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Male Circumcision: Contemporary Practice Pattern of the Egyptian Pediatric Surgeons

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Abstract

Background: To determine the practice pattern of male circumcision among pediatric surgeons in Egypt.

Aim of Study: This study proved a shortage of communication between the surgeons and the parents. And it was limited by the inability to correlate the clinical practice with the outcome results and the fact that not all members of EPSA responded to e-mails or personal communication.

Patients and Methods: During 33rd Congress of Egyptian Pediatric Surgical Association in 2018, the pediatric surgeons were asked to fill a 22-question survey about their practice in male circumcision.

Results: Correct responses were received from 126 surgeons; 27% of responders operated more than 150 cases per year, 35% performed circumcision at the neonatal period, 45.2% used bone cutting forceps, 88.1% preferred electrocautery for sealing minute bleeding vessels; (81.7% use bipolar diathermy and only 6.4% used monopolar diathermy), 8% of the responders never used sutures in circumcision. There is a wide variation in the type of anesthesia and analgesia used. 61% recommended removal of the dressing after 24 hours. 70.4% of the responders regularly reviewed the cases in the outpatient clinics.

Conclusion: The current survey reflects the diversity in the practice patterns of circumcision among pediatric surgeons in Egypt. Guillotine method using bone cutting forceps still the commonest method used. Other methods are limited due to the unavailability of the devices in most institutions. The pain control measures and the post-procedure care should be improved.

Key Words: *Anesthesia – Bleeding – Circumcision – Electrocautery.*

Introduction

MALE circumcision is widely practiced all over the world, with about one-sixth of the world's men population had undergone this procedure **[1]**. Six thousand years ago, Egyptian mummies have been registered to be circumcised **[2]**.

The procedure continues to be performed for a variety of cultural, religious, and medical reasons like phimosis, paraphimosis, and balanitis to reduce infection, maintain hygiene, and provide cultural identity **[3]**.

Although it is the oldest surgical operation, it is still, there are controversies about the best surgical technique **[4]**, the age at the operation, the post-operative care and the follow-up after circumcision **[5]**. The present study discusses the contemporary practice pattern of Egyptian pediatric surgeons in male circumcision.

Material and Methods

After receiving approval from the Ethical Committee of Tanta Faculty of Medicine, Egypt, a 22-questions survey was administered individually to the members of the Egyptian Pediatric Surgical Association (EPSA) during the 33rd Congress of EPSA held in Aswan from 13 to 15 November 2018. Questions were designed to cover the key elements of the procedure among pediatric surgeons such as the number of patients managed yearly, preoperative investigations, preferred age of circumcision, anesthesia, different techniques, energy devices used in the procedure, type of stitches, type and time of removal of the dressing, post-circumcision analgesia. Data were collected and analyzed using descriptive statistics (mean, median, and range) in predefined subgroups according to the options for each question.

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Abbreviation:

EPSA : Egyptian Pediatric Surgical Association.
DPNB : Dorsal Penile Nerve Block.
EMLA : Eutectic Mixture of Local Anesthetics.
WHO : World Health Organization.
UTI : Urinary Tract Infection.

Results

Responses were received from 132 surgeons; six responses were excluded (incomplete and duplicate responses), yielding 126 survey charts for analysis. 27% of responders who involved in the routine practice of circumcision operated more than 150 cases per year, 23% of the responders operated between 100 to 150 cases per year, 15.1% of the responders were residents, 32.5% were specialists and 52.4% were consultants Fig. (1).

From the responders, 35% preferred to do circumcision at the neonatal period, 58.7% preferred to do it between one to three months and 6.3% prefered to delay the procedure after 3 months.

Regarding the preferred technique, 45.2% of the surgeons preferred Guillotine method using bone cutting forceps, 10.4% used bone cutting forceps with heat cautery device, 11.1 % used Gomco device, 8,7% used plastibell device, 7.1% use mogen clamp, and 17.5% of the pediatric surgeons prefer dissection method Fig. (2).

Electrocautery for sealing minute bleeding vessels was used by 88.1% of the responders used; (81.7% used bipolar diathermy and only 6.4% used monopolar diathermy), 11.9% used heat cautery devices. Monopolar diathermy was used cautiously, and the electrodes were equally divided between buttocks and thigh and it was used only for sealing minute vessels.

Also, 8% of the responders never used sutures in circumcision, 42.9% always used sutures and 50.8% sometimes use sutures and preferred absorbable types (vicryl 65% and chromic catgut 35%).

There was wide variation in the type of anesthesia used; 70.6% used local anesthesia for children younger than 6 months and general anesthesia for all children older than 6 months, 8% always used local anesthesia for all children and 21.4% preferred general anesthesia after the neonatal period. There is also a wide variation in the types of local anesthesia used; 70% preferred topical anesthetic creams and 30% preferred penile nerve block.

As regard to the postoperative medications, 59.5% prescribed local antibiotic cream and analgesics (oral or suppository), 15.9% prescribed systemic antibiotic and analgesics and 24.6% prescribed only post-operative analgesics for a short period.

The majority (61%) recommended removal of the dressing after 24 hours, 37.2% recommended removal of the dressing after 48 hours and 1.8% remove the dressing after 3 days. While 75% of them recommended soaking the dressing off in a warm bath before removal and 25% remove it without soaking.

The majority (70.4%) of the responders regularly reviewed the cases in the outpatient clinics for one to 2 weeks and 28.6% have selective follow-up only for the cases circumcised for medical reasons.

With review the special comments of the pediatric surgeons, traditional circumcision was more common in rural areas and among poorer communities by non-medically trained providers without the use of anesthesia or sutures and it was the main reason for a lot of complications that need ed a redo of the surgery.

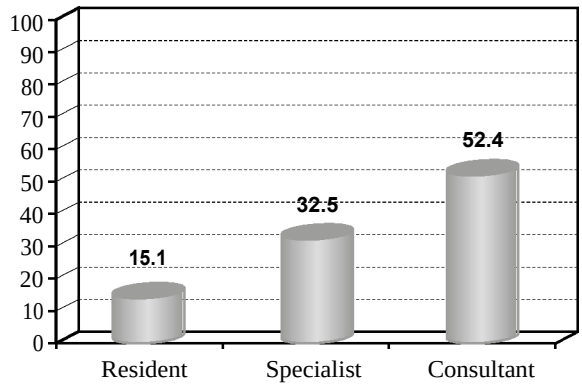

Fig. (1): Percentage of EPSA responders.

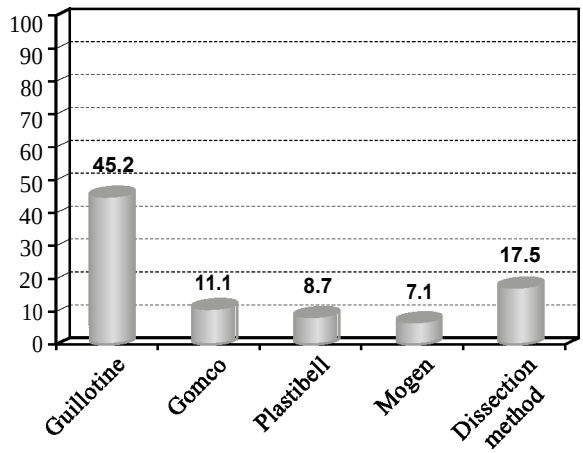

Fig. (2): Percentage of circumcision techniques used by EPSA members.

Discussion

This study may be considered as the first national survey conducted on male circumcision in Egypt and reflects the practice pattern of a large group of Egyptian pediatric surgeons as regard to patient selection, the timing of the procedure,

different techniques used, post-operative care and follow-up.

Although, data on the optimal timing of circumcision is lacking and there are no studies that give reliable data about the number of males who are circumcised after birth for elective or surgical indications but most of the procedures in the United States were performed in newborns [6].

Many cases of neonatal circumcision are performed through the first week and may be in ceremonies like Muslims who ceremonially practice circumcision in the 7th day and Jewish who ceremonially perform circumcision on the 8th day [7]. 35% of the responders prefered to do circumcision at the neonatal period to decrease the rate of post-operative bleeding that was encountered in older children and also may be due to the less parental education in rural areas to maintain penile hygiene without removing the foreskin and to guard against Urinary Tract Infection (UTI). UTI is more common in the first year of life and affects up to 1-2% of boys and 4% of girls by age 12 [8]. Intervention is often delayed until the child reaches 6 months of life to be done under general anesthesia as recommended by a group of pediatric surgeons.

Circumcision is a simple elective operation that should have minor complications [9]. The choice of technique is determined by the clinician's training and device availability. The three commonly used devices; plastibell device, gomco clamp, and mogen clamp were used by about 27% of pediatric surgeons in Egypt.

Guillotine method using bone cutting forceps is still the most common method of circumcision practiced in our institutions due to its availability. This method is quick, simple and relatively bloodless but has a risk of glans amputation. This risk is increased in younger children as the glans disappear under the foreskin and thus is more easily injured inadvertently [10].

Gomco clamp is the second choice for pediatric surgeons due to its availability in some institutions but it is not devoid of risk of post-operative bleeding as the hemostatic mechanism is less effective in older patients, so the bleeding is localized to vessels at the skin edges that require suture ligation for hemostatic control [11].

Plastibell device is the third choice but the choice of a correctly sized plastibell is very important to avoid oedema and difficulty in urination due to compression of the glans. The us e of un sizable device may lead to proximal or distal dislocation. The mean time for plastibell separation was 6 days. The percentage of delayed separation (>10 days) of the retained device was 2.9%. The risk of bleeding from the small frenular vessels cannot be predictable if the prepuce is retracted properly [12].

There is no ideal device, and no one is clearly superior. Each has its own advantages and disadvantages in terms of reusability, the timing of procedure and potential complications [13]. The rate of complications related to the different procedures is nearly 2-6% in neonates [14]. This rate increases 10-20-fold for older children [15]. Inadequate training of general practitioners leads to this poor result [16]. Bleeding still the most common complication of male circumcision and it can be a life-threatening condition that needs emergency control [17]. Diathermy is an effective method and superior to ligatures in controlling minute points and small bleeding vessels.

Electrocautery was used by most of the pediatric surgeons and bipolar diathermy is the commonest method in controlling bleeding vessels in Egypt. The use of monopolar diathermy as a method of electrocautery in circumcision is controversial because the spread of the curren ce lead to vascular occlusion and there have been many reports showing penile necrosis especially in younger children [18].

This is more likely to occur due to the small diameter of the penis, so the current flow is greater at any point. This risk can be reduced by creating a contact between the penis and either the thigh or abdomen. Not all the pediatric surgeons that use monopolar circumcision consciously create this contact. Bipolar diathermy is safer because the currence extension through the shaft of the penis is minimized [18]. To avoid these risk surgeons are using bipolar forceps that allow for coagulation of vessels before their division [19]. 42% of pediatric surgeons always use interrupted absorbable suture (vicryl or catgut) to oppose the skin edges and also to control minute bleeding.

Circumcision is one of the painful procedures [20] usually done under general anesthesia; however, post-operative analgesia in neonates is often not prescribed [21]. The World Health Organization (WHO) recommended local anesthesia in neonates and infants up to boys 5 years old [22].

Lidocaine 4% cream (LMX4) and EMLA cream (a eutectic mixture of lidocaine 2.5% and prilocaine 2.5%) are recommended as local topical anesthetics which are easy to be used without special training

but it has some side effects like skin irritation, erythema and may be blistering [23]. Local topical anesthesia is recommended by the pediatric surgeons up to 6 months due to its safety and availability.

Dorsal nerve blocks are practiced by a small group of pediatric surgeons in our institutions due to its excellent safety records [24]. It is effective as post-operative analgesia and allows for early mobilization in older children with no retention of urine as caudal block [25].

No specific analgesia or oral medication is prescribed by all pediatric surgeons but 76% of them use oral analgesia or paracetamol suppositories in the post-operative period. Oral analgesia is not the best pain killer because the child has to be fully conscious to receive it, which make the parents agitated [26].

A systematic review of randomized controlled trials of pain relief for neonatal circumcision found that a Dorsal Penile Nerve Block (DPNB), which blocks the twin dorsal penile nerves and branches, is the most effective method of local anesthesia [27] and has an excellent safety record.

Circumcision dressings are challenging. Correctly applied dressings prevent sticking of the raw area to the child clothing and so decrease post-operative pain. 25% of urologists recommended no dressing after circumcision because 'they fall off before the child gets to the ward' even though there are different ways described for keeping the dressings in place [28]. Similarly, 10% of pediatric surgeons use no dressing for the same reason. 90% use traditional paraffin gauze dressings mostly with a ribbon dressing, vaseline and antibiotic dressings that decrease the rate of changing and sticking to the clothes.

60% of the pediatric surgeons recommended removal of the dressings after one day after soaking the dressings in a warm bath to prevent sticking of the raw area to the dressing and so decrease pain and rebreeding.

Vaseline prevents evaporation and enhances healing by keeping the raw area moist. Antibiotic creams are easily used than vaseline, dry quickly and so have to be applied more frequently by the parents. One of the problems with circumcision is the adhesions between the shaft skin and the glans which leads to dissatisfaction of parents, so the glans must be coated to reduce inflammation and exudation and hence reduce skin bridges [18]. After removal of the dressing, most of the pediatric surgeons recommend the application of antibiotic creams directly to the penis to keep the area clean.

There is a report about safe, sterile, cost-effective and simply applied to dress utilizing sterile gauze, paraffin gauze and MicroporeTM tape. This dressing achieves safe tamponade and allowing easy voiding [29].

The present survey was limited by the inability to correlate the clinical practice with the outcome results and the fact that not all members of EPSA responded to e-mails or personal communication.

Conclusion:

The current survey reflects the diversity in the practice patterns of circumcision among pediatric surgeons in Egypt. There are variations in some areas of the practice of circumcision and consensus in others. The traditional guillotine method using bone cutting forceps is still the dominant method in most of the institutions. Communications with the parents should be improved. The pain control measures, the post-procedure care should be discussed especially as most circumcisions are carried out as day cases.

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Conflicts of interest:

There were no conflicts of interest.

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نمط الممارسة المعاصرة لختان الذكور بين جراحى الآطفال المصريين

إن هذه الورقة البحثية هى لتحديد النمط والطريقة المعاصرة لختان الذكور بين جراحى الآطفال فى مصر.

خلال المؤتمر الثالث والثلاثون لجمعية جراحة الآطفال المصرية فى نوفمبر ٢٠١٨ تم عمل إستبيان يحتوى على ٢٢ سؤال عن ختان الذكور، للإستفسار عن الطرق المتبعة وإنتشارها والمشاكل المترتبة على كل طريقة.

تم آخذ نتيجة الإستبيان من ١٢٦ جراح آطفال مصرى.

٢٧٪ منهم يجرى آكثر من ١٥٠ حالة ختان فى السنة.

٣٥٪ يجرى الختان فى فترة حديثى الولادة.

٤٥.٢٪ يجرى الختان عن طريق إستخدام مقص العظام.

٨٨.١٪ يفضل إستخدام الكى الحرارى للتحكم فى النزيف (٨١.٧٪ يستعمل جهاز ثنائى القطب للكى الحرارى و٦.٤٪ يستخدم آحادى القطب).

٨٪ منهم لا يستخدم آى خيوط جراحية فى عملية الختان.

٦١٪ من الجراحين يفضلون إزالة الغيار بعد ٢٤ ساعة من الجراحة.

٧٠.٤٪ منهم يفضلون متابعة الحالة فى العيادة الخارجية بعد الجراحة على فترات مختلفة.

هناك إختلاف كبير بين الجراحين فى إستخدام التخدير وتسكين الآلم آثناء آو بعد الجراحة من إختلاف الطرق إلى إختلاف سن الطفل وقت الختان.