

Bone Cutter Circumcision in Neonates

Prospective Analysis

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Abstract

Background: Bone cutter is widely used in the Middle east area to cut the prepuce during circumcision. Settings: Al-Yarmouk Teaching Hospital and a private surgical clinic.

Aim of the study: To assess the safety of circumcision using bone cutter.

Methods: Over 6 years period from Jan. 2000 till Dec. 2005, one hundred twenty one male neonates were circumcised under general anesthesia (GA) using bone cutter.

Results : One hundred twenty one male neonates were included in this study. The mean operative

time (MOT) was 6 minutes, mean time of healing (MTH) was 5 days, 7 cases (5.9%) developed early & late complications, 2 (1.7%) had bleeding, 3 (2.5%) developed infection, 2 (1.7%) developed late complications in the form of meatal stenosis.

Conclusions: Bone cutter circumcision is feasible with a relatively lower complication rate and Shorter MTH and MOT.

Key words Bone cutter. Circumcision. Healing. circumcision complications.

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Introduction

Circumcision is the removal of the prepuce by the request of the parents for social & religious reasons ⁽¹⁾. It may also be performed for therapeutic reasons as in Phimosis, Ballanoposthitis or as a prerequisite to radiotherapy in carcinoma of the penis ⁽²⁾⁽³⁾.

In the Middle East region, Muslim families usually request circumcision of their neonates, infants or children while adult circumcision is infrequently performed and usually in non Muslims ⁽⁴⁾.

The prepuce may be surgically excised by using many methods, surgical scissor ⁽⁵⁾, Bone cutter ⁽⁶⁾, Plastibel ⁽⁷⁾, Gomco or Mogen clamp ⁽⁸⁾. The present paper assesses the outcome of Bone cutter circumcision among a cohort of male neonates.

Methods

Over a period of 6 years (Jan. 2000 till Dec. 2005), one hundred twenty one male neonates were prospectively selected to be circumcised under GA using Bone cutter at Al-Yarmouk Teaching Hospital and a private surgical clinic. The neonates ages range between 4-28 days; a mean of 21 days. As a prerequisite to bone cutter application, the prepuce is fully retracted, any smegma is wiped off and 2% xylocain gel is applied to the glans penis to facilitate easy slipping of the prepuce over the glans.

The Bone cutter is applied to the prepuce and kept clamped for about one minute. Frequently; the bone

cutter itself excise the excess prepuce; otherwise, a scalpel is used to cut the clamped prepuce. Light pressure is applied on the perpendicular axis of the cut edges by using index & thumb until the glans fully released taking in consideration not to disturb the clamped upper & lower margins of the cut. Neither ligation nor suturing is applied. The site of circumcision is circumferentially dressed with sterile gauze ribbon and the two ends of the ribbon are fixed over the Mons Pubis by adhesive plaster. The dressing either falls off spontaneously or removed within 12 hours, a local antiseptic cream is applied to the circumcision site for 3 days to prevent infection. Patients followed up at 4 weeks, 12 weeks, one year, 2 years and 3 years periods.

Results

Hundred twenty one male neonate were included in this study. MTH was 5 days and, excluding time of induction and recovery from GA, MOT was 6 minutes. 7 cases (5.9%) developed complications, 5 (4.8%) developed early complications as follows: 2 cases (1.7%) developed bleeding managed by simple local pressure, 3 cases (2.5%) developed infection treated by local wound care, in 2 (1.7%) cases , infection occurs in neonates who have prominent genital supra-pubic fat pad and in one case (0.8%) it was associated with penoscrotal webbing. Two cases (1.7%) developed late complications in the form of meatal stenosis. It was

also associated with prominent supra-pubic fat pad. No other complications reported (Table-1).

(Table- 1)Post-Circumcision Complications

Complications	N=x	%	Associated anatomical variations
Bleeding	2	1.7	
Infection	3	2.5	Prominent supra-pubic fat pad and peno-scrotal webbing
Meatal stenosis	2	1.7	Prominent supra-pubic fat pad
Total	7	5.9	

Discussion:

Many methods had been proposed to cut the excess prepuce during circumcision. One of the infrequently used is the application of bone cutter. It had been proposed that there is a high rate of glans penis injury especially during clamping; some had even reported accidental amputation of the glans during clamping⁽⁹⁾. It is well known that incomplete separation between prepuce and the glans is normal and common among new-borne, progressing until adolescence to spontaneous separation, at which time it is complete in the majority of boys⁽¹⁰⁾. In this study, full retraction of the prepuce over the glans and ensuring easy slipping by xylocain gel application was considered very necessary before any clamping. The procedure is better performed under GA. Adhering to the mentioned criteria for application of the bone cutter will minimize the risk of glans injury to a negligible extent. This technique of application was found feasible by the authors.

The steady clamping of the excess prepuce for one minute was found helpful in inducing spasm and thrombosis of the dorsal and ventral penile arteries and no need for application of ligature or suturing.

In the present paper, a relatively shorter MOT was reported compared with other techniques⁽⁷⁾⁽⁸⁾. There was no difference in MHT⁽⁷⁾⁽⁸⁾.

Subtle anatomic variations like prominent suprapubic fat pad or penoscrotal webbing may be associated with a higher incidence of circumcision complications⁽¹¹⁾. Out of 7 cases with complications in this study, 5 (71.4%) demonstrated an anatomical variation prior to circumcision in the form of prominent suprapubic fat pad and penoscrotal webbing.

Following circumcision, early and late complications may occur. Bleeding and infection are early complications while of the prominent late complications frequently recorded in the literature are excessive residual skin, excessive removal of the skin, meatal stenosis, penile granuloma, penile rotation and secondary chordee and the rate of these late complications were not different between neonates and older age group⁽¹²⁾⁽¹³⁾⁽¹⁴⁾. The reported rate of complication in this study is significantly lower than that in others⁽⁷⁾⁽⁸⁾⁽¹²⁾. Early post circumcision bleeding occurs in two cases (1.7%). It had been managed by tighten the dry dressing. No ligature application was needed. Circumcision site infection occurs in three cases (2.5%) and had been managed by local application of antibiotic cream. The only late complication reported in this series was meatal stenosis in two (1.7%) cases. It had been managed surgically by later meatotomy under GA. Although meatal stenosis had been reported to be the most common late complication following neonatal circumcision⁽¹⁵⁾, the rate of this complication in the present study was only 1.7%. The frequency of this complication and the need for surgical correction need to be disclosed as part of the informed consent for neonatal circumcision, thus, a careful meatal examination is indicated in any circumcised boy with abdominal or urinary complaints⁽¹⁵⁾. The period of follow up that had been set in this study was sufficient to detect early and late complications.

Conclusions

- Bone cutter circumcision is feasible and relatively safe adhering to the criteria mentioned before.
- A shorter MOT and MHT is reported
- Subtle anatomic variations were determinant in the rate of complications
- The rate of complications was significantly lower than that reported with other methods

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