

Complications Of Male Circumcision: A Review Of 39 Cases

F K Rashed, N N Sedeh, D Badebarin, F S Monazzah

Citation

F K Rashed, N N Sedeh, D Badebarin, F S Monazzah. *Complications Of Male Circumcision: A Review Of 39 Cases*. The Internet Journal of Urology. 2013 Volume 11 Number 1.

Abstract

Introduction: male circumcision is one of the most commonly performed procedures in neonates, infants and children because of religious, cultural and medical reasons. Approximately one in three men is circumcised globally. To minimize the possibility of a poor outcome, it is important to know about complications and their management. We report the finding of 39 referral cases referred of circumcision complications required secondary interventions.

Materials and Methods: the documents of 39 patients with circumcision complications have been referred to our department in the period of 2 years (2007-2009) were reviewed retrospectively.

Results: the patients ages were 1 week to 10 year (mean age 24 month). Most common complication was hemorrhage seen in 13 cases (33%) followed by meatal stenosis in 7(18%) and the serious complications were glanopreputial skin fusion and penile amputation each one in 1 case (2.5%).28 cases (71.7%) had been circumcised by General Practitioners.

Conclusion: Circumcision is easy but may be associated with many serious complications and still needs to full training or re-training for both traditional and medically trained providers.

INTRODUCTION

Male circumcision is one of the most common operations that performed in neonates, infants and children because of religious, cultural and medical reasons. About 60% of male newborns in United States in 1992 were circumcised (1). In Muslim countries, all boys have to be circumcised. The possible benefits of circumcision are the reduction of penile cancer risk, urinary tract infections, sexually transmitted diseases and phimosis (2). Complications of circumcision are bleeding, infection, insufficient foreskin removal, excessive foreskin removal, adhesion or skin bridges, inclusion cysts or abnormal healing, meatitis, meatal stenosis, urinary retention, phimosis, chordea, hypospadias, epispadias, urethrocutaneous fistula, necrosis of the penis, amputation of the glans and death. The complication rates of circumcision procedures is from 0% to 16% (median frequency 1.5%) (3). It is a relatively simple, quick and safe procedure when performed in a clinical setting under aseptic conditions by a trained practitioner with proper instrumentation. However such conditions do not always prevail. There are few reliable data on complication rates from male circumcision in clinical settings in developing countries. In this report we describe the finding of 39 cases referred for complications after circumcision that required secondary surgical

intervention.

MATERIALS AND METHODS

The documents of 39 patients with circumcision complications were referred to our department in the period of 2 years (2007-2009) and were evaluated retrospectively. All information about age, method of circumcision, circumcision provider and kind of complication gathered and the frequency of complications were assessed. We excluded patients with inherited bleeding disorders of this study. The study was approved by the Ethics Committee of our University of Medical Sciences for using the patients' information.

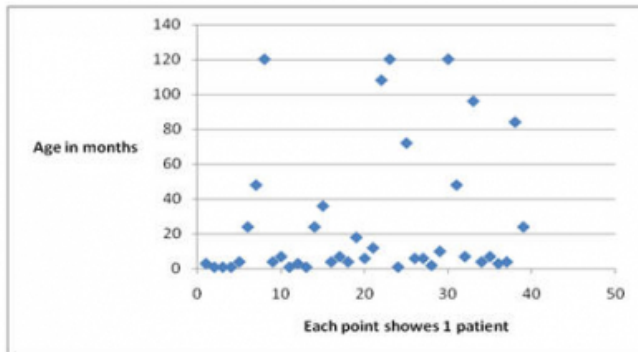
Complications were divided in two groups, minor and major or severe and life threatening. Bleeding without changing hemoglobin, meatal stenosis, incomplete circumcision, hematoma, phimosis and skin bridges were defined as minor complications. Major and severe complications with life threatening sequels included Severe hemorrhage (Hb<7 gr/dl), Urinary retention, penile shaft Urinoma and Circumcision in hypospadias. Penile amputation, Glans and skin fusion, Phimosis, obstructive uropathy (Cr>7 mg/dl), Urethral fistula need for re-surgery or plastic surgery. This study did not included medically managed complications such as infection, or meatitis.

RESULTS

The mean age of patients was 1 week to 10 year (mean age 24 month) (chart 1). Complications were divided in two groups: minor and severe or life threatening (table 1)

Chart 1

Age Distruburion of patients



Most common complication in the minor group was hemorrhage seen in 13 cases (33.3%) (Table1). Two of them were very severe with decreased hemoglobin lower than 7 gm/dl. Other complications in this group were meatal stenosis in 7 cases (18.9%), incomplete circumcision in 5 cases (12.8%). We had 10 cases of severe complications, 3 of them had long life sequels, a patient was referred with penile amputation without a viable distal part ,these patients were managed by homeostasis and suturing the end of corpus cavernous and covering the distal part by speculated urethra to the remaining skin over the corpora. Another patient was a neonate with severe phimosis and increasing Cr to 7mg/dl and this patient underwent repeated circumcisions and his blood creatinine gradually decreased to normal. Another real serious complication was fusion of gland and prepuce with aggressive reduction of penile skin in a reconstructive surgery after separation of glans and skin in which penile skin was repaired by scrotal flaps .From these 39 cases, 28 patients (71.7%) underwent plastibell circumcision whereas 11 patients (28.2%) had classic surgical circumcision. Significantly, in 11 of 13 hemorrhage cases the circumcision was performed using plastibell, while in 2 cases circumcision was performed by classic surgical method. 28 patients (71.7%) had been circumcised by a general practitioner, 10 patients (25.6%) by traditional circumcisers and one by pediatric surgeon (2.5%). Only 3 of them (7.6%) were performed in hospital center and the remaining of them (92.3%) were performed in outpatient situations. In two patients with serious hemorrhage hemoglobin was beneath 7mg/dl. We have also 2 patients

with hematoma, in one of them the circumcision was done using plastibell and in the other by classic reconstruction surgery. In both of them hemoglobin was under 9 gm/dl. We had 7 meatal stenoses of which six were circumcised by plastibell and then 3 phimoses with one of them ending up in obstructive uropathy (Cr=7 mg/dl).

Table 1a

Frequency of circumcision complications in 39 cases

Complication	Number	Percent
Hemorrhage	11	28.2%
Meatal stenosis	7	18.9%
Incomplete circumcision	5	12.8%
minor hematoma	2	5.1%
phimosis	2	5.1%
Skin Bridge	2	5.1%

Table 1b

Frequency of circumcision complications in 39 cases

Severe hemorrhage Hb<7 gr/dl	2	5.1%
Urinary retention And penile shaft urinoma	2	5.1%
Circumcision in hypospadias	2	5.1%
severe Penile amputation	1	2.5%
Glans and skin fusion	1	2.5%
Phimosis and obstructive uropathy Cr>7 mg/dl	1	2.5%
Urethral fistula	1	2.5%

Significantly, in 11 of 13 hemorrhage cases the circumcision was performed using plastibell, while in 2 cases circumcision was performed by classic surgical circumcision. 28 patients (71.7%) were circumcised by a general practitioner, 10 patients (25.6%) by a traditional circumciser and one by a pediatric surgeon (2.5%). Only 3 of them (7.6%) were performed in a hospital center and the remaining (92.3%) were performed in outpatient situations. In two patients with serious hemorrhage hemoglobin was beneath 7mg/dl. We had also 2 patients with hematoma, in one of them circumcision was done using plastibell and another by classic reconstruction surgery. In both of them hemoglobin was under 9 g/dl. We had 7 meatal stenoses and 3 phimoses of which one ended up in obstructive uropathy

(Cr=7 mg/dl). Six of them were circumcised by plastibell.

DISCUSSION

Circumcision is commonly done in neonates, infants and children for religious, cultural and medical reasons. Circumcision remains one of the most common operations performed all around the world. About 25% of the total male population and 60% of male newborns in USA are circumcised (1). The benefit of circumcision has been described in several studies that include the reduction risk of penile cancer and cervical cancer, urinary tract infections (UTIs), sexually transmitted diseases (STDs), and lower HIV prevalence (2-6).

HPV causes genital warts in men and women, and it has been associated to cancers of the cervix, vulva, vagina, anus, and penis (7). Prevalence of high-risk HPV subtypes among men who had undergone circumcision is lower than uncircumcised men (8). Incidence of high-risk HPV infection is lower among women whose male partners are circumcised (8).

Male circumcision in childhood/adolescence substantially reduces risk of invasive penile cancer. This effect may be intervened partly through an effect on phimosis (9). Studies have consistently demonstrated decreased incidence of urinary tract infections (UTIs) among circumcised compared with uncircumcised boys. A meta-analysis including 18 studies found a pooled UTI prevalence of 20.1% among febrile uncircumcised boys <3 months of age and a prevalence of 2.4% among febrile circumcised boys <3 months of age (10). Another systematic review included 12 studies and over 400,000 children and concluded that male circumcision was related with a significantly reduced risk of UTI ($p < 0.001$) (11).

Male circumcision meaningfully reduces the incidence of human immunodeficiency virus (HIV) infection among men. Besides decreasing the incidence of HIV infection, male circumcision significantly decreases the prevalence of HPV infection and the incidence of HSV-2 infection (12). Circumcised men are at lower risk of chancroid and syphilis (13).

The median frequency of any complication was 1.5% (range 0-16%) retrospectively but in some countries it was very higher. In one report from Nigeria it had been reported to be up to 20.2% (14). It is suspected that by increasing the age of procedure there is an increase in the complications of child circumcision by medical providers which is associated with more complications (median frequency 6%; range 2-14%) than for neonates and infants (14, 15). Reported complication rates depend on the type of study (e.g., chart

review vs. prospective study), setting (medical vs. nonmedical facility), person operating (traditional vs. medical practitioner), patient age (infant vs. adult), and surgical technique or instrument used.

The most common complications are minor and treatable include infection, bleeding, swelling or inadequate skin removal (16). Fortunately, almost all cases of bleeding with neonatal circumcision are very mild. In many cases, bleeding could be controlled by applying direct pressure to the site for a minute or two. The most devastating reports of bleeding (leading to blood transfusion or death) during or after circumcision occurred in boys who had underlying blood dyscrasias, so it is critical to ask specifically about a family history of bleeding disorders before making the procedure. Infection is a rare complication of circumcision when done under sterile situation but the risk of actual infection is thought to be increased with use of the Plastibell device, likely due to the presence of a primary foreign body at the surgical site. Serious complications that can occur during the procedure are excessive bleeding and amputation of the glans penis (17). In rare conditions penile necrosis occurs but it has been reported as a complication of circumcision in the setting of infection or unwise use of an electrocautery device to control bleeding. Late and severe complications include urinary retention due to severe phimosis, fistulas and fusion of glans and preputial skin (18).

In this study we had 13 cases of bleeding, 2 cases of hematoma that were the most common complications. Undoubtedly the patients with minor complications were more than cases that referred to us with major ones. Because most of them have been managed by who performs circumcision. All infections were managed medically and we only entered complicated cases in this study that had been referred to us and needed to undergo another inpatient procedure.

In many studies the complication rate increased when Gomco ring and Plastibell were used at 3 months of age or older. In few studies complications were substantially more common when circumcision had been performed surgically (27%) rather than using the Plastibell (8%) (19).

In our study, also Plastibell had more complication especially in cases who were older than 3 months. However, in our country the surgeons usually prefer conventional dissection methods or classic plastic surgery.

Mousavi and coworkers in Iran in one trial found that the overall complication rate of conventional surgical method was less than that of the Plastibell method (1.95% versus 7.08%) (20).

It seems several factors influence the outcome such as training and expertise of provider, age at circumcision and sterility of circumcision procedure.

Yegane has shown the frequency of circumcision complications by the hand of general practitioners were mainly more than traditional circumcision provider. In this study from Iran a late-phase complication frequency of 2.7% has been reported following traditional circumcision and a further 5% of patients had excessive residual foreskin. This was similar to circumcisions performed by urologists or surgeons (2.8%), but lower than complications recorded for general physicians/pediatricians (6.1%) or paramedical personnel (9.1%). In above study the authors argued that this is because traditional circumcisers in Iran are experienced and paramedical personnel do not receive effective training (21).

This subject does not play such a role in other countries. A high frequency of complications were seen in a retrospective study from Turkey of 407 boys circumcised at two traditional mass circumcision events (22, 23). Overall, complications were seen in 73% of boys, with the most common complications being infection, subcutaneous cysts, bleeding which needed suturing and hematoma. Five boys required inpatient intravenous antibiotics. A further 12% of boys were deemed to have incomplete circumcision. In addition, 3 patients with hypospadias had been circumcised indicating inadequate selection of the boys because Hypospadias is a congenital condition which presents as a contraindication for routine neonatal circumcision.

CONCLUSION

There is a clear need to improve safety of male circumcision through risk-reduction strategies including improved training or re-training for both traditional and medically trained providers for creating this simple procedure in a safe situation.

References

1. Holman JR, Stuessi KA. Adult circumcision. *American Family Physician*. 1999;59(6):1514.
2. Drain PK, Halperin DT, Hughes JP, Klausner JD, Bailey RC. Male circumcision, religion, and infectious diseases: an ecologic analysis of 118 developing countries. *BMC Infectious Diseases*. 2006;6(1):172.
3. Punyaratabandhu P, Supanvanich S, Tirapat C, Podhipak A. Epidemiologic study of risk factors in cancer of the cervix uteri in Thai women. *Journal of the Medical Association of Thailand= Chotmaihet thangphaet*. 1982;65(5):231.
4. Dhar GM, Shah GN, Naheed B. Epidemiological trend in the distribution of cancer in Kashmir Valley. *Journal of epidemiology and community health*. 1993;47(4):290-2.
5. Christakis DA, Harvey E, Zerr DM, Feudtner C, Wright JA, Connell FA. A trade-off analysis of routine newborn circumcision. *Pediatrics*. 2000;105(Supplement 2):246-9.
6. Fergusson DM, Lawton JM, Shannon FT. Neonatal circumcision and penile problems: an 8-year longitudinal study. *Pediatrics*. 1988;81(4):537-41.
7. Castellsague X, Bosch FX, Munoz N, Meijer CJLM, Shah KV, de Sanjose S, et al. Male circumcision, penile human papillomavirus infection, and cervical cancer in female partners. *New England journal of medicine*. 2002;346(15):1105-12.
8. De Sanjose S, Diaz M, Castellsague X, Clifford G, Bruni L, Muñoz N, et al. Worldwide prevalence and genotype distribution of cervical human papillomavirus DNA in women with normal cytology: a meta-analysis. *The Lancet infectious diseases*. 2007;7(7):453-9.
9. Larke NL, Thomas SL, dos Santos Silva I, Weiss HA. Male circumcision and penile cancer: a systematic review and meta-analysis. *Cancer Causes and Control*. 2008;19(8):1097-110.
10. Shaikh N, Morone NE, Bost JE, Farrell MH. Prevalence of urinary tract infection in childhood: a meta-analysis. *The Pediatric infectious disease journal*. 2008;27(4):302-8.
11. Singh-Grewal D, Macdessi J, Craig J. Circumcision for the prevention of urinary tract infection in boys: a systematic review of randomised trials and observational studies. *Archives of Disease in Childhood*. 2005;90(8):853-8.
12. Tobian AAR, Serwadda D, Quinn TC, Kigozi G, Gravitt PE, Laeyendecker O, et al. Male circumcision for the prevention of HSV-2 and HPV infections and syphilis. *New England journal of medicine*. 2009;360(13):1298-309.
13. Weiss HA, Thomas SL, Munabi SK, Hayes RJ. Male circumcision and risk of syphilis, chancroid, and genital herpes: a systematic review and meta-analysis. *Sexually Transmitted Infections*. 2006;82(2):101-10.
14. Okeke LI, Asinobi AA, Ikuorowo OS. Epidemiology of complications of male circumcision in Ibadan, Nigeria. *BMC urology*. 2006;6(1):21.
15. Osuigwe AN, Ikechibelu JI, Okafor PIS. Circumcision-Related Complications in the Male: Experience amongst the Igbo's of Southeast Nigeria. *African Journal of Urology*. 2005;10(4):246-51.
16. Corbett HJ, Humphrey GM. Early complications of circumcisions performed in the community. *The British Journal of General Practice*. 2003;53(496):887.
17. Lazarus J, Alexander A, Rode H. Circumcision complications associated with the Plastibell device. *South African Medical Journal*. 2007;97(3):192.
18. Holman JR, Lewis EL, Ringler RL. Neonatal circumcision techniques. *American Family Physician*. 1995;52(2):511.
19. Weiss HA, Larke N, Halperin D, Schenker I. Complications of circumcision in male neonates, infants and children: a systematic review. *BMC urology*. 2010;10(1):2.
20. Mousavi SA, Salehifar E. Circumcision complications associated with the Plastibell device and conventional dissection surgery: a trial of 586 infants of ages up to 12 months. *Advances in urology*. 2008;2008.
21. Yegane RA, Kheirollahi AR, Salehi NA, Bashashati M, Khoshdel JA, Ahmadi M. Late complications of circumcision in Iran. *Pediatric surgery international*. 2006;22(5):442-5.
22. Ozdemir E. Significantly increased complication risks with mass circumcisions. *British journal of urology*. 1997;80(1):136-9.
23. Atikeler MK, Gecit I, Yılmaz V, Yalçın O. Complications of circumcision performed within and outside the hospital. *International urology and nephrology*. 2005;37(1):97-9.

Author Information

Fahimeh Kazemi Rashed

Urology Department, Imam Reza Hospital and Children
Tabriz, I.R. Iran

Nima Naghdi Sedeh

Urology Department, Imam Reza Hospital and Children
Tabriz, I.R. Iran
dr.naghdi@gmail.com

Davood Badebarin

Pediatric Surgery Department, Children
Tabriz, I.R. Iran

Farzin Sheikh Monazzah

Urology Department, Imam Reza Hospital and Children
Tabriz, I.R. Iran