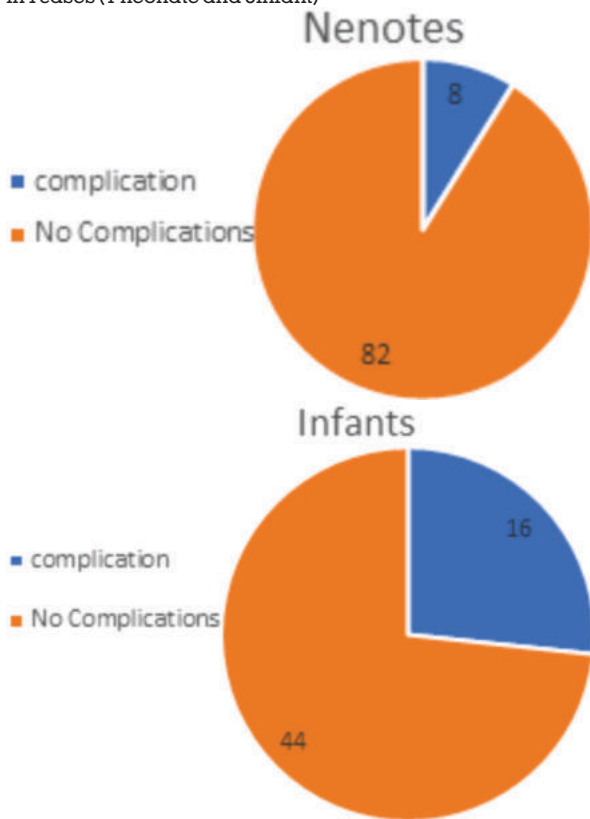


Table: Comparison Of Complications In Neonates And Infants.

Complications	Neonates (n=90)	Infants (n=60)	Total (n=150)
Delayed separation of the ring	3	6	9/150(6%)
Bleeding	2	2	4/150 (2.6%)
Localized superficial infection	2	2	4/150 (2.6%)
Proximal migration of ring	1	3	4/150 (2.6%)
Inadequate skin removal	0	3	3/150(2.0%)
Total	Aug-90	16/60	24/150
	-8.80%	-26.60%	-16%
Average rate of complication		3.16%	

DISCUSSION

Plastibell circumcision techniques have established themselves as an acceptable form of circumcision, particularly in infants to one-year-olds. Complications with this technique are reported to be 2% to 3% (4,6). The most common of which are bleeding and local infection. Other minor complications include dysuria, incomplete dislodgment of the implantable device, proximal migration of the ring, inadequate skin removal, and excessive skin loss. However, case reports of significant complications including necrotizing fasciitis, urinary retention and ischemic necrosis of the glans have also been documented.6 In our study, complications observed were delayed ring separation, bleeding, local superficial infection, proximal migration of the ring, and inadequate skin removal. The average rate of occurrence of any of the above complications in both neonates and infants was 3.16%, which is close to international research. Studies have documented that residual plastic rings usually falls within 10 days of the procedure. Whereas in newborns the ring separates quickly due to thin prepuce and easy sloughing. In the present study, separation of the rings was faster in neonates compared to infants. Of those (6%) whose ring did not separate spontaneously within 10 days, the ligature was cut and the ring was removed. However, close attention is required during the Plastibell technique, to ensure that the ring is properly tightened around the ring to prevent bleeding and the possibility of delayed ring separation. In this study, the Plastibell ring migrated proximally and became stuck in 04 cases (2.6%) and was manually removed. It has been documented that the ring can be too large, resulting in the removal of much of the skin. It may slip or migrate proximally and become trapped on the proximal glans as the glans expand through the ring. Also, an undersized ring can impinge on the glans and cause tissue strangulation and necrosis. Surgeons should be conscious in selecting the correct bell size that fits well in the 2/3 glans. The most studied pharmacological intervention for pain management during circumcision is dorsal penile block by injection of 1% lignocaine and randomized controlled trials have demonstrated its efficacy. Infants premedicated with lignocaine had significantly smaller changes in physiological and pain-related behaviors than infants not given analgesics. In the present study, 90 cases were neonates and combined dorsal and ring block using 1% lignocaine was found to be effective as very few patients felt discomfort and complications after surgery. In our society, the traditional method of circumcision has been practiced for a long time in which a bone cutter is used for homeostasis. It is important to emphasize that the well-known and dangerous complication of partial amputation resulting from trauma to the glans is more common with bonecutter circumcision and should be discouraged.

CONCLUSION:

Plastibell circumcision is easy, safe and quick technique and complications after the circumcision are less in neonates and

infants while the ratio of complications in neonates are minimal compared to infants.

REFERENCES

1. Weiss HA, Larke N, Halperin D, Schenker I. Complications of circumcision in male neonates, infants and children: a systematic review. *BMC Urol.* 2010; 10:2. PubMed | Google
2. Rafiq K. Plastibell-A quick technique to decrease the distress of neonatal circumcision. *Ann King Edward Med Coll* 2000; 6: 412-
3. Khan NZ. Circumcision- A universal procedure with no uniform technique and practiced badly. *Pak J Med Sci* 2004; 20: 173-4.
4. Palit V, Menebhi DK, Taylor I, Young M, Elmasry Y, Shah T. A unique service in UK delivering Plastibell circumcision: review of 9-year results. *Paediatr Surg Int* 2007; 23: 45-8.
5. Manji KP. Circumcision of the young infant in a developing country using Plastibell. *Ann Trop Paediatr* 2000; 20: 101-4.
6. Williams N, Kapila L. Complications of circumcision. *Br J Surg* 1993; 80: 1231-36.
7. Taddio A. Pain management for neonatal circumcision. *Paediatric Drugs* 2001; 3: 101-11.