Original Article

CIRCUMCISION IN BABIES AND CHILDREN WITH PLASTIBELL TECHNIQUE: AN EASY PROCEDURE WITH MINIMAL COMPLICATIONS - Experience of 316 cases

Jan IA *

ABSTRACT:

Introduction: Circumcision is the commonest surgery performed in the Muslims. In our country circumcision is performed by barbers, medical technicians, quacks and doctors including paediatric surgeon. As yet there is no consensus for the best age and method for circumcision.

Aim: To evaluate the safety of various methods of circumcision at different age groups and to suggest the best age & method of circumcision.

Design and Method: A retrospective study was conducted to review the 316 consecutive circumcision performed by the author at Shifa International Hospital Islamabad from June 1998 to September 2001. All babies & children who underwent circumcision by the author were included in the study. Babies having circumcision as a part of hypospadias repair were excluded. Circumcision below two year was done by plastibell under local anaesthesia and circumcision above two years was performed by open technique under general anaesthesia.

Results: Of the 316 circumcisions 227 (72%) were performed in the first week of life by the plastibell. 17 (5%) children had circumcision from 2-12 years of age mostly by open method. Overall incidence of complications was 2 % (7 patients). Two had bleeding from the circumcision site which was controlled by local measures. Bell impaction was seen in two patients at 1.6 years & 3 years age and parents of two babies were concerned about inadequate circumcision. Circumcisions performed in the neonatal period had minimal number of complications.

Conclusion: Circumcision can be safely performed in a hospital set-up within first month of life preferably in the first week if the baby is otherwise well. Plastibell is a safe method for babies under one year. Older children should have circumcision by open method. Plastibell can be a safe technique if performed by trained GPs under aseptic conditions.

KEY WORLDS: Circumcision, Age, Complications, Method.

Pak J Med Sci July-September 2004 Vol. 20 No. 3 175-180

* Dr. Iftikhar Ahmad Jan FCPS, FRCS Ed, FACS, FEBPS
Associate Professor & Head,
Department of Paediatric Surgery,
National Institute of Child Health,
Karachi, Pakistan

Correspondence:

Dr Iftikhar Ahmad Jan
E-Mail: ifti1@cyber.net.pk

* Received for publication: February 23, 2004

Revision accepted: May 26, 2004

INTRODUCTION

Circumcision is the commonest surgery performed in the Muslims. In Pakistan circumcision is performed at all ages from newborn period to adulthood. Most doctors delay circumcisions in the newborn period due to the fear of complications. With the wide spread use of circumcision device like plastibell the operative time has significantly decreased so is the incidence of complications if the basic principles of surgery are practiced[1]. Circumci-

sion performed in the operating theatre shall not take more than 5-10 minute under proper light and anaesthesia. It is therefore suggested that circumcision should be performed in the newborn babies as early as possible if they do not have any other complicating factor. Jaundice is not a contraindication for circumcision; however babies having deep jaundice should be investigated and treated before circumcision is performed[2]. In Pakistan there are no standard criteria for safe practice of circumcision. It is now time that we should adopt standard policies regarding circumcision to avoid serious complication which are frequently seen after circumcision by inappropriate personnel.

PATIENTS AND METHODS

A retrospective study was conducted by the author to review all the circumcisions performed by him in a tertiary care private setup with a view to suggest a best age and method for circumcision. This was an analytic study. Data of all the children who had circumcision was reviewed from June 1998 to September 2001. All the data was computerized and recorded by the author at the time of surgery and follow up in personal laptop computer. All babies having circumcision were included in the study. Babies who had circumcision as a part of other procedure like hypospadias repair were excluded.

Circumcision was considered as any other surgical procedure and was always performed in the operating theatre. Aseptic techniques were ensured while performing circumcision. Babies were examined before circumcision to exclude congenital anomalies and for any other medical illness. Coagulation profile was not performed routinely and history of any coagulapathic state in the family was sought. In babies less than two years the procedure was performed under local anaesthesia using dorsal penile block with lignocaine & bupivacain in half dilution using one ml syringe. Babies over two years age had their circumcision in general anaesthesia with a caudal block for post operative analgesia.

Technique:

In babies less than two years circumcision is performed using plastibell device. Baby is held by the assistant who is seated comfortably at the opposite end of table. The perineal area is cleaned and draped with pyodine solution. An eye towel is used to cover the baby avoiding the face. Dorsal penile nerve block is given using 1 ml syringe with 0.5 ml lignocaine and 0.5 ml bupivacaine at 11 and 1^0clock positions. Prepucial skin is gently retracted over the glans

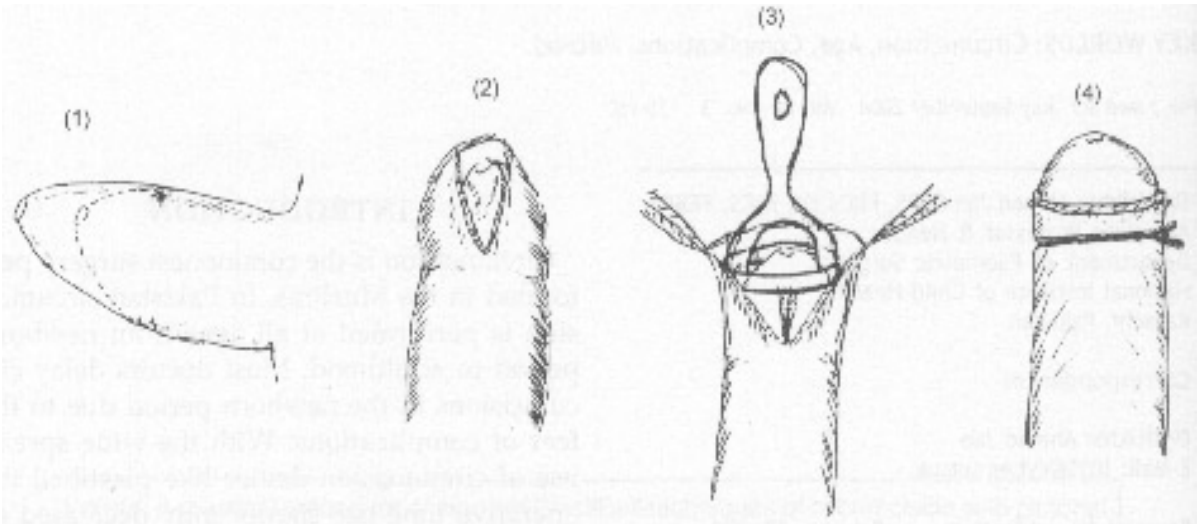

Figure 1. Technique of circumcision by Plastibell

to clean the smegma. If the prepuce is tight ventral slit is given to facilitate retraction of the prepuce. All the attachments between the prepucial mucosa and the glans are gently separated. Two haemostats are then applied to the two lateral edges of the prepucial skin. A straight haemostat is used to crush the ventral prepucial skin which is then cut in midline. A straight haemostat applied to the central part of this cut end. Appropriate size plastibell is inserted and assistant is asked to hold the three haemostats. A silk/polyester suture (provide with the plastibell) is then tied around the groove in the plastibell by strangulating tight knot. Excessive skin is excised along the margins of the plastibell. No dressing is applied and the patient is advised warm sitz bath three times a day for 10 minutes. Baby is allowed home immediately after the procedure and oral paracetamol 10mg/kg is advised for post-operative analgesia. All babies are reviewed after one week for any complications and ensuring detachment of plastibell.

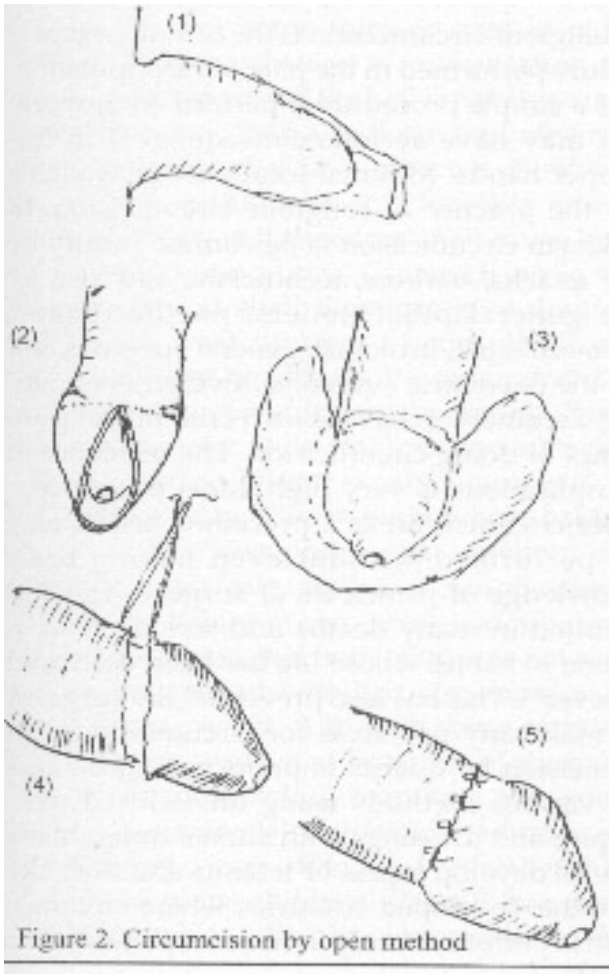

Figure 2. Circumcision by open method

In children over two years circumcision is performed under general anaesthesia. Patient is cleaned and draped as for any surgical procedure. Prepucial skin is mobilized. Circumferential skin marking is performed with skin marker. A circumferential skin incision is made with scalpel avoiding the blood vessels. Bipolar diathermy is used to coagulate the blood vessels. The incision is then completed on the mucosa to excise the prepucial skin. Bipolar diathermy is used to coagulate all the bleeding vessels. Once the wound is dry, interrupted suturing is performed with 4/0 chromic or plain catgut. Wound is covered with polyfax skin ointment. Warm sitz baths are advised for next few days. All patients are reviewed after one week.

Three hundred sixteen (316) babies and children had circumcisions during this period. Out of these 17 (5%) children had circumcision under general anaesthesia; of these 12 patients had circumcision by open method. Other had circumcision as part of other procedures. Three children had circumcision by plastibell along with herniotomy for inguinal hernia. One had orchiopexy along with circumcision by open method. One patient needed lip laceration for which he needed general anaesthesia for the repair and revision of circumcision was also performed on family request.

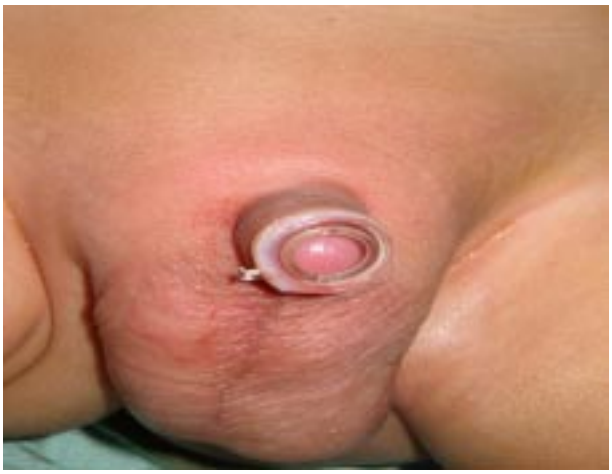
Fig. 3: Circumcision by Plastibell

Two hundred ninety-nine (95%) babies had circumcision under local anaesthesia using plastibell. Of these 227 circumcisions were done in the first week of life. Two hundred forty-one (241) were performed in the first month. Various ages of circumcision are shown in Table-I. It may be noted that maximum number of circumcisions were performed in the first month.

RESULTS

Complication requiring surgeon's reviews were noted in 7 (2%) babies and children. Two had bleeding from the circumcision site. One was 12 years old boy who had circumcision by open method and other 5 days old baby had bleeding from the franular vessels. Both stopped with local measures. One 5 weeks old baby had bleeding from the injection site. It was controlled by local pressure but started again when the pressure was removed. PT & APTT performed were within normal limits. Later after nearly an hour the bleeding stopped spontaneously. Baby was fully investigated but no pathology was found on detailed coagulation profile. Bell impaction was seen in two patients at 1.6 years & 3 years age; both required removal of plastibell under local anaesthesia. Two families were worried about the extra long prpucial skin after circumcision. Both of them were reassured and none of the baby required a revision of circumcision. Swelling of the glans was noted in few babies before the bell was detached however this settled quickly when the bell fell off. Mild blood staining of the nappies with the blood was also reported in few babies on follow-up.

Revision of circumcision was performed in four patients who had circumcision from other places. In one patient revision of circumcision was performed when the inguinal hernia was repaired.

Table-I: Age at Circumcision
n=316

First Week	227	72%
2-4 Weeks	14	4%
1-6 Months	46	15%
6 mo to 1 Yrs	5	2%
1-2 Years	7	2%
2-12 Years	17	5%

Table-II: Number of complications at different ages of circumcision
(n = 316)

	No Complications	*Blee-ding*	*Bell Impaction*	*Excessive Foreskin*
First Week	225	1	1	0
2-4 Weeks	14	0	0	0
1-6 Months	44	1	0	1
6 mo to 1 Yrs	5	0	0	0
1-2 Years	6	0	1	0
2-12 Years	15	0	1	1
Total Number	309	2	3	2

DISCUSSION

Religious circumcision is the commonest procedure performed in the paediatric population. It is a simple procedure if performed properly but may have serious consequences in improper hands. Minimal local data is available for the practice of religious circumcision. In Pakistan circumcision is performed mostly by the quacks, barbers, technicians and also by the general practitioners, paediatricians, gynaecologist, urologist, general surgeons and by the paediatric surgeons[1]. Every person doing circumcision has his own criteria and standards of doing circumcision. The incidence of complications is very high. Most people consider circumcision as a procedure which may be performed without even having basic knowledge of principles of surgery. This has resulted in many deaths and serious complication in babies whose life has been destroyed forever[3,4]. This has also prevented the surgeons to make any protocols for circumcision. Circumcision by quacks is performed at all ages by various methods using unsterilised techniques and dressings with animal dung. Many babies develop sepsis or tetanus and die[3]. Unlike the developed countries where circumcision is performed only in selected patients who

had phimosis or other urinary problems circumcision in our country is performed in nearly all the male population[5]. As it is a religious obligation every male Muslim has to be circumcised, we therefore need to have a system where circumcision could be performed at a time when it would be safe with least number of complications.

Various methods of circumcision are used but the two popular methods are by using either circumcision devices like plastibell or Gomco Clamp and by open method[1,6]. Plastibell Circumcision device has been used with excellent results but may have complications if not done properly[4]. It is mostly because the surgeons fail to understand the basic principle of plastibell circumcision. Circumcision by plastibell needs tight strangulation of the foreskin as it sloughs off by ischemic necrosis of the fore skin. If appropriate size bell is not used or thread is not tight enough to cause ischemia of the foreskin or the skin is too thick as seen in older children then the chances of complication are very high. Beside this if the bell is tightly placed against the glans then also it can migrate on to the glans and can become impacted. Newborn babies have a thin and soft foreskin which comes off easily and therefore shall cause least number of complications. Circumcision in the newborn period shall therefore give the best result with least number of complications. Many surgeons however are not comfortable in performing circumcision in the newborn period and prefer to do circumcision after few weeks of life. There is also concern of haemorrhagic disorders in the newborn babies. Our study however proves that newborn circumcision gives least number of complications. None of the babies in our series had any serious complications. Bell impaction was not seen even in one patient who had circumcision in the newborn period. Although some staining of the nappies was noted but none of the baby had significant bleeding requiring any intervention. In circumcision done in the first week of life the bell comes off in 3-4 days rather than 4-7 days in older children. Parents are most satisfied in babies who had circumcision in the newborn period and there are other family members for help at home because of the delivery of the baby. All these factors make circumcision in the first week a better option rather than waiting for another time when it may be delayed for years. In another study by Christakis DA et al of 13475 circumcisions it was proved that newborn circumcision is safe procedure with minimal complications[2].

Circumcision by plastibell is not an option for children above two years age who have a thick skin. In our experience the maximum numbers of complications are seen if circumcision is performed by plastibell in older children especially after 2 years of age .The skin is thick and bell may get impacted due to erections and prolong stay. In children the best way of circumcision is by open method[7,8]. This has to be done under general anaesthesia and in proper light and observing sterilization principles. Many doctors use bone cutter, artery forceps and other crushing devices blindly. This practice has to be condemned as it is dangerous and may cause amputation of glans with serious consequences. The best method of circumcision is by open technique using skin marking of the incision line, haemostasis by bipolar diathermy and repair with an absorbable suture like plain catgut[9]. Monopolar diathermy should not be used under any circumstances due to the high incidence of gangrene of penis as reported in several studies[10].

The most important consideration about circumcision is that it is a surgical procedure like any other surgery and shall be taken as such. It has long-term implications on the life of the person and therefore it has to be done by the trained personnel in theatre environment. Practice of circumcision in corridors and shop corners should be discouraged. All basic principles of surgery should be ensured while performing circumcision to get the best results. Hepatitis is serious concern in our society and many babies can acquire this dangerous disease if basic sterilization principles are not adopted.

CONCLUSION

In our study it has also been proved without doubt that circumcision can be performed safely within the first week of life if it is carried out in a hospital set-up which has aseptic environment with proper follow-up. Patients selection is however very important. Babies having congenital anomalies, sepsis, deep jaundice or other serious condition should be circumcised when stable. Mild jaundice is not a contraindication as it is seen in many babies and settles spontaneously. It is important to note however that circumcision performed in the first few month of life had minimal number of complications so it may be performed according to the surgeon's preference at any age during this period. Plastibell is suitable for circumcision till one year of age after that plastibell may be used up to two years in children who have a thin foreskin. After two years bell impaction is common and shall be avoided. Open technique gives the best result in children over two years. However, since almost 90% of circumcisions in Pakistan are performed by quacks, unqualified technician, GPs and others, one has to devise and recommend a technique which is least dangerous in the conditions prevalent in the community at large. If neonatal circumcision is performed in the peripheral areas where ideal aseptic conditions are absent, one has to be careful of risk of septicaemia infection and haemorrhage. Training of GPs and family physicians in safe circumcision techniques could be rewarding. Plastibell can be a safe technique if performed by trained GPs under aseptic conditions.

REFERENCES

1. K Rafiq. Plastibell-A Quick Technique to Decrease the Distress of Neonatal Circumcision. Ann King Edward Med Coll 2000; 6-4: 412-3.
2. Christakis DA, Harvey E, Zerr DM, Feudtner C, Wright JA, Connell FA. A trade-off analysis of routine newborn circumcision. Pediatrics 2000;105:246-9.
3. Suleman O. Mortality from tetanus neonatorum in Punjab (Pakistan). Pak Pediatr J 1982; 6 (2-3): 152-83.
4. Ozdemir E. Significantly increased complication risks with mass circumcisions. Br J Urol 1997;80(1):136-9.
5. Baskin LS, Canning DA, Snyder HM 3rd, Duckett JW Jr. Surgical repair of urethral circumcision injuries. Urol 1997; 158(6): 2269-71.
6. Amir M, Raja M, Niaz W. Neonatal circumcision with Gomco clamp - a hospital-based retrospective study of 1000 cases, J Pak Med Assoc 2000; 50(7): 224-7.
7. Manji KP. Circumcision of the young infant in a developing country using the Plastibell. Ann Trop Paediatr 2000; 20(2): 101-4.
8. Sahin F, Beyazova U, Akturk A. Attitudes and practices regarding circumcision in Turkey. Child Care Health Dev 2003; 29(4): 275-80.
9. Wiswell TE, Tencer HL, Welch CA, Chamberlain JL. Circumcision in children beyond the neonatal period. Pediatrics 1993; 92(6): 791-3.
10. Gearhart JP, Rock JA. Total ablation of the penis after circumcision with electrocautery: a method of management and long-term followup. J Urol 1989;142(3):799-801.