CIRCUMCISION CATASTROPHES AND MANAGEMENT: A RETROSPECTIVE ANALYSIS OF 37 CASES

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ABSTRACT

Background: Circumcision is one of the most common elective surgical procedures performed in children for cultural, religious or medical reasons. In most of the under developed and developing countries most of the circumcisions are performed by non medical people also perform circumcision which result into more per and post operative complications.

Objective: To determine per and post-operative complications in different age groups of circumcisions performed outside in some private clinic or non medical facility and brought to our hospital for management of complications.

Methodology: This was cross sectional study that was performed on patients, referred or brought to our department of Pediatric surgery, DHQ Hospital, Sahiwal, either immediately after circumcision or late, to deal the complications. Overall, 42 patients were enrolled. Five patients were excluded from study, as their bleeding either stopped spontaneously or with mild compression. Patients were divided according to the age at the time of circumcision, as neonate, infant and children. Study duration was from 1st July 2016 to 30th June 2018. They were received either through emergency or pediatric surgery clinic. Data was analyzed by using SPSS version 16.

Results: A total 37 patients were included in this study, who needed some kind of intervention. The mean age of neonates, infants and children, was 14 ± 3.5 days, 6 ± 1.6 months and 8 ± 0.8 years respectively. They were circumcised by the classic method and a few of them with the help of plastibell. The most common complication was bleeding 18 (48.6%) and was more often in neonates 11(29%). Place of circumcision and persons who performed circumcision were also analysed.

Conclusion: Complications of circumcision are associated with the age of the patients, more in neonates and infants as compared to children. Place of circumcision also matters. Circumcisions performed out of hospital facility and by untrained personnels, or traditionists have higher complications. The results of this study showed that for prevention of complications, appropriate age of circumcision, properly trained medical professionals, equipment and proper hospital set up are mandatory.

Keywords: Circumcision, Complications, Neonate, Infant, Injury

INTRODUCTION

Circumcision is a quite command nearly one in three men are circumcised worldwide.[1] Circumcision is one of the most frequently performed elective procedure in males.[2] Circumcision has its own complications like any other surgical procedure, with an overall complication rate of 2-5%.[3] Type of anesthesia local versus general, younger age at circumcision, method used, experience and competence of the surgeon are the factors which may result into severe complications.[3,4,5] Most of the time complications are minor and easily treatable.[1] But sometimes major complications like death can also occur.[4] There are a number of late complications like mitral stenosis which need some kind of operative procedure.[5] In some children have residual sequelee of faulty circumcision and need both medical and surgical management. In recent years more people are getting interested in male circumcision because recent studies have shown that adult circumcision plays an important role in prevention of acquiring HIV infection. Now a days safe circumcision is being practiced in many countries due to alarming incidence of HIV infection.[6] For long term HIV prevention strategy World Health Organization (WHO) and the Joint United Nations Program on HIV have recommended neonatal and adult circumcision.[7] The objective of the study was to determine per and post-operative complications in different age groups of circumcisions performed outside and brought to our hospital for management of complications

METHODOLOGY

This was cross sectional study, from 1st July 2016 to 30th June 2018. Thirty seven patients were included, with circumcision related complications that needed some sort of intervention. They were all referred from outside of the hospital to the Department of Pediatric Surgery, DHQ Teaching Hospital, Sahiwal.

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The age range of these children varied from 7 days to 9 years. We also collected data on the practice of circumcision, including age at the time of circumcisions, type of circumcisions, and early and late complications. As the parents were not fully aware of the method of circumcision performed, so it was not possible to individually identify complications of different methods of circumcision. Other data collected were age at presentation to our service and the interval from notice of the complications to presentation. Data was entered and analyzed by using SPSS version 16.

RESULTS

A total of 37 children were included in this study. The age range of these children varied from 7 days to 9 years, with a mean of 1.8 years. They were divided into three groups according to age, neonates, infants and children.

Table I: Age at the time of circumcision and frequency at the time of presentation

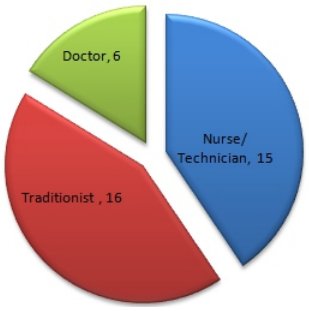
Groups	Age at circumcision	Age at Presentation	No (%)
Group 1 (Neonates upto 30 days)	14 ± 3.5 Days	< 1 month	14 (37.83%)
Group 2 (Infants to < 1 year)	6 ± 1.6 Months	< 1 year	10 (27.02%)
Group 3 (Children 1-10 years)	8 ± 0.8 years	> 1 year	13 (35.13%)

Many of the patients were neonates at the time of circumcision and presentation 14 (37.8%). Details of all three groups are given in Table I.

Most of the circumcisions were performed by traditionist i.e, barber 16 (43.2%). (Figure I) Bleeding and inadequate/ incomplete circumcision were the most common complications 18 (48.6%) and 4 (10.80%) respectively. Details of complications and relevant management are elaborated in Table II.

Our study showed that out of total 37 children, 6 (16%) complications were from doctor operated cases, 15 (40.5%) from Nurse /Technician and 16 (43%) from Traditionist operated cases.

Figure I: History of circumcision service providers



DISCUSSION

Circumcision is an old surgical procedure with a history of 15,000 years.[1] Although circumcision is commonly performed in males but a number of complications have been mentioned in literature.[8-12] Out of them bleeding and infection are at the top. Although major complications are rare but there is wide variation in the reported complications after circumcision.[13-15]

Table II: Complications, time of presentation after circumcision and management

Complications	No (%)	Duration (Range, Mean)	Management Done
Bleeding	18 (48.64%)	1-14 hours (5.27 hours)	Suturing ± Blood transfusion
Infection	3(8.10%)	3-9 days (5.66 days)	Antibiotics and daily dressing
Glans injury	3(8.10%)	2-8 hours (4.66 hours)	Debridement and Repair
Excessive skin loss	2 (5.40%)	5-60 days (37.5 days)	Mobilization and Repositioning of skin
Inadequate circumcision	4 (10.80%)	8-55 months (31.5 months)	Recircumcision
Meatal stenosis	3 (8.10%)	3-27 months (14 months)	Meatotomy
Uretherocutaneous Fistula	2 (5.40%)	15-72 days (43.5 days)	Fistula Repair
Burried penis	1 (2.70%)	60 days	Penoplasty
Death	1 (2.70%)	6 Hours	Cardiopulmonary resuscitation

Many factors influence rate of complications like age at the time of circumcision, whether circumcisionist is trained or untrained, and sterile environment. Proportion of circumcised males varies from place to place according to race, religion, culture, medical reason as well as the choice of the parents in case of children.

The Middle East is at the top having circumcised males where infant and child circumcision is universal due to its large Muslim population.[2] Incidence of urinary tract infection and carcinoma of the penis is less in circumcised males as compared to circumcised population and it has been acknowledged by the American Academy of Pediatrics.[9,10] Bleeding is the most common complication associated with circumcision.[11] This is due to rich blood supply of phallus and its foreskin.[12] Frenular artery is a frequent source of bleeding after circumcision if not properly cauterized or ligated. In our study, 18 (48.64%) of our patients, presented with bleeding. Some of them settled with suturing and redressing but a few needed blood transfusion and 1 (2.70%) died due to excessive blood loss and ultimately cardiac arrest. In one prospective study, (9.87%) of circumcisions resulted in abnormal bleeding.[13] In our study, our bleeding rate is high most probably because of circumcisions performed by untrained people out of hospital premises with the help of bone cutter and some other traditional homemade devices. Brian D. Earp et al,[13] collected data from the largest U.S. inpatient database to find out causes of post circumcision early mortality in infants. The early death after circumcision was less likely in teaching hospitals, 2.0/100,000. Infants with co morbid conditions like bleeding disorders or fluid and electrolyte imbalance had high mortality.[14] Infection is another early post circumcision complication.[15] It is more common in newborns due to lack of immunity.

Usually they are nursed in diaper, so stool and urine have free access to wound. Usually wound infection is mild and localized, but sometimes it is more serious and results into high mortality. We received 3 (8.10%) patients with superficial infection, all recovered with daily dressing and parenteral antibiotics. Patel, reported a series of 100 consecutive circumcisions, he found infection in 8 cases (8%), with 1 serious enough to administer antibiotics,[14] which is very similar to our patient series. Abdullah L B et al had an infection rate of 4.3% in their patients.[15]

Another common complication of circumcision is the over cutting of skin which may result into partial or total denudation of the penile shaft,[16,17] and sometimes excess skin is left behind that the penis looks uncircumcised. It creates anxiety in parents so they request for a repeat procedure.[18] In our study, 2 (5.40%) of our patients presented with over cutting of skin while 4 (10.80%) with excessive remnant skin. 476 were treated in Massachusetts General Hospital with late circumcision complications, 40% of them were for incomplete circumcision and 5% for phimosis who underwent some sort of surgical procedure.[19]

The meatal stenosis is another commonly seen complication following circumcision, with an incidence variously reported to be 0.9% to 32.1%.[20] Rate of meatal stenosis in our patients was 8.1%. Glans injury, meatal stenosis, uretherocutaneous fistula and buried penis are some other complications detected in referred patients which are comparable to other studies from Pakistan, and U.K. A study was carried out on 200 patients who were circumcised under local anesthesia. Procedure was performed either freehand or with the help of bone-cutter.[21,22] All patients were circumcised with help of plastibell. Nurse was the circumciser, and overall 11.1% of infants got some kind of complication discovered during follow up visits.[22] Circumcision provider is another important factor while considering complications. In our study only 6 (16%) patients got some sort of complications in hands of doctors while 15 (40%) and 16 (43%) by nurse and traditionist respectively. Literature review shows that proper training and experience of the circumcision provider is important. Sterile environment in hospitals cannot be neglected.[23]

Similarly, two case-control studies from Israel pointed more complications by traditionists than trained medical professionals.[24] As mentioned by Anike U and colleagues circumcision procedure is commonly performed by traditionists and untrained people. While rate of circumcisions done by trained doctors and other medical staff is comparatively less.[25] Yegane and Atikeler et al. results are nearly similar. 43.49% of circumcisers were traditionists and untrained.[23] Traditional circumcisers are a grave problem especially in the under developed countries. As mentioned by Alagoa PJ and colleagues[26] most of the circumcisers in Nijeria were barbers and public health workers who perform this procedure under unsterile conditions.

CONCLUSION

Male circumcision is commonly practiced and will continue to be practiced for religious, cultural and medical reasons. Usually, complications of circumcision are minor and easily treatable, especially at younger age group, but major complications are also seen when the procedure is performed by inexperienced, untrained and non medical personnels. Sterile settings, adequate equipment, and proper assistance also matters. We suggest that circumcision should be carried out by trained medical personnel under sterile conditions in hospital environment. Workshops should be arranged for medical staff interested in performing circumcision.

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REFERENCES

1. Weiss HA, Larke N, Halperin D, Schenker I. Complications of circumcision in male neonates, infants and children: A systematic review. BMC Urol 2010;10:2.
2. Burgu B, Aydogdu O, Tangal S, Soygur T. Circumcision: Pros and cons. Indian J Urol 2010;26:12-5.
3. Wiswell TE, Tencer HL, Welch CA, Chamberlain JL. Circumcision in children beyond the neonatal period. Pediatrics 1993;92:791-3.
4. Ahmed A, Mbibu NH, Dawam D, et al. Complications of traditional male circumcision. Ann Trop Paediatr 1990;19:113–17.
5. Pieretti RV, Goldstein AM, Pieretti-Vanmarcke R. Late complications of newborn circumcision: a common and avoidable problem. Pediatr Surg Int 2010;26:515–8.
6. Hankins C: Implementation of male circumcision: what is the way forward?. International Union Against Tuberculosis and Lung Disease 39th Union World Conference on Lung Health Paris 2008.
7. WHO/UNAIDS: New data on male circumcision and HIV prevention: Policy and programme implications: conclusions and recommendations. UNAIDS 2007.
8. Lerman SE, Liao JC: Neonatal circumcision. Pediatr Clin North Am 2001,48:1539-1557.
9. Tobian AA, Gray RH, Quinn TC. Male circumcision for the prevention of acquisition and transmission of sexually transmitted infections: the case for neonatal circumcision. Arch Pediatr Adolesc Med 2010;164: 78–84.
10. Williams N, Kapila L. Complications of circumcision. Brit J Surg. 1993;80:1231-6.
11. Cold CJ, Taylor JR. The prepuce. BJU Int. 1999;83(Suppl 1):34-44.
12. Sutherland JM, Glueck HI, Gleser G. Hemorrhagic disease of the newborn: breast feeding as a necessary factor in the pathogenesis. Am J Dis Child. 1967;113:524-33.
13. Brian D. Earp, Veerajalandhar Allareddy, Veerasathpurush Allareddy, Alexandre T. Rotta. Early mortality following neonatal circumcision in the United States (2001-2010). (Clinical Pediatrics, Jan 2019, in press ahead of publication)
14. Patel H. The problem of routine circumcision. Can Med Assoc J. 1966;95:576-581.
15. Abdullah L B, Mohammad A M, Anyanwu LC, Farinyaro A U. Outcome of male circumcision: A comparison between plastibell and dorsal slit methods. Niger J Basic Clin Sci 2018;15:5-8.
16. Van Howe RS. A CDC-requested, evidence-based critique of the Centers for Disease Control and Prevention 2014 draft on male circumcision: how ideology and selective science lead to superficial, culturally-biased recommendations by the CDC. Academia website. 2015 Jan.
17. Kokorowski PJ, Routh JC, Hubert K, Graham DA, Nelson CP. Trends in revision circumcision at pediatric hospitals. Clin Pediatr (Phila). 2013;52(8):699-706
18. R. V. Pieretti, A. M. Goldstein, and R. Pieretti-Vanmarcke, "Late complications of newborn circumcision: a common and avoidable problem, Pediatr Surg Int,2010; 26(5): 515–18.
19. Ketabchi A A, Ahmadinejad M, Farjah- Shahrokhi Ebrahimipour M, R Afshar Y. Comparison of the Late Complications of Circumcision in Different Age Groups, J Compr Ped. 2017 ;8(2):e59340.
20. Rehman J, Ghani M, Shehzad K, Sheikh I: Circumcision - a comparative study. Pakistan Armed Forces Medical Journal 2007, 57:286-8.
21. Palit V, Menebhi DK, Taylor I, Young M, Elmasry Y, Shah T: A unique service in UK delivering Plastibell (R) circumcision: review of 9-year results. Pediatric Surgery International 2007, 23:45-48.
22. Osuigwe A, Ikechebelu J, Okafor P: Circumcision-Related Complications in the Male: Experience amongst the Igbo's of Southeast Nigeria. African Journal of Urology 2004, 10:246-51.
23. Prais D, Shoov-Furman R, Amir J: Is ritual circumcision a risk factor for neonatal urinary tract infections?. Arch

Child 2009, 94:191-94.

24. Anike U, Govender I, Ndimande JV, Tumbo J. Complications of traditional circumcision amongst young Xhosa males seen at St Lucy's Hospital, Tsolo, Eastern Cape, South Africa. Afr J Prim Health Care Fam Med. 2013; 5(1): 1-5

25. Atikeler MK, Gecit I, Yuzgec V, Yalcin O. Complications of circumcision performed within and outside the hospital. Int Urol Nephrol. 2005; 37(1): 97-9

26. Alagoa PJ, Gbobo I. Complications of male infant circumcision in a semi-urban Niger Delta town. Int J Trop Dis Health. 2013;3(3): 217-23

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