

Day-case circumcision in an African rural hospital¹

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Received 15 May 1997; accepted 1 June 1997

Abstract

A prospective study of 82 circumcisions performed as a day-case over 1 year at Sololo General Hospital (Northern Kenya) was carried out in order to evaluate the results of our day-case policy. The mean age of the patients was 14.5 years (S.D. \pm 5.8). No complications were observed during surgery and all the patients were discharged home immediately after their operation. Of the 82 patients operated on, 76 (92.7%, 95% C.I., 84.8–97.3%) came for the follow-up after 7 days and only two patients presented with a wound infection (2.6%, 95% C.I., 0.3–9.2%). This study shows that day-case circumcision with a low and acceptable complication rate can be performed even in a rural hospital in a low income country, despite a setting with poor hygienic conditions. © 1997 Elsevier Science B.V.

Keywords: Circumcision; Day-case surgery; Africa

1. Introduction

Circumcision is performed in the absence of medical indications but on religious and traditional grounds, in many diverse cultures such as Judaism, Islam, Aboriginal Australian, tribal African and Christian US [1]. Some complications, such as bleeding, sepsis, urethrocutaneous fistula and meatal stenosis, are well known even where circumcision is performed by qualified medical personnel [2]. The complication rate of this common operation becomes higher when it is carried out by traditional practitioners [3–10]. Sololo General Hospital is placed in Northern Kenya, in a region inhabited by Borana people. All Borana males are submitted to ritual circumcision (called ‘qabanqaba’) usually during adolescence. With the aim of offering circumcision under anaesthesia and in aseptic conditions, the operation has been performed, as a day-case for 10 years, at

Sololo General Hospital even when this has been for ritual purposes. In order to evaluate the results of our day-case policy, we carried out a prospective study of the circumcisions performed in a 1 year period.

2. Patients and methods

The criteria for circumcision were as follows: simple request of the patient (or the parents/caretakers, in case of under-age patient) or presence of symptoms related to the foreskin with evidence of phimosis or paraphimosis.

All the patients (or their parents) were given a date and time for their operation (usually at 8:00). They were starved from midnight the night before. On arrival at the hospital, the patients took off their own clothes and changed into a clean uniform. The patients were not premedicated and, after the usual cleaning of the skin of the penis, anaesthesia was administered by the surgeon. The technique chosen for anaesthesia was a ring block of the penis as described by King et al. [11], using 5–10 ml of 0.5% lignocaine without adrenaline. A subcutaneous skin wheal is made at the ten o'clock

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¹ No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subjects of this article.

position at the basis of the penis. Then the needle is advanced subcutaneously across the patient's penis to reach the two o'clock position. After aspiration to make sure to have not entered the corpora cavernosa, one fifth of the anaesthetic solution was injected to perform the left dorsal penile block. Without removing the needle the eight o'clock position was reached and another fifth of lignocaine is injected. The same thing was done controlaterally. As a modification of this technique, the last fifth of the total amount of the anaesthetic solution was injected subcutaneously around the frenulum, in order to anaesthetise the ventral branches of the dorsal nerves, that are given off early in the subpubic space and supply the ventral surface of the penis including the frenulum [12,13]. Analgesia was checked at approximately 3 min after injection by gentle pinching the skin of the penis with a toothed forceps. Patients were asked to report any kind of sensation or pain during the operation. The same surgical technique was used in all cases. The prepuce was retracted until the tip of the glans came into view. Three fine untoothed haemostats were applied to the edges of the prepuce, one in mid-line ventrally and two on either side of the mid-line dorsally. The under-surface of the prepuce having been completely separated from the glans and the corona, the layers of each flap were excised. Electocautery was not used to coagulate blood vessels. After circumcision four interrupted mattress sutures with 4/0 chromic catgut were placed at 90 degrees (at 3, 6, 9 and 12 o'clock positions) and left with a long tail. The skin between these was approximated by four interrupted mattress sutures. The frenal artery was ligated with a mattress suture. A ribbon dressing was fashioned from paraffin gauze and the four long tailed sutures tied over this [14,15].

Patients were discharged from hospital after a 1 h period of observation. Paracetamol was provided for analgesia in the postoperative period at home. Patients (or their parents/caretakers) were instructed by nursing staff to leave the dressing in place unless it fell off spontaneously. Instructions were given to come back to the hospital if they were in any way concerned and for the follow-up after 7 days.

The patients who came for the follow-up after 7 days were evaluated. The dressing, if it had not already fallen off spontaneously, was removed by cutting the retention sutures. The presence of any wound infection, defined by the discharge of purulent exudate, was recorded. Wound healing assessment was performed according to the following Grading Score (modified from D.C.S. Gough and N. Lawton, 1990 [16]): Grade 0 = raw moist areas on wound or glans; Grade 1 = healed, scabs on wound edge; Grade 2 = healed, no scabbing or crusting. All the data collected were recorded in a database and statistical analysis was carried out using Epi Info, Version 6.02 software pack-

Table 1
Indications in 82 circumcisions

| Indication | n | % | C.I.* |
|---------------------|----|------|-----------|
| Phimosis | 2 | 2.4 | 0.3–8.5 |
| Paraphimosis | 1 | 1.2 | 0.0–6.6 |
| Traditional purpose | 79 | 96.3 | 89.7–99.2 |
| Total | 82 | 100 | |

* C.I. = 95% Confidence intervals.

age (Centers for Disease Control and Prevention, Atlanta, Georgia, US, 1994).

3. Results

In the year from July 1995–June 1996, 82 circumcisions were performed. The mean age of the patients was 14.5 years (S.D. \pm 5.8). The youngest patient was 1 year and the eldest 36 years. The indications for circumcision are shown in Table 1. No complications occurred during surgery. None of the patients complained of discomfort or pain and no supplemental analgesia was needed. All the patients were discharged home immediately after the operation. Of the 82 patients operated on 76 (92.7%, 85% C.I., 84.8–97.3%) came for the planned follow-up after 7 days. One returned after 2 days complaining of slight oedema of the glans. He was reassured and sent back home.

By the seventh post-operative day in 46 out of the 76 patients the dressing had already fallen off (60.5%, 95% C.I., 48.6–71.6%) and two patients presented with wound infection (2.6%, 95% C.I., 0.3–9.2%). The results of the grading of wound healing are shown in Table 2.

4. Discussion

According to several workers, absence of male circumcision increases the risk of urinary tract infection [17], balanitis [18], penile cancer [19–21] and the probability of transmission of syphilis [22], gonorrhoea, chancroid and genital herpes [23]. Although the results

Table 2
Results of grading wound healing at 1 week control

| Grade | n | % | % C.I. |
|-------|----|------|-----------|
| 0 | 14 | 18.4 | 10.5–29.0 |
| 1 | 34 | 44.7 | 33.3–56.6 |
| 2 | 28 | 36.8 | 26.1–48.7 |
| Total | 76 | 100 | |

* C.I. = 95% Confidence intervals.

require cautious interpretation, the lack of circumcision has been even identified as a risk factor for HIV infection in several epidemiological and clinical studies [24–30].

Even though these results cannot justify widespread mass circumcision as a preventive medical intervention [28,31] and despite the fact that some authors consider circumcision without medical reasons as a senseless mutilation [32–34], we think that circumcision undertaken in a hospital should be maintained wherever it already exists, for its potential impact as an interventional strategy to reduce transmission of the above mentioned diseases [5,23].

Consideration also has to be given to circumcision performed by unqualified people in the community. Apart from being burdened by an unacceptable high rate of surgical complications, it can contribute to the spread of blood borne diseases such as hepatitis B and AIDS [35] and tetanus [36]. Hospital circumcision performed under conditions of sterility avoids these risks.

It has already been shown in developed countries that circumcision can be performed in day-case centers with significant financial saving and patient satisfaction [37–41]. In our setting hospital day-case circumcision helps reduce medicalization thus increasing acceptability in the local community and partly avoiding the appearance that it is a Western intrusion into this important custom [4,5].

In conclusion our prospective study shows that day-case circumcision can be performed in a rural hospital of a low income country with a low and acceptable complication rate.

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