Complications of neonatal circumcision: Avoiding common pitfalls in a common procedure

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"When the surgeon pays less than complete attention to the details of this common and straightforward procedure, misadventures are inevitable".[1]

The article on male circumcision: An overview by Dr. P. K. Bhattacharjee,[2] was an incisive review of the topic and we congratulate him for this.

In our practice at the Lagos University Teaching Hospital, Nigeria, we observe a lot of complications from circumcision referred to our center. While routine neonatal male circumcision is controversial,[3,4] this procedure will continue to be performed in many African countries. Therefore, it is eminently important to ensure that the procedure is performed in a safe manner. In this communication, we highlight some of the pitfalls in performing male circumcision and discuss how to avoid them.

ANAESTHESIA

One of the factors that will allow for good surgical technique without the patient struggling or the surgeon rushing for time is good anaesthesia. Circumcision is a very painful procedure. Neonates, just like adults, do feel pain. While general anaesthesia is not contraindicated, local anaesthesia such as eutectic mixture of lidocaine and prilocaine (EMLA) cream or infiltration with xylocaine (without adrenaline because of the end arteries in the penis) as a ring block or nerve block usually suffices.

POSITIONING

Adequate access to the perineum for the procedure requires good positioning. There are many devices to keep the usually restless neonate steady and the patient's perineum well exposed for the procedure; these include the circumstrait, the circumchair, and the circumcision mat, to mention a few. In centers where the circumchair or circumstrait are not available, an assistant is required to hold the child in the dorsal or modified lithotomy position. In doing this, however, the assistant needs to be steady and avoid unnecessary movement during the procedure.

PERIOPERATIVE PREPARATION

Perhaps the commonest complication of circumcision is related to wound infection. Simple washing of hands with antiseptics and strict adherence to aseptic principle can reduce this to a minimum. In some settings in Africa, circumcision is done without sterile gloves, using same blade for multiple patients, and as part of rituals in "initiation schools" with questionable hygienic circumstances as is the case in some part of South Africa where legislation to curb these excesses has not helped.[5] Proper education in this regard is required to remove this avoidable complication. Careful instruction should be given to the mother on the care of the wound.

SURGICAL TECHNIQUE

Some critical points in the procedure when errors of omission or commission could be costly will be highlighted. First, while inserting the artery forceps to separate the adhesions between the glans and the prepuce [Figures 1,2], care must be taken to hold the prepuce with a straight artery forceps at position 12 o'clock and lift it up away from the glans before a curved artery forceps is introduced in-between this plane. This should be done before insinuating the artery circumferentially thereafter; this is to avoid introducing the forceps into the urethral meatus.

Second, the separation should be gentle and limited to the glans at the level of the corona and not beyond it [Figure 3]; this avoids injury to the penile skin and the urethra ventrally [the urethra lies ventrally just subdermal distal to the corona].

Third, if the "guillotine" technique is used [Figure 4]

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DOI: 10.4103/0189-6725.54786

(this method is now obsolete in many centres with the advent of newer techniques), the glans must be pushed proximally before a clamp is applied. A double check to ensure that the glans is not clamped, by palpating the tissue distal to the clamp and estimating its thickness, is advisable.

In the case of plastibell, utmost care must be taken to



Figure 1: Method of picking the prepuce without damage to the urethra

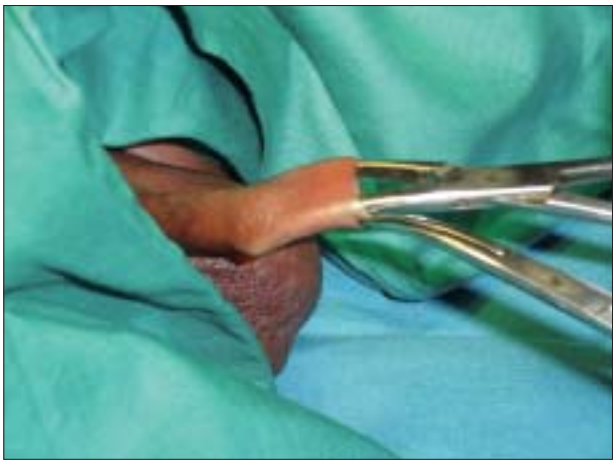


Figure 2: Method of separation of the prepuce from the glans penis

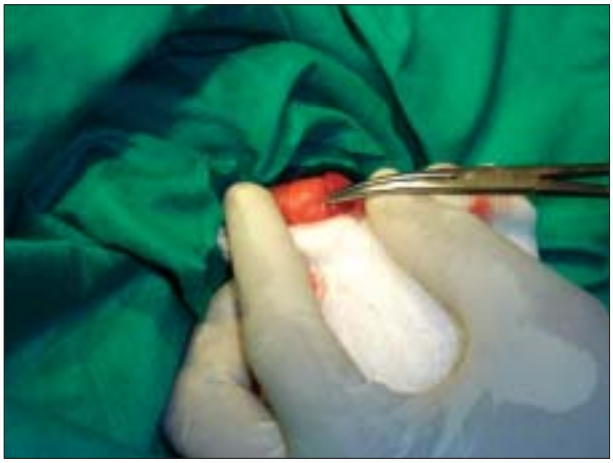


Figure 3: Removal of smegma from around the corona of the glans penis

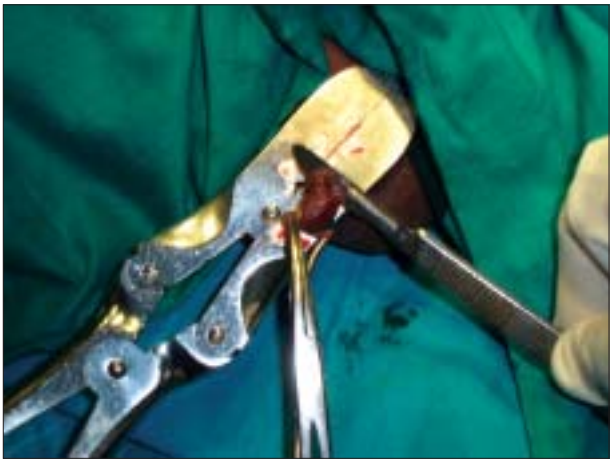


Figure 4: Prepuce being excised after clamping with a bonecutter, after marking the prepuce and care taken to avoid clamping the glans. Note the thickness of prepuce



Figure 5: Insertion of the plastibell after a dorsal slit has been made



Figure 6: Tying of the ligature in the groove of the plastibell. The artery forceps is used to hold the bell in place

use the appropriate size [Figure 5]; to avoid pressure necrosis if a small size is used, or migration if a larger size is used. In addition, clear instructions must be given to the mother about its falling off. Our observation is that the haemostatic effect of the ligature [Figure 6] outlives its use after 24 hours, so it may be safer to remove it at that time. Lastly, the ligature should be properly placed in the groove of the bell.

With the Gomco technique, similar precautions regarding the appropriateness of the size should be ensured. Diathermy must never be used with it, because of the danger of electrical burns.

There are many other devices that are being designed for circumcision and many of them should be used with caution and strict adherence to instructions given by the manufacturers.

Fourth, haemostatic ligature is very important to avoid reactionary haemorrhage; which, quite often, is embarrassing. The most common point of bleeding is the frenular vessels, just lateral to the midline on the ventral surface of the shaft, at the level of the corona. Haemostatic ligature must not be too deep and must be away from the urethra which lies subdermal at this area. Often application of pressure for 5-10 minutes may suffice. The other common site of bleeding is the dorsal vein at position 12 o'clock. A well applied haemostatic suture should stop this bleeder.

Finally, judgement of how much prepuce to be excised to avoid redundant prepuce or over-excision, must be made. This is best estimated at the beginning of the procedure after separating the prepuce from the glans. The prepuce should be pulled over the glans and the corona marked circumferentially with an indelible marker on the outer layer of the prepuce, and this point should be where the excision is performed.

The most common complications that have been referred to us include – urethrocutaneous fistulae, partial amputation of the penis, buried penis and postcircumcision bleeding. Others include implantation cysts, redundant prepuce, and meatal stenosis. These complications can be avoided by taking heed to some of the highlighted suggestions.

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Source of Support: Nil, **Conflict of Interest:** None.