

Male Circumcision: A Practice Survey from Saudi Arabia

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Abstract

The study aims to evaluate the various techniques used to perform circumcision in Saudi Arabia. In September 2018, this cross sectional survey was performed. A questionnaire were sent to all pediatric surgery units across the Kingdom. The responses to the questionnaire were analyzed and categorized. A total of 176 questionnaires were send and more than half (56.3%) of the practitioners filled the questioners, 62 (63%) were consultants, 19 (19%) were specialists and 19 (19%) were trainee in pediatric surgery fellowship program. Circumcisions were performed in Maternity and Children hospitals (32.3%), tertiary hospitals (32.3%), private hospitals (16%) and in general or academic hospitals (19%). The most commonly used method for circumcision was Gomco clamp (n = 39; 39.6%) followed by plastibell (n = 30; 30%) and bone cutter (n = 25; 25.4%). The optimal time for circumcision was in neonatal period .86 % of the surgeons agree that 2.5 to 5 kg is the optimal weight for the baby to do circumcision. In Saudi Arabia circumcision is a religious practice done for every Muslim male. It should be done by trained medical practitioner and circumcision done by non-medical personal should be avoided. Circumcision should be performed in the neonatal period and attention should be given to analgesia.

Keywords

Circumcision; Survey; Pediatric surgeons

Introduction

Circumcision is one of the oldest and most common operations performed all over the world with an estimated 25 circumcisions being performed every minute. The prevalence of male circumcision is approximately 37.7% worldwide^[1]. The procedure, which involves the surgical removal of the prepuce (foreskin) either in whole or in part, has evolved from being a rite of passage into manhood to being a

symbol of faith, mainly among Muslims and Jews^[2]. However, from the late 19th century onwards, it gained global popularity in the field of public health as having protective effects against penile infection, carcinoma and venereal diseases^[3]. The adoption of circumcision to clinical settings has also reduced the risk of complications from traditional ceremonial practices. Though the procedure is prevalent among adolescents and adults, infancy presents a "window of opportunity" for circumcision with lower costs, lesser pre- and

post-operative complications, quicker healing, and superior cosmetic and health benefits^[4]. A standard surgical protocol involves asepsis, excision of outer and inner preputial skin layers, hemostasis, protection of the glans and urethra, and cosmesis. The methods employed for circumcision are classified into three main types, such as dorsal slit, shield and clamp, and excision or their combinations. The shield and clamp adopt the use of devices to effect circumcision with minimal usage of knife and is a method of choice for infants^[5]. In situ devices (clamps and collar compressor for adults) compress the foreskin between two surfaces, thereby stopping bleeding and allowing the foreskin to be removed at the time of device placement or after necrosis of the foreskin has occurred (Plastibell device [PD] for infants), mostly after a week.

Male circumcision (MC) being a complementary method in HIV prevention also indirectly reduces the risk of exposure in women. The World Health Organization (WHO) and the Joint United Nations Programme on HIV and AIDS (UNAIDS) advocated for adolescent and adult voluntary medical male circumcision (VMMC) as part of comprehensive HIV prevention programs. With the present focus on early infant male circumcision (EIMC) as a means to achieve sustainability of VMMC, WHO published the Manual for Early Infant Male Circumcision under Local Anesthesia in 2010^[6]. However, in regions with less HIV and sexually transmitted infection (STI) endemicity, awareness on different circumcision methods with its associated benefits and risks is critical to making informed choices. No devices or specific techniques are reported to be superior to the other, and each has its own advantages and disadvantages. Circumcision can result in early (intraoperative) or late (postoperative) complications, but serious complications are extremely rare. Complication rates ranging from 1.4% to 1.6% have been reported in Muslim-majority countries. However, the rates of reported complications vary greatly between studies, depending on the training and experience of providers, age of the subject, surgical procedure, sterility of the setting, and data collection methods^[7,8].

In Saudi Arabia, 97.1% of males undergo circumcision in the neonatal period mainly for religious reasons; cultural and educational influences also play an important role^[9]. Despite this high prevalence, there is a lack of systematic surveys on the clinical practices

associated with the procedure that could facilitate consensus models for safe and effective circumcision. Such reviews are of paramount significance when several global health care policies assess the feasibility and safety of introducing EIMC services into health facilities as part of Maternal, Newborn and Child Health programs^[4]. The present study has therefore gathered information and opinions from experienced clinicians to evaluate the various principles and practice methods employed in circumcision across different hospitals in the country.

Materials and Methods

In January 2018, questionnaires containing 24 multiple-choice questions were sent to all pediatric surgery units across the Kingdom of Saudi Arabia. The questionnaire, approved by the institutional review board, requested information from health-care providers about several aspects of neonatal circumcision. Further, the responses were analyzed and categorized as shown in the results section.

Results

A total of 176 questionnaires were distributed, and of them, 99 (56.3%) questionnaires were addressed by practitioners. The respondents included 62 (63%) consultants, 19 (19%) specialists, and 19 (19%) trainees in the pediatric surgery fellowship program. All of them performed 25 to 100 circumcisions per year at maternity and children's hospitals (n = 32; 32.3%), tertiary hospitals (n = 32; 32.3%), private hospitals (n = 16; 16%), and general or academic hospitals (n = 19; 19%) (Table 1).

Techniques of Circumcision

The most commonly used method for circumcision was Gomco clamp (n = 39; 39.6%), followed by PD (n = 30; 30%) and bone cutter (n = 25; 25.4%) (Fig. 1).

Age and Weight of the Baby at the Time of Circumcision

The optimal time for circumcision is in the neonatal period (before discharge [n = 26; 26%], first week [n = 32; 32%] and within the 1st month of life [n = 33; 33%]) (Table 2). Eighty-six (86%) out of 99 surgeons agreed

that 2.5 to 5 kg is the optimal weight for the baby to undergo circumcision (Fig. 2). Most of the practitioners do not perform the surgery if the baby's age is > 2 months (n = 32; 32.6%) and ≥ 4 months (n = 67; 67.8%) or if the weight is > 5 kg (n = 81; 81.4%).

Table 1. Types of the hospitals where the circumcisions were done

Hospitals	Frequency	Percentage (%)
Pediatric hospitals	32	32.3
Tertiary hospitals	32	32.3
Private hospitals	16	16.2
General hospitals	14	14.1
Academic hospitals	5	5.1
Total	99	100

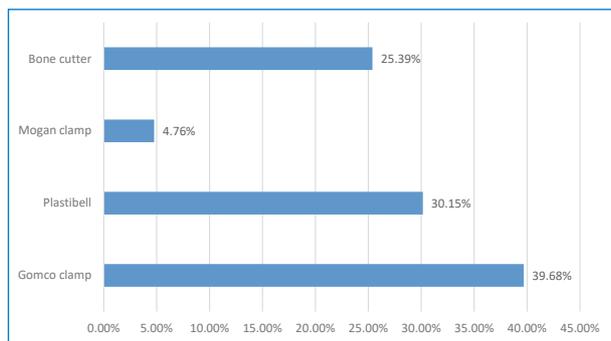


Figure 1. Types of techniques used in circumcisions.

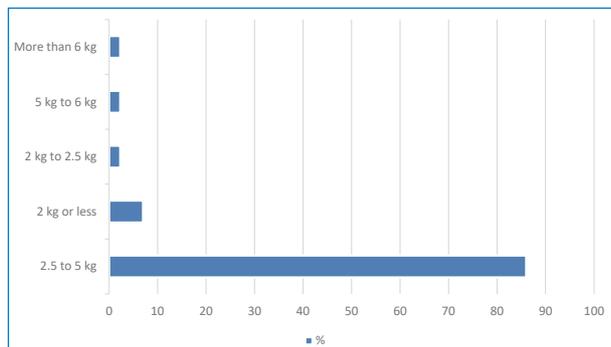


Figure 2. Optimal baby weight from the surgeon's perspective.

Table 2. Optimal time of circumcision from the surgeon's perspective

Optimal Time	Frequency	Percent	Valid Percent	Cumulative Percent
(8-30) days (within the 1st month)	32	32.3	32.3	32.3
Before discharge home (1 to 2 day) in nursery	26	26.3	26.3	58.6
1st week	23	23.3	23.3	81.9
At 7 days	9	9	9	90.9
From 2 to 4 month	9	9	9	100.0
Total	99	100.0	100.0	

Surgical settings

In 80% (n = 80) of the patients of different ages, circumcision was done in a clinic or a day surgery suite (1st week [n = 12; 12%], 8-30 days [n = 52; 52%] and 2 to 4 months [n = 16; 16%]). Only in 19% (n = 19) of the cases, circumcision was done in the nursery before discharge from the hospital (Table 3). Circumcisions were done by a registrar or assistant consultant (n = 72; 72%) and by consultant (n = 28; 28%) mainly in private hospitals (Table 4).

Anesthesia and Analgesics

For local anesthesia, practitioners use dorsal penial block (n = 49; 49%) using Xylocaine injection 1 mg/Kg, EMLA cream application (n = 37; 37%), and Xylocaine spray (n = 4; 4%), while 9% (n = 9) were noncompliant (Table 5). Adol drops or suppositories were commonly used for analgesia (n = 62; 62.6%), followed by dextrose oral solution (n = 21; 21.2%) (Table 6).

DISCUSSION

Circumcision is a widespread practice greatly influenced by cultural and religious traditions. Muslims are currently the largest single religious group in which the practice of circumcision is widespread, especially in Arabic-speaking countries^[10]. The main reason given for the ritual is cleanliness and hygiene. It is essential that every Muslim cleans himself before praying and that no urine should be left on the body. Removal of the foreskin makes it easier to keep the penis clean, avoiding urine or any secretions to be trapped there. According to the World Health Organization (WHO), global estimates suggest that 30% of males are circumcised, of whom 68% are Muslims. In Saudi Arabia, 97.1% of newborns are circumcised^[11]. There are other reasons for circumcision, including decreasing the incidence of urinary tract infection and balanitis. Reduction in ulcerative sexually transmitted diseases^[12,13], HIV^[14], and HPV^[15] has also been reported. The use of circumcision for medical or health reasons

Table 3. Areas where circumcision done

Areas Where Circumcision	Frequency	Percent	Valid Percent	Cumulative Percent
Nursery (in-patient)	19	19.2	19.2	19.2
Clinic (out-patient)	31	31.3	31.3	50.5
Procedural clinic	15	15.1	15.1	65.6
Day surgery	35	35.4	35.4	100.0
Total	99	100.0	100.0	

Table 4. Experience of the practitioner

Experience of the Practitioner	Frequency	Percent	Valid Percent	Cumulative Percent
Your assaiant registrar or senior registrar	63	63.6	63.6	63.6
You	27	27.3	27.3	90.9
Your trainee resident	9	9.1	9.1	100.0
Total	99	100.0	100.0	

Table 5. Types of anesthesia used

Types of Anesthesia	Frequency	Percent	Valid Percent	Cumulative Percent
Local injection e.g., Xylocaine	48	48.5	48.5	48.5
Emla cream	38	38.4	38.4	86.9
None	9	9.1	9.1	96
Xylocaine spray	4	4	4	100.0
Total	99	100.0	100.0	

Table 6. Types of analgesics used

Type of Analgesia Used	Frequency	Percent	Valid Percent	Cumulative Percent
Adol drop	62	62.6	62.6	62.6
Dextrose	21	21.2	21.2	83.8
None	16	16.2	16.2	100.0
Total	99	100.0	100.0	

is an issue that continues to be debated. The American Academy of Pediatrics found that the health benefits of newborn male circumcision outweigh the risks, but the procedure was not found to be essential to a child's well-being, justifying its access only upon personal choice. Researchers have shown that the foreskin is enriched with HIV-1 target cells, providing biological evidence for the decrease in the risk of HIV infection by male circumcision, which was first proposed in 1986. These beneficial effects are more relevant for high HIV- and STI-endemicity settings. Therefore, adolescent and adult VMMC and, more recently, EIMC are advocated by public health agencies such as WHO and UNAIDS. Routine circumcision in the neonates are performed safely, but higher complication rates are reported with increasing age. The main complications due to the procedure of operation are wound dehiscence, postoperative bleeding, urinary retention and infection, which in most cases are avoidable. Awareness about

the various procedures is critical to making informed choices for safe and effective circumcision. Though comparison of different devices used for circumcision in Saudi Arabia has been reported before, the present work is unique in that we have gathered information from experienced practitioners and evaluated the various aspects of the procedure, such as the experience of the provider, vital status of the client, surgical methods, analgesics, etc. as performed across different hospitals across the country.

According to this survey, most pediatric surgeons believe that the best time of circumcision is in the neonatal period (90%). Circumcision in the neonatal period is associated with substantially lower costs and lower risk of complications, and an assurance of greatly reduced risk of penile cancer and various STIs later in life, no smegma, and improved hygiene^[3]. The present study reports corroborate with earlier studies that

indicate higher prevalence of neonatal circumcision in Saudi Arabia, thus validating the efficacy of the study procedure. In Saudi Arabia, circumcision is done in the neonatal period, unless there is a medical reason to delay circumcision such as congenital anomaly or prolonged jaundice. In the past, circumcision was usually performed in a non-clinical setting by a traditional provider with no formal medical training. Currently, circumcision is mostly done by pediatric surgeons, general surgeons and/or urologists. The timing of elective newborn circumcision is still controversial but, when done before hospital discharge, it was not associated with a decrease in exclusive breastfeeding among military mothers and babies in the first 2 weeks of life^[16]. In this survey, circumcision was done in the neonatal period, and 19% of circumcisions were done in the nursery before discharge from the hospital. This is to avoid any delay mainly because of the difficulties to arrange for the procedure subsequently. Following discharge from the hospital, most circumcisions were done in clinics or as booked procedures in a day surgery.

Gomco clamp is the most commonly used method to do circumcision, followed by PD. As reported earlier by some authors, though PD is widely used in neonates across the world, both physicians and parents in Saudi Arabia opt for conventional techniques, such as the Gomco or bone cutter^[17]. However, the present survey indicates a preference for PD over the bone cutter. Unlike the shield and clamp procedure of the Gomco clamp or PD, the bone cutter method is blind and known to be associated with frequent tragic complications like amputation of glans, bleeding, and urethra-cutaneous fistula. However, it is still being used by 25% of medical practitioners. This survey did not include circumcision performed outside hospitals by non-medical practitioners; this practice still persists and is known to be associated with morbidity and should thus be avoided.

The impact of pain and the psychological implications for infants undergoing circumcision are unknown^[18,19]. It is well known that newborns demonstrate a strong endogenous reaction to pain during circumcision, and therefore, different modalities were used for pain relief during circumcision^[2]. In this survey, it was standard to use some form of anesthesia, mainly dorsal penile block (n = 49; 49%) and EMLA cream application (n = 37; 37%). The dorsal penile nerve block (Xylocaine injection 1 mg/kg) is the best described and studied technique and has a low rate of minor complications, while EMLA application is mostly

preferred with PD-assisted circumcision. Adol drops (15 mg /Kg) or suppositories were commonly used for analgesia (n = 62; 62.6%). As per the WHO guidelines, local anesthesia alone should be used for most infants (< 1 year of age). Due to serious risks associated with sedation, it is not recommended for clinic-based circumcision and should be provided under specifically equipped clinical settings.

Conclusion

In conclusion, circumcision is a religious practice done for every Muslim male in Saudi Arabia. It should be done by trained medical practitioners, and traditional circumcision done by non-medical personal should be avoided. Gomco and PD are the most commonly used techniques. Circumcision should be performed in the neonatal period, and attention should be given to decrease the pain, discomfort and possible psychological trauma associated with circumcision. A large prospective, randomized, controlled trial is important to help standardize the practice of circumcision in Saudi Arabia by the Ministry of Health.

Conflict of Interest

The authors have no conflict of interest.

Disclosure

The authors did not receive any type of commercial support either in forms of compensation or financial for this study. The authors have no financial interest in any of the products or devices, or drugs mentioned in this article.

Ethical Approval

The study design was reviewed and approved by the Unit of Biomedical Ethics Research Committee at King Abdulaziz University.

References

- [1] Hammond T. A preliminary poll of men circumcised in infancy or childhood. *BJU Int* 1999; 83 Suppl 1: 85–92.
- [2] Doyle D. Ritual male circumcision: a brief history. *J R Coll Physicians Edinb* 2005; 35(3): 279–285.
- [3] Morris BJ, Waskett JH, Banerjee J, Wamai RG, Tobian AA, Gray RH, Bailis SA, Bailey RC, Klausner JD, Willcourt RJ, Halperin DT, Wiswell TE, Mindel A. A 'snip' in time: what is the best age to circumcise? *BMC Pediatrics* 2012; 12: 20.

- [4] Al Qahtani R, Abu-Salem LY, Pal K. Effect of lidocaine-prilocaine eutectic mixture of local anesthetic cream compared with oral sucrose or both in alleviating pain in neonatal circumcision procedure. *Afr J Paediatr Surg.* 2014; 11(1): 56-61.
- [5] Abdulwahab-Ahmed A, Mungadi IA. Techniques of male circumcision. *J Surg Tech Case Rep* 2013; 5(1): 1–7.
- [6] Bailey RC, Nyaboke I, Otieno FO. What device would be best for early infant male circumcision in east and southern Africa? Provider experiences and opinions with three different devices in Kenya. *PLoS One* 12(2): e0171445
- [7] Anwer AW, Samad L, Iftikhar S, Baig-Ansari N. Reported male circumcision practices in a Muslim-majority setting . *Biomed Res Int* 2017; 2017: 1-8.
- [8] Friedman B, Khoury J, Petersiel N, Yahalomi T, Paul M, Neuberger A. Pros and cons of circumcision: an evidence-based overview. *Clin Microbiol Infect* 2016; 22(9): 768-774.
- [9] Morris BJ, Wamai RG, Henebeng EB, Tobian AA, Klausner JD, Banerjee J, Hankins CA. Estimation of country-specific and global prevalence of male circumcision. *Popul Health Metr* 2016; 14: 4.
- [10] Weiss HA, Quigley MA, Hayes RJ. Male circumcision and risk of HIV infection in sub-Saharan Africa: a systematic review and meta-analysis. *AIDS* 2000; 14(15): 2361–2370.
- [11] "Circumcision", the Columbia Encyclopedia. 2001; Sixth Edition.
- [12] Abu Daia JM, De Castro R. Plastibell: A quick technique to decrease the distress of neonatal circumcision. *Saudi Med J* 1999; 20(11): 848-851.
- [13] Moses S, Bailey RC, Allan RR. Male circumcision: assessment of health benefits and risks. *Sex Transm Infect* 1998; 74(5): 368–373.
- [14] Van Howe RS. Genital ulcerative disease and sexually transmitted urethritis and circumcision: a meta-analysis. *Int J STD AIDS* 2007; 18(12): 799–809.
- [15] Nielson CM, Schiaffino MK, Dunne EF, Salemi JL, Giuliano AR. Associations between male anogenital human papillomavirus infection and circumcision by anatomic site sampled and lifetime number of female sex partners. *J Infect Dis.* 2009; 199(1): 7–13.
- [16] Mondzelewski L, Gahagan S, Johnson C, Madanat H, Rhee K. Timing of circumcision and breastfeeding initiation among newborn boys. *Hosp Pediatr* 2016; 6(11): 653-658.
- [17] Bawazir OA. A controlled trial of Gomco versus Plastibell for neonatal circumcisions in Saudi Arabia. *Int J Pediatr Adolesc Med* 2019 (in press).
- [18] Grimes DA. Routine circumcision of the newborn infant: a reappraisal. *Am J Obstet Gynecol* 1978; 130(2): 125-129.
- [19] Kirya C, Werthmann MW Jr. Neonatal circumcision and penile dorsal nerve block-a painless procedure. *J Pediatr* 1978; 92(6): 998-1000.

ختان الذكور: دراسة استقصائية ممارسة من المملكة العربية السعودية

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المستخلص. تهدف هذه الدراسة إلى تقييم الأساليب المختلفة المستخدمة لأداء الختان في المملكة العربية السعودية. في سبتمبر ٢٠١٨ تم إجراء هذا المسح المقطعي، وتم إرسال استبيان من ٢٤ خيارًا متعددًا إلى جميع وحدات جراحة الأطفال في جميع أنحاء المملكة العربية السعودية. تم تحليل الردود على الاستبيان وتصنيفها كما هو موضح. تم إرسال ما مجموعه ١٧٦ استبيانًا، وقام أكثر من نصف (٥٦,٣٪) الممارسين بملء الاستبيان، وكان ٦٢ (٦٣٪) منهم استشاريون، و ١٩ (١٩٪) متخصصون، و ١٩ (١٩٪) متدربين في جراحة الأطفال ببرنامج الزمالة. أجريت عمليات الختان في مستشفيات الأمومة والطفولة (٣٢,٣٪) والمستشفيات المرجعية (٣٢,٣٪) والمستشفيات الخاصة (١٦٪) والمستشفيات العامة أو الأكاديمية (١٩٪). الطريقة الأكثر شيوعًا للختان كانت Gomco clamp (العدد ٣٩، والنسبة ٣٩,٦٪). متنوعة بالبلاستيك (العدد ٣٠ والنسبة ٣٠٪) وقاطع العظام (العدد ٢٥ والنسبة ٢٥,٤٪). الوقت الأمثل للختان هو في فترة الوليد (قبل الخروج ٢٥٪، الأسبوع الأول ٣٣٪) وخلال الشهر الأول من العمر ٣٣٪. يتفق ٨٦٪ من الجراحين على أن ٢,٥ إلى ٥ كجم هو الوزن المثالي للطفل للقيام بالختان. في المملكة العربية السعودية، يعتبر الختان ممارسة دينية لكل ذكر مسلم. يجب أن يتم ذلك بواسطة ممارس طبي مدرب ويجب تجنب الختان التقليدي الذي يقوم به شخص غير متخصص طبيًا. Plastibell و Gymco هي التقنيات الأكثر استخدامًا. يجب إجراء الختان في فترة الوليد وينبغي الاهتمام بتسكين الألم.