Bone cutting and heat cautery circumcision

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Introduction
Circumcision is the removal of the foreskin of the penis. The practice of circumcision dates to ancient times. Studies consistently report that uncircumcised male infants are at higher risk for urinary tract infection compared with circumcised male infants. Uncircumcised men are at increased risk for inflammation of the glans.

Aim of the work
The aim of this study was to evaluate heat cautery circumcision and to avoid postcircumcision bleeding and reintervention.

Patients and methods
This prospective, observational study was performed on male patients attending Assiut University Hospital, General Surgery Department, and El-Jaafareya Private Hospital for routine circumcision either as outpatients and/or inpatients; of them, three were haemophilia cases. Bone cutting and heat cautery circumcision was performed. No antibiotics or anti-inflammatory drugs were given as a routine. Postoperative pain was managed with paracetamol or declophin suppositories.

Results
A total of 518 boys were subjected to bone cutting and heat cautery circumcision. Their mean age was 3.31 ± 2.33 years. Complications occurred in 24 cases (4.7%): 13 patients developed inflammatory oedema (2.5%); five patients developed infection (1%); and six cases (1.2%) developed excess skin, which was recircumcised. No bleeding, burn or injury to the glans or urethra occurred.

Conclusion
Bone cutting and heat cautery circumcision is a safe procedure, with no bleeding even in the three haemophilia cases. No sutures are needed. Oedema and infection were minimal and were controlled with medical treatment.

Keywords:
circumcision, heat cautery, safe procedure

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Introduction

Male circumcision is the removal of the foreskin of the penis. In ancient Egypt, circumcision was performed to improve hygiene. Later, routine male infant circumcision was part of the Abrahamic covenants with Jehovah, giving rise to religious circumcisions that continue to this day in the Jewish and Muslim faiths [1,2].

Uncircumcised individuals are at increased risk for inflammation of the glans; this problem rarely occurs in circumcised men [2].

Boys who remain uncircumcised are at a greater risk for urinary tract infection [3]. Circumcision may also reduce the risk of contracting HIV [4,5]. However, occasionally, complications such as bleeding or infection may occur with circumcision [6]. In addition, infants experience pain during circumcision that may continue after the circumcision is complete.

Male circumcision does not appear to adversely affect penile sexual sensitivity or sexual satisfaction [7].

In newborns, the common circumcision techniques are as follows: Gomco clamp technique, Mogen clamp technique, Plastibell technique, dorsal slit technique, and bone cutting (guillotine methods) [8].

Aim of the work

The aims of this study were as follows: first, to evaluate heat cautery circumcision; and second, to avoid postcircumcision bleeding and reintervention.

Patients and methods

This was a prospective, observational study, which was performed in Assiut University Hospital, General

Surgery Department, and El-Jaafareya Private Hospital during the period from December 2013 to December 2014.

Study population

Male patients attending General Surgery Department, Assiut University Hospital for routine circumcision, either as outpatients and/or inpatients, or attending El-Jaafareya Private Hospital as outpatients were included in the study, of whom three were haemophilia cases. Complete blood count, prothrombin time and concentration, bleeding time and haemophilia factors were evaluated in the three hemophilia cases.

Operative techniques: bone cutting and heat cautery circumcision

The procedures were performed under local infiltration anesthesia with lidocaine hydrochloride 1%, which was injected at 10 and 2 o'clock positions at the base of the penis 3–8 min before circumcision in patients under 1 year of age, and under general anesthesia for those above 1 year of age. Retraction of the foreskin was performed by cleaning with povidone iodine solution, and a thin film of lidocaine gel was applied to the glans. The foreskin was grasped with two mosquito forceps, and bone cutting was applied to the foreskin for 1 min. Heat cautery was used to cut the foreskin (using Hilton Electro Cautery Unit made in India by IMPEL SURGICAL CO. (ISO 9000: 2008) company in Gurgaon, volts 50 C/S 5 Amp; works on AC main 220 V only) (Figs. 1 and 2).

Application for the cautery

Before operation, take a suitable point to be used for the particular case. Fix the same in the handle. Plug to the output receptacle and finally connect the apparatus to the main to prepare for use. On switching on, the indicator will light up. Thereafter, press the button on the handle to heat up the electrode; the intensity of heat can be regulated by turning the cautery control knob outlet terminal, which is completely insulated. We use one electrode for each case.

Thereafter, the skin was retracted to show the glans, and a thin film of xylocaine gel was applied to the glans. No dressing was applied. Postoperative pain was managed with paracetamol or declophin suppositories every 12 h, and fusidic acid ointment was used three to four times per day for 2–3 days. Oral antibiotics or anti-inflammatory drugs were not given as a routine. Hot bath was given daily without antiseptic.

Ethical consideration

Oral and written consent for participation in the study was obtained from the parent of participants.

Statistical analysis

Statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 14 (SPSS Inc., Chicago, IL, USA). The results were expressed as mean ± SD or frequency.

Results

The demographic characteristics of the study group is shown in

Types of operation and complications

Bone cutting and heat cautery circumcision was performed for all patients (Table 1). Complications occurred in 24 cases (4.7%): 13 patients developed inflammatory oedema (2.5%), which is reversible; six cases (1.2%) had excess skin, which was re-excised; and five patients developed infection (1%). No bleeding, injury, or burn to the glans or urethra occurred (Table 2).

Figure 1

Heat cautery devices.

Figure 2

(a) Cutting of the foreskin. (b) Circumcised child.

Table 1 Demographic characteristic of the study group

Variable	Number (518) (%)
Sex	Male [518 (100%)]
Mean age ± SD	3.31 ± 2.33 years
Age groups	
≤1	125 (24.1)
>1 to ≤2	127 (24.5)
>2 to ≤3	82 (15.8)
>3	184 (35.5)
Haemophilia cases	3/518 (0.58)

Table 2 Complications in the study group

Complication	*n* (%)
No	494/518 (95.3)
Oedema	13/518 (2.5)
Infection	5/518 (1)
Excess skin	6/518 (1.2)
Bleeding or injury or burn to the glans or urethra	0 (0)

Discussion

Circumcision is a surgical procedure in which the skin covering the end of the penis (foreskin) is removed [6]. The risks of circumcision, either during the neonatal period or in early childhood, are low. It is estimated that the complication rate during the neonatal period is less than 1% [9].

In two studies that included a total of over 200 000 circumcisions performed in US hospitals, the rate of complications during the first month after the procedure was ~0.2% [10,11].

The American Academy of Pediatrics (AAP) recommends that all infants undergoing circumcision have adequate pain control during and after the procedure [11].

Male circumcision does not appear to adversely affect penile sexual function/sensitivity or sexual satisfaction [12]. However, occasionally, complications such as bleeding or infection may occur with circumcision [6].

In our study, reversible inflammatory oedema occurred in 2.5% of cases, infection in 1% of cases and excess skin in 1.2%. However, no bleeding, injury or burn to the glans or urethra occurred in our study even in patients with blood disease.

Conclusion

Bone cutting and heat cautery circumcision is a safe procedure, with no bleeding even in the three haemophilia cases. No sutures are needed. Oedema and infection were minimal and were controlled with medical treatment.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1 Blank S, Brady M, Buerk E, Carlo W, Diekema D, Freedman A, *et al.* Male circumcision. Pediatrics 2012;130:e756–85.

2 Baskin LS. Patient information: circumcision in baby boys (beyond the basics). Up to Date (2015)

3 Schoen EJ, Colby CJ, Ray GT. Newborn circumcision decreases incidence and costs of urinary tract infections during the first year of life, Pediatrics 2000; 105(Pt 1): 789–793.

4 Bailey RC, Plummer FA, Moses S. Male circumcision and HIV prevention: current knowledge and future research directions. Lancet Infect Dis 2001; 1:223–231.

5 USAID/AIDS Mark. Male Circumcision: Current Epidemiological and Field Evidence; Program and Policy Implications for HIV Prevention and Reproductive Health. Conference Report. Washington, DC: USAID, May 2003.

6 Krill AJ, Palmer LS, Palmer JS. Scientific World Journal 2011; 11:2458–68.

7 Blank S, Brady M, Buerk E, Carlo W, Diekema D, Freedman A, *et al.* American Academy of Pediatrics Task Force on Circumcision Male circumcision. Pediatrics 2012; 130:e756–e785.

8 Abdulwahab-Ahmed A, Mungadi IA. Techniques of male circumcision. J Surg Tech Case Rep 2013; 5:1–7.

9 American Academy of Pediatrics. Circumcision policy statement. Pediatrics. 1999; 103:686–693.

10 Wiswell TE, Geschke DW. Risks from circumcision during the first month of life compared with those for uncircumcised boys. Pediatrics 1989; 83:1011–1015.

11 Christakis DA, Harvey E, Zerr DM, Feudtner C, Wright JA, Connell FA. A trade-off analysis of routine newborn circumcision. Pediatrics 2000; 105(Pt 3): 246–249.

12 American Academy of Pediatrics Task Force on Circumcision. Circumcision policy statement. Pediatrics 2012; 130:585.