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Case Report

Urethral Obstruction due to Penile Amputation Following Circumcision in a Neonate: A Case Report -

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ABSTRACT

Background: Circumcision is one of the oldest and one of the most frequently performed surgical procedures in neonates.

Case summary: We report a case of a neonate that presented with difficulty in passing urine following amputation of the glans penis during circumcision. Meatoplasty yielded a good result.

Conclusion: Penile amputation is a rare complication of circumcision and urinary (urethral) obstruction may follow if meatoplasty was not performed. Practitioners involved in circumcision should be properly trained on the act of circumcision to avoid complications such as penile glans amputation or other complications of neonatal circumcision.

INTRODUCTION

Circumcision is one of the oldest and one of the most frequently performed surgical procedures in neonates [1]. In the Old Testament and in the Egyptian text, there are descriptions of circumcision that cuts across several cultures [2]. Krill et al reported that in 2008 about one million neonatal circumcisions were performed in the United States of America [2]. In 1989, American Association of Pediatrics (AAP) neither recommended nor condemned routine neonatal circumcision [3]. However, in 2012, AAP asserts that the preventive health benefits of circumcision outweigh the risk of the procedure when it is performed by trained professionals under sterile condition and appropriate pain management [4]. Researchers have documented the benefits of circumcision to include decreased rate of penile cancer, prevention of urinary tract infection, HIV and pyelonephritis [5, 6]. Despite the benefits accorded circumcision, it still remains controversial even among medical professionals [7]. Circumcision, like any surgical procedure, does carry the risk of complications. A few of the early complications include bleeding, infection, epidermal inclusion cysts, redundant prepuce and penile adhesions. Late complications which may occur later in life include psychological effects and sexual dysfunction. Penile (glanular) amputation is an uncommon complication of circumcision. The rarity of this complication of glans injury with an associated urethral obstruction (following healing) makes it worthy of being reported.

CASE PRESENTATION

A 4-week old male neonate presented through the pediatric emergency room with a 2-week history of difficulty in passing urine following injury to the glans penis during circumcision 3 weeks earlier. The difficulty in urine passage was characterized by straining on micturition, poor stream and intermittency. The parents of the neonate also complained that they cannot see the opening where the urine comes out from. There was an associated fever and suprapubic fullness. The fever was low grade and continuous. The suprapubic fullness reduces but not completely when the child passes urine. The above symptoms followed severing of the "distal" part of the penis following an attempt to perform circumcision by a nurse in a health center located in the rural area of Enugu State, Nigeria. The 'circumcision' was said to be characterized by excessive bleeding, marked swelling but the neonate was able to pass urine without difficulties few days following the circumcision. As the days go by, the difficulty in urination developed and was progressively getting worse. This made the parents to seek medical help. Before the circumcision was performed, the baby was passing urine normally without difficulties.

The neonate was a product of term gestation, born by a 36-year old para-3 mother. Delivery was through a caesarian section and the indication for the caesarian section was prolonged labour with lack of progress. He cried spontaneously at birth, passed meconium within 24 hours of postnatal life and suckles the breast well. The mother had no febrile illness and had no skin rashes or foul smelling vaginal discharge during pregnancy. She is neither a known hypertensive nor a diabetic.

On clinical evaluation at presentation, the baby was unkempt with skin rashes. The temperature was 38.2 ^{0}C, respiratory rate of 38 cycles per minute, heart rate 170 beats per minute, occipitofrontal circumference (OFC) 36 centimeter (cm). His weight was 2.5 kilograms, the reason for this low birth weight is not known. The external genitalia showed a penile stump with the glans penis amputated and the urethral opening obliterated (Figure 1 shows the lateral view and figure 2 shows the anterior posterior view). Urine occasionally oozes out (from no definite point) from the scarred surfaces of the amputated penile shaft. The stretched penile length was 2.1 centimeters.

The neonate was optimized and investigated. Complete blood count showed a total white blood cell count of 11.1 x 10^{9}/L and hemoglobin level of 16.1 grams per deciliter. Blood chemistry showed no abnormality (serum electrolytes, urea and creatinine were within normal range). An ultrasound of the abdomen and pelvis showed normal sized kidneys without hydronephrosis. The urinary bladder contained residual urine but there was no evidence of secondary bladder changes. A diagnosis of urethral obstruction secondary to complications of circumcision was made and a decision was taken to pass a urethral catheter. Attempt at urethral catheterization (bedside) was unsuccessful and the patient was taken to theatre for passage of the catheter under anesthesia. In theatre, the urethral opening could not be located in the penile stump and a urethrotomy with dorsal meatoplasty was performed. A urethral catheter (size 8 all silicon) was left in situ for one week to serve as a stent and for urinary diversion (Figure 3).

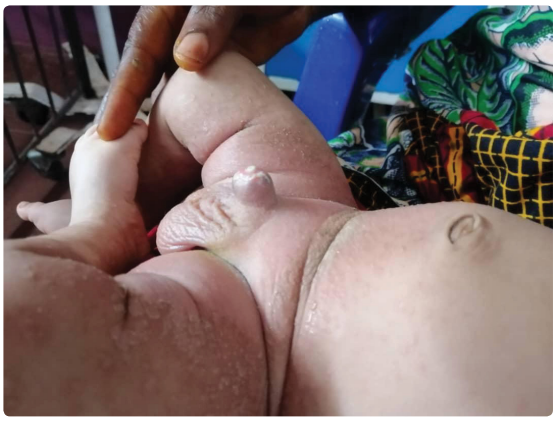

Figure 1: Amputated glans penis (Lateral view).

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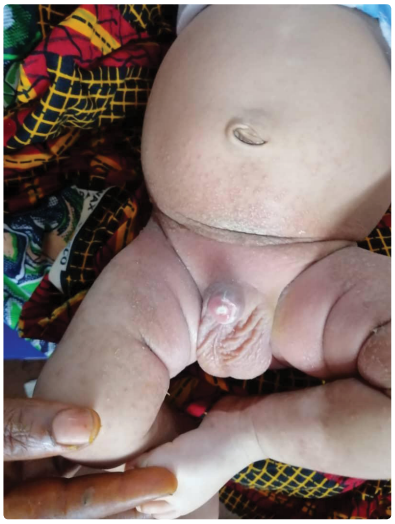

Figure 2: Amputated glans penis (AP view).

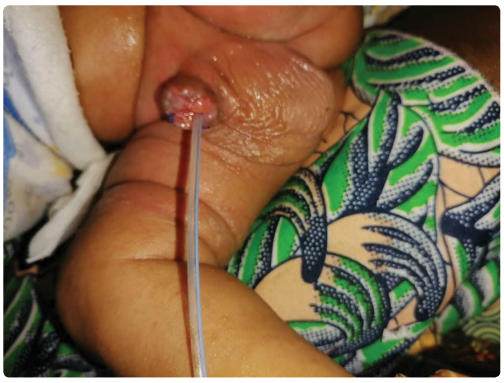

Figure 3: Catheter passed.

One week post procedure, catheter was removed and meatal dilatation performed for one week. The baby currently passes urine freely. He is being followed up in the outpatient clinic and has no complaint.

DISCUSSION

Circumcision, a cultural and religious practice, has well documented risks and benefits [8]. The removal of the prepuce to expose the glans penis has been performed for more than 5000 years [9]. It is one of the oldest and most controversial surgical procedures performed globally [10]. There are several complications that can occur following circumcision ranging from mild to severe [11]. Glans penis amputation is at the extreme of the spectrum and is a technical fault of the operator that should not happen [11].

Other series on complications of circumcision have also reported amputation of the glans penis following circumcision [12, 13]. Even adults are not spared from this complication of circumcision; Mba et al reported penile amputation following adult circumcision [14]. The amputation of the glans penis may be immediate or could be delayed following its gangrene and necrosis [15]. It is important to note that this complication of penile amputation is mostly seen when circumcision is performed by unqualified agents [16]. Circumcision is usually a safe and simple procedure if it is performed by well trained and experienced hands [11]. This complication of circumcision is more common in sub-Saharan Africa where circumcision is seen as minor surgery and paramedics perform the procedure under unsafe environments [11, 17].

The preferred treatment for glans penis amputation may be dependent on the interval between the amputation and presentation to the hospital. There is a role for autotransplantation in the early phases [18]. High success rate has been reported if the autotransplantation is performed within 8 hours of the incident if the glans penis is properly preserved [16]. However, Yilmaz et al reported that autotransplantation can still be done up to 18 hours after the amputation of the glans penis with preservation of aesthetic and neural functions [19]. In late presenters and in suboptimal tissue quality, closure of the corpora carvenosa and meatoplasty are performed so that the patient can urinate freely without straining. Microsurgery is required for vascular anastomosis and the absence of facilities coupled with late presentation forecloses glans autotransplantation in low income country like Nigeria. Just like in the index patient who presented about 3 weeks after the glans amputation. Autotransplantation was therefore not an option and was completely ruled out. Complete penile amputation and fournier's gangrene can also occur as a complication of circumcision.

Obstruction of the urethra occurs by fibrosis following the healing process that occurs around the raw areas of the amputated penis. Meatal obstruction is associated with mechanical and infectious complications of the urinary tract [11]. This obstruction can be at the level of the remnant skin or at the level of the urethra. Hence, there is need for meatoplasty to avoid urinary obstruction and associated discomfort while passing urine (straining). Meatal and urethral dilation also has a role in the treatment of these patients. The goal of management of penile amputation is to achieve patent urethral opening both in the short and long run.

Although our patient is a neonate, there may be psychological disturbances and loss of self-esteem later in life [20]. Some authors have suggested reconstruction of neo-glans penis to avoid psychological issues and adverse effects on sexual function.

CONCLUSION

Penile amputation is a rare complication of circumcision and urinary (urethral) obstruction may follow as a sequel of this complication. Meatoplasty is therefore required. Practitioners involved in circumcision should be properly trained on the act of circumcision to avoid complications such as penile glans amputation.

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