

# COMPLICATIONS OF CIRCUMCISION IN THE PEDIATRIC POPULATION AGED 0 TO 15 YEARS

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## Abstract

Circumcision is considered one of the oldest surgical procedure in the world. About 25% of all the men in the world are circumcised. Because of this reason, we can also say that circumcision is the most common surgical operation. Most circumcisions are performed for religious beliefs and only a few for medical reasons or cosmetic ones.

Between 2011 and 2015 we have evaluated all children who were treated in our Clinic for phymosis, undergoing different surgical interventions, among which circumcision has been included.

From 127 circumcisions performed in a group of 1196 children, there were 14 complications: preputial haematoma, partial glandular amputation, urethral injury, infections after wound suture opening, immediately seen and necrosis of the glans and fusion between glans and prepuce, late ones.

In spite of the fact that is one of the most common surgical procedures, we must be aware of great risks if this procedure is not performed properly, with care.

**Key words:** children, circumcision, complications.

## Introduction

Circumcision is considered one of the oldest surgical procedure in the world. About 25% of all the men in the world are circumcised [1]. Because of this reason, we can also say that circumcision is the most common surgical operation. Most circumcisions are performed for religious beliefs and only a few for medical reasons or cosmetic ones [2].

Literature mentions a complication rate between 1 and 15% for circumcisions, including all procedures [3]. Most of them are minor and easily repaired complications, like haematoma, infections after suture opening, others are very severe like amputation of the glans or glans necrosis, both of them with urethral injury.

## Purpose

The aim of this study is to study complications occurred in circumcision in children between 0 and 15 years.

## Material and method

The trial was conducted in the Clinic of Pediatric and Orthopaedic Surgery of "St. Andrew" Emergency County Hospital of Constantza, between 2011 and 2015. During this period we verified 1196 cases of phimosis. We looked at those who were circumcised (127 cases), especially those with complications (14 cases). All cases taken in discussion were between 0 and 15 years old. We have investigated only children between this age and have not extended our study over the age of 15 years. The study concluded a great number of circumcision because of the fact that ninety-seven percent of the Romanian Muslims are residents of the two counties forming Northern Dobruja: eighty-five percent live in Constanța County, and twelve percent in Tulcea County [4,5], forming 6% of local population [6].

## Results and discussions

In the Clinic of Pediatric and Orthopaedic Surgery of "St. Andrew" Emergency County Hospital of Constantza, between 2011 and 2015, we have studied patients with foreskin pathology aged between 0 and 15 years. There were 1196 patients treated by different methods. 127 of them were circumcised for religious beliefs, social or medical causes.

Among those 127 circumcised patients we have found 14 complications, early and late ones. Complications are shown in table 1 below. The rate of complications (figure 1) is similar with the one mentioned in the literature [3].

Table 1 – Distribution of complications in our study.

Complication	No. of cases
Preputial haematoma	8
Partial glandular amputation	1
Urethral injury	2
Infections after wound suture opening	3
Necrosis of the glans	2
Fusion between glans and prepuce	1

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Figure 1 – The rate of complications after circumcision in the study group.

Among those with haematomas, 3 of them developed an infection with opening of the wound. The incomplete glans was patched with buccal mucosa (fig. 2).

One case with fistula of the urethra was close by double layered suture and the other case of urethral injury with total distal urethral amputation (fig. 3) was solved

using the Duplay style and a hypospadias repair was performed, with a tubular incised plate urethroplasty technique with buccal mucosa as a patch graft.

The fusion between glans and prepuce was treated by freeing the adhesions. Infections were treated locally by daily dressing and with systemic antibiotherapy.

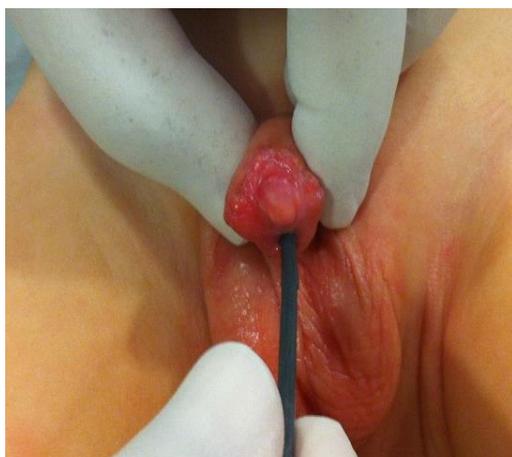


Figure 2 – Incomplete glans amputation after circumcision, with stenosis of the meatus.



Figure 3 - Total distal urethral amputation after circumcision.

## Discussion

If we compare the frequency of our complications with the one in the literature, we find that indeed bleeding and haematoma is the most frequent one [7-10]. In most of the cases bleeding is minor and haemostasis can be achieved by pressure on the area or electrocoagulation. Excessive bleeding may be due to abnormal vessels [10] or systemic blood coagulation disorders [9].

Concerning infected haematoma or simple infection of the wound, this is mentioned in up to 10% of cases [7,11]. Usually it may appear local inflammatory changes, but occasionally there may be ulceration and pus. Most infections are treated locally, but in some cases systemic antibiotherapy is needed to prevent sepsis and even death [12-14].

The etiology of urethral fistulas is various in the literature. It may appear due to a misplaced suture at the frenulum for haemostasis [15], infection [16] or very rare anomalies of the penis, such as megalourethra [17].

Stenosis of the meatus of the urethra, complication found in our study, may be caused by meatal ulceration [18,19]. If not treated in time by meatotomy or other enlargement procedures, stenosis may be the cause of recurrent pyelonephritis and obstructive uropathy [20].

Partial or total amputation of the glans of the penis or the penis itself is a very important and serious complication, with a very difficult management of correction, with poor results [21,22].

Other complications mentioned in the literature, but not found in our study are carcinoma of the penis [23], erectile dysfunction [24], psychological complications [25,26], skin and mucosal dystrophies, etc.

Due to all these possible complications and of the fact that the majority of boys don't need circumcision, the

identification of ones who don't need this procedure is very important. Contraindications for circumcision include preterm children, those with blood disorders, people with a family history of clotting disorders, and those with birth defects such as hypospadias, or chordee. Abnormalities often missed are those with poor body skin, such as newborns with congenital penoscrotal skin or buried penis. Circumcision of these children often lead to trapped or hidden penis, which requires frequent reinterventions [27].

## Conclusions

Complications after circumcision are somewhat rare, but some of them very severe. While most acute complications can be managed quickly and easily with minimal morbidity, others may be catastrophic.

Most of the boys do not need an intervention on the prepuce. It is considered that only about 1,5% need some kind of intervention to treat phimosis [28].

Because of the fact that, even in present days, a lot of boys are circumcised for religious beliefs by different individuals at home or during communal circumcisions, most of them inexperienced, the risk of complications is high.

For these reasons, before surgery, parents should be informed of the procedure and especially of its risks and should be required to provide their informed consent for the intervention. They must know the possible health benefits of childhood circumcision in balance with the complication rate.

Overall these procedures should only be done by qualified personnel, to reduce as much as possible potential complications.

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