

Surgical and postoperative complications of circumcision performed by unqualified individuals: the need for regulatory oversight

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ABSTRACT

Aims: Circumcision is a common surgical procedure performed for many reasons. When conducted by non-medical personnel, the risk of complications increases significantly. This retrospective study analyzes pediatric cases requiring emergency care due to complications from non-medical circumcisions.

Methods: Over three months, data from ten pediatric patients who underwent circumcision by non-medical individuals and later required emergency department visits were analyzed. Age, admission time, symptoms, and clinical findings were recorded.

Results: Patients, aged 3 months to 13 years, presented within 40 minutes to three weeks post-circumcision. Common complications included bleeding, hematoma, improper incision, and wound dehiscence. Two patients required additional surgery. Despite legal restrictions, such procedures persist in multiple regions.

Conclusion: Non-medical circumcision increases complication risks, leading to physical and psychological distress. Strict regulation enforcement and public awareness are essential to ensuring safe, medically supervised procedures.

Keywords: Circumcision, complications, pediatric urology

INTRODUCTION

Circumcision is the surgical removal of the foreskin that covers the glans penis (prepuce) to expose the penil tip.¹ With a history of approximately 5000 years, it is one of the oldest and most commonly performed surgical procedures.²

Circumcision is a widely performed surgical procedure with various medical, cultural, and religious indications.³ While generally considered safe, it is not without risks, as complications such as bleeding, infection, and inadequate or excessive tissue removal may occur.^{4,5} The frequency and severity of these complications depend on multiple factors, including the experience of the practitioner and the conditions under which the procedure is performed.⁶

This study aims to retrospectively evaluate ten cases of children circumcised by non-medical practitioners who subsequently presented to the emergency department and were referred to the pediatric urology department.

METHODS

This study was conducted with the permission of the Non-interventional Clinical Researches Ethics Committee of Van Training and Research Hospital (Date: 29.11.2024, Decision No: GOKAEK-2024-01-10). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

This study was designed as a retrospective analysis conducted in a tertiary training and research hospital. Patients included in the study were children who had undergone circumcision performed by unqualified individuals and subsequently presented to the emergency department due to post-circumcision complications between June and September 2023. These patients were later referred to the pediatric urology department for further evaluation and management. All patients consulted were reviewed. Data collected included patient age, time of hospital admission, presenting complaints, and clinical examination findings.

Unqualified individuals were defined as those who lacked formal medical education, did not possess any official healthcare certification, and were not trained in sterile surgical techniques. In the present study, patients were evaluated based on this definition, and only those circumcised by unqualified individuals were included. The classification of the practitioner as qualified or unqualified was based on the statements provided by the patients' families at the time of admission.

RESULTS

A total of 10 patients who presented to the emergency department following circumcision procedures performed by unqualified individuals and were subsequently referred to the pediatric urology department were included in the study.

The patients were aged between 3 months and 13 years, with the time to hospital admission ranging from 40 minutes to three weeks (**Figure 1, Table**). The most common presenting complaints included abnormal scabbing on the glans (20%), bleeding (20%), hematoma (10%), improper circumcision incisions and wound dehiscence (40%) (**Figure 2, 3**).



Figure 1. 13 years old, 9th day postoperatively, no additional complaints after wound care and regular dressing

Two patients (20%) required additional surgical intervention. An 8-year-old patient with uncontrolled bleeding despite compression dressings was taken to the operating room, where bleeding sites were cauterized and visible blood vessels were individually ligated (**Figure 4**). The patient was discharged on the third postoperative day without complications. Another



Figure 2. The 3-month-old baby, after local anesthesia, the procedure could not be continued. No information could be obtained about the drug and its dosage. He was evaluated by the pediatrician for poisoning. The patient, whose glans blood flow was normal and urine output was easy, was recommended circumcision under elective conditions.

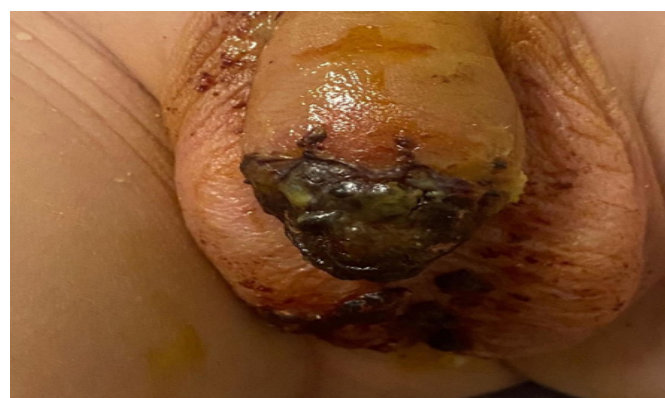


Figure 3. 5 years old, 10th postoperative day, no additional complaints after local care

8-year-old patient (**Figure 5**), who had been circumcised seven days earlier and developed wound dehiscence following balanitis treatment, underwent surgical intervention where the wound edges were trimmed and re-sutured. No further complications were observed during follow-up.

Patients from three different provinces were identified; however, no information could be obtained from the parents regarding the identity of the practitioner or the location of the procedure. Due to the high incidence of complications in a short period, discussions with local authorities were initiated.

Table. Patients, postoperative time, complication, treatment

	Year	Postoperative day	Complication	Treatment
1	13 y	9 th day	Wound dehissence and infection	No additional complaints after wound care and regular dressing
2	6 y	10 th day	Wound dehissence and infection	No additional complaints after wound care and regular dressing
3	5 y	7 th day	Wound dehissence and infection	No additional complaints after wound care and regular dressing
4	9 y	7 th day	Crusting on the glans	All complaints regressed after medical therapy
5	3 m	20 minutes	Ecchymosis at the root of the penis	Recommended circumcision under elective conditions
6	6 y	10 th day	Crusting on the glans	Antibiotic local ointment treatment
7	8 y	7 th day	Infection	No additional complaints after wound care and regular dressing
8	5 y	10 th day	Crusting on the glans	No additional complaints after local care
9	8 y	1 st day	Bleeding	Bleeding foci were cauterized. Visible vascular structures were tied one by one
10	8 y	7 th day	Wound dehissence, infection and bleeding	Wound edges were trimmed and re-sutured



Figure 4. 8 years old patient, on the first postoperative day, whose bleeding did not stop after pressure dressing and local care, was taken to the operating table. The suture line was opened. Bleeding foci were cauterized. Visible vascular structures were tied one by one. He was discharged three days later.

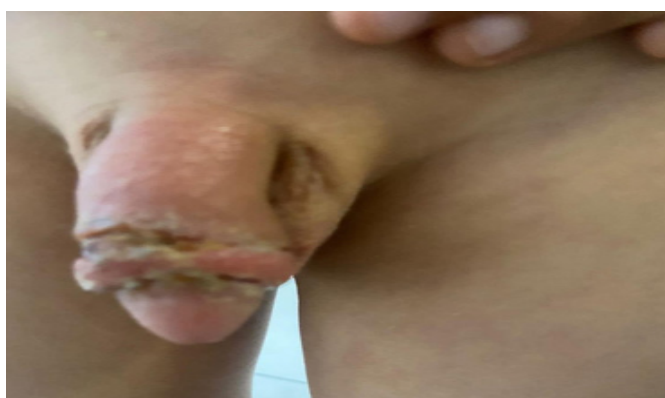


Figure 5. 8 years old, 7th postoperative day; after balanitis treatment, wound edges were trimmed and re-sutured

DISCUSSION

Although some anthropologists estimate that circumcision dates back to as early as 10,000 BCE, the earliest historical evidence of circumcision comes from the Ankh-Mahor inscriptions in Egypt, dating to approximately 4000 BCE.⁷ Modern surgical principles were first defined in 1903 by Sir Frederick Treves⁸, and since then, various techniques such as the guillotine method, dorsal slit and excision, sleeve technique, Sheldon method, and various circumcision clamps have been developed.⁹

According to the World Health Organization, approximately 33% of men over the age of 15 worldwide are circumcised.⁵ In Turkey, the median age for circumcision is estimated to be six years, with 15% of circumcisions performed in children under one year of age.⁵ According to a study by Özdemir et al.¹⁰ 85% of circumcisions are performed by traditional circumcisers, 10% by non-medical healthcare personnel, and only 5% by surgeons. Despite being one of the most frequently performed surgical procedures in Türkiye, the long-standing exclusion of circumcision from social security coverage has significantly contributed to these figures.¹¹

The complication rate for circumcision reported in the literature ranges from 0.2% to 2%, but in inappropriate conditions, this rate can increase to 8–17%.⁴ In mass circumcision events, the complication rate can reach up

to 95%, leading to severe complications that are difficult to manage.⁵

Have documented an incidence of bleeding and infection in medically performed circumcisions, supporting the idea that these complications can occur even under the most favorable conditions.^{4,5} However, studies such as Ceylan et al.⁶ have also shown that complication rates are significantly higher in procedures performed by unqualified individuals. This comparison highlights the need to ensure that circumcisions are performed in controlled medical environments to minimize adverse outcomes. By aligning our data with the existing literature, our study contributes to the ongoing debate about best practices and safety precautions in circumcision procedures.

Complications of circumcision can arise from anesthesia and/or the surgical procedure itself. Early complications include excessive shortening of the skin or mucosa, insufficient circumcision, injury or excision of the glans, bleeding, hematoma, infection, suture reactions, pain, and psychosocial issues. Late complications include castration anxiety, urethral fistula, meatal stenosis, skin bridges, and dissatisfaction with the outcome.⁴ Local anesthesia-related complications such as methemoglobinemia, hematoma, convulsions, penile necrosis, cardiac arrhythmia, and arrest may also occur.¹² General anesthesia-related complications include hypoxia, apnea, laryngeal spasm, aspiration pneumonia, cardiac arrest, convulsions, and malignant hyperthermia.¹³

The most common complications are bleeding and infection, while the most severe is glans amputation.⁵ These were the most common complications in this study. The mortality risk associated with circumcision is reported as 2 per million in the literature.¹⁴

In countries where circumcision is routinely performed, circumcision is frequently performed under inappropriate conditions due to both traditional habits and the inability of health institutions to cope with this workload. A study from Yemen reported distal penile amputation in a 5-month-old patient and death in a 20-day-old patient.¹⁵ Compared to the complications in this study, these two cases are much more catastrophic. However, patients presenting to health institutions may be just the tip of the iceberg.

A study conducted in the United States reported that 7.4% of all pediatric urology consultations at the study hospital were related to neonatal circumcision, and approximately 4.7% of all surgeries performed in the pediatric surgery department were for circumcision complication repairs.¹⁶

Proper preoperative preparation, including a detailed physical examination, medical history, and laboratory tests, is essential.¹¹ Thorough preparation can help reduce complication rates and prevent the oversight of coexisting anomalies. If an aseptic environment is not provided, which is not possible in home conditions, blood-borne diseases can be transmitted to both the operator and the patient.

Circumcision in Türkiye was included in the social security system's coverage in 2007. Its prior exclusion led to many



circumcisions being performed by unqualified individuals, and in some regions, non-medical circumcision continues under inadequate conditions and has become normalized. Law enforcement has been insufficient or indifferent in addressing this issue.

In 2007, the American Academy of Pediatrics stated that the health benefits of neonatal male circumcision outweigh the risks. It stated that families should be given a choice about neonatal male circumcision and that the procedure should be reimbursed by third parties. It was written that circumcisors should have adequate training and that both sterile techniques and effective pain management should be used. It was also noted in this study that untrained providers performing circumcisions had more complications than well-trained providers performing the procedure.¹⁷

A law was passed in Türkiye in 2014 banning circumcision by non-medical practitioners. However, this law allows all physicians, regardless of their surgical training or circumcision expertise, to perform circumcision.¹⁸ We believe that a certification program for physicians who do not have detailed training, especially those who are not trained in circumcision, on issues such as sterilization conditions, suture techniques, pain management, etc., will reduce complications. Families should be repeatedly told that circumcision should not be performed by people who have not received training on this subject or under inappropriate conditions.

Limitations

The limitations of this study are; first of all, the inability to reach the people who performed the circumcision. The way the circumcision was performed, what was done in the preoperative evaluation, the quality of the materials used, how asepsis conditions were provided and how postoperative care was provided could not be clarified. In addition, the patients identified were only those who were brought to the health institution by their families and then consulted with the relevant department. Patients who were not brought to the health institution could not be identified.

To ensure competency in performing circumcision, each country's health authority should establish specific training requirements, including the type of courses required, the number of supervised procedures, and the minimum number of circumcisions needed for certification. Otherwise, what is considered a "simple" procedure can turn into a "major nightmare".¹⁶

CONCLUSION

To prevent the financial and emotional burden caused by complications arising from procedures performed by unqualified individuals in inappropriate conditions, circumcision should be performed by specialized surgeons under proper medical conditions. As physicians, we are responsible not only for treating patients but also for providing preventive healthcare. Raising public awareness can help prevent irreversible complications by ensuring that circumcision is performed by qualified professionals in appropriate conditions.

ETHICAL DECLARATIONS

Ethics Committee Approval

This study was conducted with the permission of the Non-interventional Clinical Researches Ethics Committee of Van Training and Research Hospital (Date: 29.11.2024, Decision No: GOKAEK-2024-01-10).

Informed Consent

Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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