

CIRCUMCISION - A COMPARATIVE STUDY

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ABSTRACT

Background: This quasi-experimental study was conducted in department of surgery in Military Hospital Rawalpindi from September 2003 to January 2004 with the aim to compare the results of one of the most commonly performed surgical procedure, circumcision, by open and bone-cutter method in terms of complications such as trauma to glans, bleeding and infection alongwith cosmetic outcome.

Patients and Methods: Total 200 patients were selected from Out Patients Department on the basis of non-probability convenient sampling. After careful history taking and physical examination, patients fulfilling the criteria were identified into two equal groups, one underwent open method circumcision and the other bone cutter circumcision. Parents were instructed to follow up in the surgical OPD after seven days for assessment and earlier in case of any complication.

Results: There was insignificant different in terms of bleeding, superficial infection, cosmetic appearance and trauma to glans (P-value > 0.05).

Conclusion: Both methods proved to be safe and effective techniques with reproducible results but it is important to emphasize that trauma to glans; a well known and catastrophic complication is more common with bone cutter circumcision especially in the hands of an inexperienced operator.

Keywords: Circumcision, glans, cosmetic outcome, haemorrhage

INTRODUCTION

Despite an estimated one-sixth of the world's men having been circumcised [1,2], it has long been forgotten when or why this most intriguing operation began [3]. The procedure has been performed for religious, ethnic and medical reasons, although the last has only become fashionable since the advancement of modern surgery in the 19th-century [4]. In Pakistan, 85%-90% [5] of circumcisions are performed by traditional circumcisers, village barbers, paramedical theatre staff and technicians where operation is performed with no anaesthesia, no sutures, with unsterilized instruments and ashes of burnt wood are used to establish homeostasis, and only 10%-15% have access to a proper medical facility where a doctor performs the circumcision under strict aseptic technique.

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There is not a single study conducted, to compare the results of different methods, either locally or internationally. So out of number of surgical techniques; two commonly used methods were selected to compare the results in terms of complications such as trauma to the glans, bleeding and infection alongwith cosmetic outcome.

PATIENTS AND METHODS

This comparative study was carried out at the Military Hospital Rawalpindi, department of surgery, from September 2003 to January 2004. Two hundred patients were selected by non-probability convenient through the out-patients department for elective circumcision. All healthy male patients, up to 1 year of age, undergoing circumcision only for ritual purpose were included while excluding those with congenital urogenital anomalies, severe neonatal jaundice or moribund conditions and deranged coagulation profile. They were

distributed into two equal groups (n=50). Each patient was subjected to the following investigations, Hb% and PT/PTTK. Lignocaine 2% without adrenaline was infiltrated locally as a ring block round the base of penis in a dose of 1 mg/Kg of body weight to provide local anesthesia.

In bone clamp circumcision, the prepuce was first fully retracted to expose the coronal sulcus and retained smegma removed. The tip of the prepuce was then grasped with two artery forceps and pulled forward over the glans with light traction. A small size bone clamp was placed obliquely across the prepuce distal to the glans and parallel to the corona and the prepuce then divided immediately distal to the clamp with the knife. Clamp was released and inner layer of prepuce was trimmed accordingly. While in open circumcision, prepuce was separated in the similar manner as described above. Three small artery forceps were applied to the edge of the prepuce, one in the midline ventrally, two (side by side) in the midline dorsally. Prepuce was then slit in mid dorsal line between two dorsally placed artery forceps as for as the corona, taking care not to enter the urethra. The redundant part of the prepuce along with underlying inner layer was removed parallel to the corona. In both methods haemostasis was secured with absorbable 4/0 plain catgut with especial attention to frenular vessels

Postoperatively wound was dressed with a thin layer of Vaseline gauze and dry dressing for twenty four hours. Parents were advised to start sitz baths (Luke warm water with few drops of Dettol solution in it) from next morning, twice daily for one week and let the dressing be off at its own. Syrup Calpol (Paracetamol) was advised as analgesic in accordance with the age of the child. Patients were followed up in the surgical OPD after seven days for assessment and earlier in case of any complication.

STATISTICAL ANALYSIS

Data had been entered and analysed using SPSS version-10.0 Pearson Chi-square test was applied to compare the groups and P-value < 0.05 was considered significant.

RESULTS

Bleeding was considered significant when measures, more than simple application of pressure bandage, were required to control the bleeding postoperatively. It remained the commonest complication 10% with open method and 8% with bone cutter (P-value > 0.05). Percentage of patients suffered from local infection, was 8% with open method circumcision and 6% with bone cutter circumcision (P-value > 0.05).

Four percent parents with open method and 2% parents with bone-cutter method. Only 3% parents remained unsatisfied with the cosmetic out come of surgery (P-value > 0.05). One patient had to undergo a re-do surgery. Not a single case of trauma to the glans was found in the study (table).

DISCUSSION

About one-sixth of the world's men undergo circumcision [1,2] for religious, or ethnic and medical reasons. In Pakistan, where 97% population is Muslim by religion, every male has to undergo religious circumcision early in his life. Since long, it has been a common practice that circumcision is conducted by barbars under unhygienic conditions and despite obvious contra-indications. With improvement in literacy rate, the number of circumcisions being performed by the trained doctors is increasing. It is, therefore, of great importance

Table: Bone cutter versus open procedure (n=200).

Procedure	Results (%)			
	Bleeding	Infection	Trauma to glans	Unsatisfactory Appearance
Bone Cutter method (n=100)	8 (8%)	8 (8%)	0 (0%)	2 (2%)
Open method (n=100)	10 (10%)	6 (6%)	0 (0%)	4 (4%)
P-value	> 0.05	> 0.05	> 0.05	> 0.05

to identify the best possible method of circumcision with minimum complications and satisfactory cosmetic outcome in our set up.

Bleeding occurred in 9% patients which remained slightly higher than studies described by Kapila [6] and others [7,8] while close to local studies [9-13]. No significant difference was found between the two procedures ($P > 0.05$). Superficial infection involving skin and mucosa was observed in 7% cases which remained slightly higher than the studies conducted locally [9-13] and abroad [6-8]. P-value remained > 0.05 . It was treated by oral antibiotic (syrup amoxicillin) and acetaminophen (syrup calpol). There was not a single case of trauma to glans contrary to studies conducted by Kaplan [13] and Kapila [6]. Overall the parents were satisfied with the cosmetic appearance of both methods ($P > 0.05$). About 97% parents were satisfied as compared to 99% in a study by Amir M study [9] and only a single patient had to undergo redo surgery.

Both methods proved to be safe and effective techniques with reproducible results provided particular care is taken in exact marking of the site on foreskin for excision in open method circumcision and accurate/careful application of bone clamp. But it is important to emphasize that trauma to glans; a well-known and catastrophic complication is more common with bone cutter circumcision especially in the hands of an inexperienced operator.

CONCLUSION

No significant difference was found between the two procedures in terms of bleeding, infection, trauma to the glans and the cosmetic outcome. The sample size of the study was not large enough to predict that such results represent the true picture of complications. Being a Muslim country, circumcision is one of the commonest elective surgical procedures in Pakistan, so it is recommended that a study should be

conducted at a large level to know the exact outcome of these procedures in our set up.

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