ORIGINAL ARTICLE

CIRCUMCISION WITH PLASTIBELL DEVICE: AN EXPERIENCE WITH 780 CHILDREN

Arshad Ali Marwat, Zahid Ahmad Hashmi, Dastageer Waheed
Department of Surgery, Gomal Medical College, D.I.Khan, Pakistan

ABSTRACT

Background: Circumcision of male babies is a common practice in Muslims and Jews. Conventional dissection surgery and circumcision involving plastibell device are the methods most frequently employed. The aim of this study was to compare the complication rate of circumcision with plastibell method in children of younger and older age group.

Material & Methods: It was a prospective study conducted from September 2005 to September 2009 at DHQ Teaching Hospital D.I.Khan. All the babies with age ranging from one month to five years who under went circumcision using plastibell device, as a day case procedure were included in the study. Babies with bleeding disorders were excluded. Patients were followed up for one month in order to note the complications and final outcome of circumcision.

Results: Circumcision using plastibell device was performed in 780 babies. Six hundred & forty-eight (83%) were below one year of age, and 132(17%) were above one year of age ranging from 1 to 5 years. There was significant difference in complication rate in the two age groups, with higher complication rates (21.21%) in older age group as compared to younger age (2.5%) which was statistically significant.

Conclusion: Circumcision using plastibell device is safe and easy method especially in younger age group with lesser complication rate.

Key words: Circumcision, Plastibell device, Complications.

INTRODUCTION

Male circumcision has been performed for more than 5000 years to remove the redundant foreskin of glans. Circumcision is a common and ritual practice among Muslims and Jews and remains one of the most common operations performed. The benefits of circumcision have been recognized in various studies. There is a lower risk of penile cancer and cancer of the cervix uteri in female sex partners.[1-4] The incidence of urinary tract infections is also decreased in circumcised population.[5,6] There is significant drop in sexual transmitted diseases and HIV prevalence in circumcised groups.[1-5]

There are many procedure adopted for circumcision. Conventional dissection method is performed either as a blind procedure (bone cutter method) or open dorsal split method. Circumcision performed blindly with the help of bone cutter, more commonly in remote and rural areas of the country, is a dangerous procedure with high complication rate of bleeding and trauma to the glans. The technique of choice remains controversial.[7,8] Circumcision involving plastibell is safe and easy method especially in younger age group i.e. infants, involving only local anesthesia with few associated complications.[9,10]

The aim of the study was to compare the complication rate of circumcision with plastibell method in children of younger and older age group.

MATERIAL AND METHODS

It was a prospective study conducted from September 2005 to September 2009 at Department of Surgery DHQ Teaching Hospital, D.I.Khan.

All the babies with age ranging from one month to five years who underwent circumcision using plastibell device, as a day case procedure were included in the study.

Bleeding and clotting time were done performed in all the children and those with bleeding disorder were excluded from study. Patients were followed for one month in order to note the complications and final outcome of circumcision.

All the children were full term, healthy, without any medical or urological abnormality. Informed consents were obtained from parents of the children.

The children were divided into two groups on the basis of age, i.e. Younger age group (Below one year), and Older age group (1 to 5 years). Results of the two groups were tabulated and analyzed.

Infants were not fed an hour prior to the procedure. Subjects of older age group were restrained from feeding at least for 2 hours before surgery.

After preparing the operating area with povidine iodine (10%) solution, a dorsal nerve block was administered using 0.2 ml/Kg of 2% lidocaine with a fine gauge needle (insulin needle). In older age group short general anesthesia with ketasol rather than local anesthesia was preferred.

A plastic protective bell (Plastibell) device was placed over the glans and under the foreskin. A suture was placed around the entire foreskin, which would eventually fall off, after necrosis within a few days. (Figures 1–3) The parents of subjects were informed to return if the time of bell separation exceeded ten days.

All the subjected were given oral antibiotic and paracetamol drops for 5 days with application of liberal amount of Polyfax plus ointment and sits bath with providine mixed water twice a day.

All the children were followed for one month. Final outcome and complication rate were noted in both the groups and compared.

RESULTS

Circumcision using Plastibell method was performed in 780 children. Six hundred & forty-eight (83%) were in the younger age group (Below one year), while 132 (17%) in the older age group (1-5 years)

In group 1, all the infants underwent surgery successfully with the help of local anesthesia with 2% lidocain. In most of the subjects recovery was uneventful with complication rate of 2.5%. It was further noted that complications rates were less and separation of bell was quick in under weight babies with thin prepuce skin.

Fig. 1: Picture of a Plastibell device.

Figs. 2 & 3: Showing pictures of circumcision with Plastibell device.

Table 1: Comparison of complication rate between infants and older children.

Type of complication	Group 1 (Infants)	Children 1-5 years
Infection	0	0
Bleeding	0	3 (2.27%)
Hematoma	1 (0.19%)	2 (1.51%)
Excessive mucosa	2 (0.38%)	4 (3.03%)
Delayed falling	9 (1.73%)	17 (12.87%)
Disposition	0	1 (0.75%)
Trauma to glans	0	0
Skin bruising	1 (0.19%)	0
Urethral fistula	0	0
Urinary retention	1 (0.19%)	1 (0.75%)
Total Complications	**14 (2.5%)**	**28 (21.21%)**

In group 2, babies ranging from 1 to 5 years, all the subjects were given general anesthesia. Complication rate was much higher (21.21%) in this group with 12 subjects (9.09%) needing general anesthesia for the second time for dislodgment of plastibell device from glans or control of bleeding.

There was significant difference in complication rate of the two age groups with higher complication rates in older age group (21.21%) as compared to younger age group (2.5%) with $p<0.05$.

DISCUSSION

Routine neonatal circumcision can be a safe procedure,[6] the overall complication rates of the procedure range between 3 to 17%, however in a few studies it is reported to be high as reported by Linus (20.2%).[10] Similarly Mak at el reported overall complication rate between 17.6 to 17.8 and they were comparable in both methods involving plastibell device and conventional dissection.[7] But Fraser et al, compared these two methods in children and concluded that PD procedure is a safe method for circumcising children.[8]

In our study the complication rates are less in infants (2.5%) than in older age group. Main complication associated with PD in the study was the delayed separation of the ring which was extremely low in under weight babies with thin prepuce and easier sloughing, but on other hand more complication rates (21.2%) in older children due to thick prepuce. Patient needed anesthesia for second time for dislodgment of plastibell.

The second most common complication was bleeding which was again higher in older age group.

Only 0.76% babies had redundant mucosa and 0.38% had swelling /bruising due to injection of local anesthetic agent.

As reported in other studies an obvious advantage of using the plastibell was the short surgery time 3-5 minutes, less complication rate, avoidance of serious complications like glans trauma, meatal trauma, post-operative urethral fistula, excessive bleeding and better cosmetic results.[8,10-14]

CONCLUSION

The over all complication rate with plastibell device is lesser in infants as compared to older children. We recommend circumcision by Plastibell device in younger children.

REFERENCES

1. Drain PK, Halperin DT, Hugas JP, Klausner JD, Bailey RC. Male circumcision religion and infectious diseases: an ecological analysis of 118 developing countries. BMC Infect Dis 2006; 172: 1-10.
2. Yagane R.A, Kheirollahi AR, Salahi NA, Bashashati M, Khoshdel JA, Ahmadi M. Late complications of circumcision in Iran. Paedriatic Surgery International, 2006; 22: 442-5.
3. Punyaratabandhu P, Supanvinich S, Tiraput C, Podhipak A. Epidemiological study of risk factors in cervix uteri in Thai women. J Med Assoc Thailand 1982; 65: 231-5.
4. Dhar GM, Shah GN, Naheed , Hafiza, Epidemiological trends in the distribution of cancers in Kashmir valley. J Epidemiology Community Health 1993; 47: 292-4.
5. Peng YF, Cheng Y, Wang GY, at al. Clinical implication of new device for minimally invasive circumcision. Asian J Andorlogy . 2008; 10: 447-54.
6. Christakis DA, Harvey E, Zerr MD , Feudtner C, Wright JA, Connel FA. A trade–off analysis of routine newborn circumcision. Pediatrics 2000; 105: 246-9.
7. Mak YLM, Cho SC, Fai MW. Childhood circumcision; conventional dissection or plastibell device: a prospective randomized trial. The Hong Kong Practitioner 1995; 17: 101-5.
8. Fraser IA, Allen MJ, Bagshaw PF. A randomized trial to assess childhood circumcision with the plastibell device compare to CDM. British J Surg 1981; 68: 593-5.

9. Homan JR, Stussi KA. Adult circumcion. American Family Physician.1999, 59: 1514-8.

10. Okiki Lee, Asinobi AA, Ikuerowe. Epidemiology of complications of male circumcision in Ibadan, Niageria. BMC Urology 2006; 6: 1-3.

11. Essid A, Hamzou M, Sahli S, Hoisa T, Glans reimplantation after circumcision accident. Progress en Urologie 2005; 15: 745-7.

12. Sharman J, BorerJG, Horowitz M, Glessberg KL. Circumcision: successful glanular reconstruction and survival following traumatic amputation. The Journal of Urology 1996; 156 (suppl): 842-4.

13. Baskin LS, Canning DA, Snder HM, Ducket TJW Jr. Surgical repair of urethral circumcision injuries. J Urology 1997; 158: 2269-71.

14. Mousavi SA and Salehifar E. Circumcision complications associated with plastibell device and CDS: a trial of 586 infants. Advances in Urology 2008; 60: 6123.

Address for Correspondence:

Dr. Arshad Ali Khan Marwat
Assistant Prof. Surgery
DHQ Teaching Hospital
D.I.Khan, Pakistan
E-mail: drarshadalimarwat@yahoo.com