

Catastrophic Complications of Circumcision by Traditional Circumcisers

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Abstract: Circumcision is one of the important public surgeries performed globally. It is a popular non-therapeutic procedure that can be performed by people of various abilities and skills, ranging from trained medical practitioners to non-specialists, depending on their cultural and social backgrounds. Consequently, this surgery may cause varying types and frequencies of complications. Glans amputation and death due to severe bleeding, as a complication of this procedure, are rare, and the patients are left with morbidity and life-long complications. Here, we describe two cases of catastrophic complications due to ritual circumcision (one penile glans amputation and one death).

Keywords: complications, death, penile injury, ritual circumcision

Plain Language Summary

Circumcision is one of the important public surgeries performed globally. It is a popular non-therapeutic procedure that can be performed by people of various ability levels, ranging from trained medical practitioners to non-specialists, depending on their cultural and social backgrounds. Consequently, this type of surgery may cause varying types and frequencies of complications. We report two cases with severe complication after ritual circumcision. The first one was a 5-month-old boy who referred to the hospital with complaints of purulent discharge around the penis and amputation of the distal part of the penis after ritual circumcision two days ago. After resuscitation and bleeding control, the child was treated with intravenous antibiotic, daily debridement and wound irrigation, and suprapubic catheter insertion and planned for future surgical reconstruction. The second case was a 20-day-old baby with complaint of severe bleeding following a ritual circumcision 7 days ago. After resuscitation and bleeding control in the operation room, the patient developed with sudden cardiac arrest and expired. In conclusion, we suggest that the circumcision procedure should be performed at least by a qualified, experienced medical practitioner.

Introduction

Circumcision is one of the utmost public surgeries performed on most newborn infants in Muslim countries as a routine procedure. It is done for several religious, cultural, and medical purposes.¹ Depending on the level of expertise, a variety of complications can occur, ranging from minor loss of penile skin to serious life-threatening complications, such as glans amputation, distal urethral trauma, penile shaft trauma, bleeding, and death.² The complication rate of this type of surgery has been recorded to be between 0.2% and 5%.³ The rate varies according to several factors, including medical comorbidities, type of surgical procedure, anesthesia use, non-professional practitioners, and age of the child.⁴ Partial and/or total amputation of penis and death due

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to this procedure are exceedingly rare, so the report of these complications and outcomes of this procedure requires documentation. We describe two cases of catastrophic penile injury following ritual circumcision in this report.

Patients

Case 1

Parents of a 5-month-old boy took him to the hospital with complaints of purulent discharge around the penis, bleeding, and amputation of the distal part of the penis after ritual circumcision two days ago. A local non-qualified traditional person had used the Mogen clamp technique to circumcise the boy. Before the procedure, no antibiotics were prescribed. It was also done without the use of an anesthetic. The patient's vital signs were unstable when he arrived (blood pressure: 60/30 mmHg, respiratory rate: 28 respirations per minute, pulse rate: 150 beats per minute). He was very pale and agitated. The physical examination revealed total skin loss of the penis that extended to the scrotum and suprapubic region, as well as purulent discharge around the penis and amputation of the distal part of the penis (Figure 1A and B).

The blood test results revealed hemoglobin: 6.8 gm/dL. He was rushed to the operating room for resuscitation, and after general anesthesia, normal saline and packed red blood cell transfusions were started. The urologist first sutured the bleeding site with Chromic 6/0 to achieve hemostasis. There was an attempt to do penile reimplantation, but it was unsuccessful. The child was treated with intravenous Cefazolin (50 mg/kg/day), daily debridement and wound irrigation, and suprapubic catheter insertion and planned for future surgical reconstruction. After 2 days, the parents of the patient decided to leave the hospital without follow-up.

Case 2

A 20-day-old baby was taken to the hospital with severe bleeding following a ritual circumcision 7 days ago. A local unqualified traditional practitioner performed the circumcision utilizing the Mogen clamp technique. No antibiotics were prescribed. It was also done without the use of an anesthetic. On arrival, the patient was in a state of hemorrhagic shock. The patient's vital signs were unstable (blood pressure: 50/33 mmHg, respiratory rate: 32 breaths



Figure 1 (A) Complete skin loss in the whole penis extended to the scrotum associated with purulent discharge around the penis and distal penile amputation. (B) The distal part of the penis was amputated (arrow).

per minute, and pulse rate: 170 beats per minute). He was very pale and agitated. The physical examination of the baby revealed total skin loss from the penis to the scrotum, as well as extensive bleeding from the frenular artery (Figure 2A and B).

The blood investigation revealed hemoglobin: 6 gm/dL. He was rushed to the operating room for resuscitation, and before general anesthesia, normal saline and packed red blood cell transfusions were started. The urology team obtained hemostasis by initially suturing the site of bleeding with Chromic 6/0. Notwithstanding, the patient developed sudden cardiac arrest. Cardiopulmonary resuscitation (CPR) was initiated and continued for one hour, but it was unsuccessful, and the baby died.

Discussion

Complications of circumcision procedure can range from infected wound to penile body amputation in part or entirely. The victims can have long-term physical, psychological, sexual, as well as cosmetic complications.⁵ Furthermore, circumcision in non-clinical settings has been linked to severe complications, including death.⁶

Overall, the complication rate was 0.19% in a study of 136,086 circumcised boys, whereas the rate of serious penile damages accounted for 0.025% of the reported cases.¹ Other series found a higher incidence of complication rates, which was 1.6% with greater seriousness,

accounting for death in five patients when circumcision was performed by unqualified village barbers.⁷ Thus, we can claim that complication rates are much higher when the procedure is performed by non-specialist individuals.

Most boys in Yemen are circumcised before they reach puberty. Even though many surgeons believe circumcision is a minor operation, it is necessary to be performed to avoid serious complications. It seems important to keep track of unexpected outcomes like those described in this study. This is particularly important in places, such as Yemen, where the bulk of circumcisions is made by non-qualified clinicians and the complications of the circumcision procedure are frequently unreported, and it is often impossible to follow up the patients.^{4,8}

The most serious, but uncommon, consequence of circumcision procedure is penile amputation. The severity of penile damage, location of the attack, examination of the patient to ascertain the extent of injuries, assessment of the efficacy of amputated tissues, and the time between injury and patient arrival are all important factors in determining the optimal care choice.⁹ The use of a Mogen clamp with an insufficient release of the adhered ventral prepuce, absence of anesthesia, which leads to poor immobilization, and poor level of experience (unqualified traditional practitioner) are the main factors associated with injuries and penile amputation during circumcision.^{1,9}



Figure 2 (A) Complete skin loss after ritual circumcision with severe bleeding. (B) The penile body after bleeding control.

A previous study showed that approximately eight hours after amputation, the glandular tissue still seemed to be viable.¹⁰ Nevertheless, in our case, the patient was sent to our hospital after two days when re-anastomosis was unachievable. It has come to our attention that the preservation of the lacerated penis should be prioritized in this situation; it needs to be washed with a normal saline solution, then coated with saline-soaked gauze, and put in a sterile sealed bag. Because hypothermia has been shown to delay the ischemic time and the tissue stability, the bag is then immersed in an ice slush bath, with the ice kept away from the penile tissue surface.⁹

Additionally, necrosis after circumcision procedure is an uncommon consequence, which is caused by infection, local anesthetic solutions containing epinephrine, strict packing, and careless cautery usage.¹¹ This occurred in our first case.

There are some debates in pediatric phalloplasty about the indication of age, height, and particularly neophallic development through puberty. As natural genitalia is important for accomplishing a positive penile identification, in particular around puberty, performing penis reconstruction surgery during the childhood period is critical to minimize the emotional impact of this surgery.⁴

Bleeding from the frenular artery or the tissue edges at the incision site is the most common complication after circumcision. Simple history taking is required to avoid significant bleeding or reoperation. To stop delayed bleeding, we need to take care to skillfully coagulate the frenular artery.¹² Ordinarily, bleeding after circumcision procedure is simple to control. It is commonly a slight occurrence that does not necessitate reoperation.⁴ A simple compressed dressing would suffice. In some cases, local administration of epinephrine and lidocaine is needed to obtain hemostasis.

Nevertheless, suturing or using electrocautery is occasionally unavoidable; it is recommended that too many suturing materials or excessive electrocautery should not be used as this may lead to additional complications. Infrequently, if bleeding diathesis is not observed during the routine preoperative assessment, the patient may need a transfusion or intravenous administration of clotting factors.^{4,13}

After severe penile injuries, hypovolemic shock is to be expected, so rapid resuscitation should begin immediately.⁴ Unfortunately, in our case, the patient was referred to our center after 7 days with shock status, and he expired during the operation. It should be mentioned that cardiac arrest was anticipated by our team, but using

general anesthesia was not avoidable because the patient was agitated, and there were no sufficient equipment and no good trained person in emergency room.

Circumcision is often linked to increased morbidity and mortality among the Southern African Xhosa people. Sidley recorded 743 hospital admissions due to septic wounds, 34 expiry cases, and 12 penile damages.¹⁴ Another article by Crowley and Kesner found that 9% of 45 consecutive youths who needed hospitalization after ritual circumcision died.¹⁵

In terms of ritual circumcision and community awareness, Meel investigated the community's view of the procedure in the Transkei sub-region and found that approximately 67% of people were unaware of the risks, while 16% were unsure about any possible danger, and only 17% were aware of the risks associated with ritual circumcision. Additionally, 63% of people preferred ritual circumcision and 13% preferred well-trained medical physicians.¹⁶ Ritual circumcisions became common in places where there were no systems to support those people in need. Furthermore, there have been reports of serious injuries as a result of ritual circumcisions, such as in our previous report, but the government has taken few measures to prevent that sequela.⁴

Conclusion

We suggest that the circumcision procedure should be performed at least by a qualified, experienced medical practitioner. Additionally, we recommend that measures should be taken by the health authorities to train these traditional circumcisers.

Ethics Statement

We declare that our study was approved by the ethics committee of Ibb University of Medical Sciences, Ibb, Yemen. Additionally, written informed consent was provided by the patient's parents to publish the case details and any accompanying images published.

Consent

Written informed consent for publication of these cases, including the publication of the images, was obtained from the patients' parents.

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Disclosure

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