

## Case Report

# Post-Circumcision Dorsal Urethrocutaneous Fistula: A Case Report and Literature Review

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## Abstract

Circumcision is a surgical procedure most commonly performed in neonatal life usually for cultural and religious reasons. However, it is not without its own problems. Circumcision mishaps are relatively common in our environment and Urethrocutaneous Fistula (UCF) is generally regarded as the most common complication following circumcision especially when performed by untrained personnel. Typically it presents as abnormal communication between the urethra and the skin on the ventral surface of the penis. We present an unusual scenario where urine leakage was from the dorsal surface, close to the root of the penis following circumcision, otherwise termed a dorsal urethrocutaneous fistula.

**Keywords:** Circumcision; Urethrocutaneous fistula; Anesthesia

## Introduction

Circumcision is the surgical removal of the prepuce; a layer of foreskin overlying the glans penis [1]. It is most probably one of the oldest and most common surgical procedure performed worldwide [2,3]. In the Western world, it is most commonly performed by medical experts [4], while in developing nations, most of the cases are performed by non-doctors ranging from nurses to traditional birth attendants [5-7]. This leaves urologists and pediatric surgeons with no other choice than to manage the complications arising from performance of the procedure by inadequately trained personnel [7,8]. Circumcision is relatively more commonly performed in our environment than the developed world. Okeke et al. [7] reported circumcision rate of 87% compared to the average rate of between 25% and 33.3% in the world and also a 20.2% complication rate which is unacceptably high compared to different part of the world where complication rate of 1% to 3% has been reported [9,10]. Different authors have reported UCF as the most common complication of circumcision seen in their practice [5,6,8,11]. Other reported complications include redundant skin, glans amputation, penile amputation, excessive skin loss and buried penis. Our search of literature revealed that the previously reported cases of UCF following circumcision were all ventrally located. We report a case of post-circumcision dorsal UCF.

## Case Presentation

He is Master M.A, a 5 months old infant referred from the Pediatric unit of the hospital on account of passage of urine from the upper part of the penis, swollen penis and excessive crying during urination. He was circumcised at 2 months of life at a primary health care centre. The cadre of the circumcisionist is not known. Mother noticed penile swelling few days after the procedure and the child cries and stretches his limbs whenever he wants to urinate. She represented at the same centre from where she was referred to our hospital. On examination, he was ill-looking. The penis was circumcised, disfigured swollen and, the glans penis appears normal with patent external urethra meatus. There was a circumferential chromic catgut suture at the root of the penis, and an almost circumferential hypertrophic scar with urine leakage from the dorsum of the penis close to the root and partly from the meatus. The ventral surface of the penis at the mid portion had a dimple however no urine leakage from the site. The scrotum is well developed with bilateral intrascrotal testis (Figures 1-4).

We made an assessment of post-circumcision dorsal urethrocutaneous fistula. Mother was counseled on the need for surgery and necessary preparations were made. At surgery, there was failed urethra catheterization using 6F feeding tube with the catheter stopping at the root of the penis, close to the site of the fistulous opening. A 6F feeding tube was passed through the fistulous opening and it entered into the bladder, this was clearly demonstrated using methylene blue in a bid to exclude multiple fistulous openings. The penis was degloved with findings of unhealthy poorly vascularized scar tissue, an abnormal tract from the urethra ventrally through the corpus carnosum opening onto the dorsal surface at the root of the penis (Figure 5). A size 6F feeding tube was manipulated through the external urethra meatus into the bladder after removal of the feeding tube passed through the fistula into the bladder.

A tension-free multilayered closure was done by closing the urethra opening transversely with the dartos fascia reinforced over it and a 6F feeding tube left in-situ as stent, followed by skin closure and wound dressing. At postoperative day 3, there was partial skin necrosis

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Figure 1: Urine leakage from dorsal surface of the penis.



Figure 2: Showing swollen penis with scar tissue.



Figure 3: Demonstrating the fistula using methylene blue.



Figure 4: Showing the suture at the root of penis.

on the dorsal aspect of the penis and alternate wound dressing was commenced and the feeding tube was removed on postoperative day



Figure 5: Demonstrating the fistula intraoperatively.



Figure 6: One month postop, wound has healed satisfactorily.

10. He was discharged home on postoperative day 5. At follow up one month post operatively, wound healing was optimal and patient has good and straight stream of urine with no leakage (Figure 6).

### Discussion

Circumcision is performed for various reasons ranging from cultural to medical indications [7,12]. In addition, it has been said to reduce the incidence of sexually transmitted diseases notably HIV by the WHO [13,14]. As simple as the procedure appears to be, it is fraught with complications simply because it is mostly performed by untrained/poorly trained individuals in our environment who are often saddled with the responsibility of doing circumcision on the basis that it is a minor procedure. Most cases of postcircumcision UC fistula occur when performed outside secondary and tertiary care centers [15]. Postcircumcision UC fistula accounts for 74% of UC fistula seen in Ibadan, similar to findings in Ghana [6]. One would assume that since circumcision is a commonly performed procedure, the complication rates would be on the downward trend, however, the reverse is the case in our environment. The complication rate is as high as 21% [7].

Literature review has shown that UC fistula is the most common of all postcircumcision mishaps requiring the services of a urologist/pediatric surgeon and the incidence of UC fistula is on the increase [5,11,15,16]. It is one of the most severe complications of circumcision and can be difficult to manage. A recurrence rate as high as 26% has been reported by Ikuerowo et al. [16] and 16% by Takure et al. [11]. UC fistula is an abnormal communication between the urethra mucosa and the penile skin and the commonest location is usually around the corona on the ventral surface of the penis. This is the usual site of the frenular artery which is a potential cause of bleeding

during circumcision especially when performing the dissection technique without anesthesia which is still commonly practiced in our environment [16]. Attempt to secure homeostasis by suture ligation may lead to accidental bite of the urethra resulting in UC fistula. Repair of UC fistula is usually by means of simple closure of the fistula transversely or by raising a flap most commonly Mathieu's flap [17].

A dorsal UC fistula is a very rare sequelae of circumcision and our search of literature revealed it has not been previously reported. The principle of repair engaged in this case includes penile degloving down to the root of penis, proper anatomical alignment of the urethra, transverse closure of the defect and reinforcement with dartos fascia to achieve a multilayered tension-free closure.

Circumcision as simple as it may be is fraught with complications with consequent devastating effects on the parents. The practice of circumcision without anesthesia should be discouraged as the children are usually uncooperative and this possibly accounts for the myriads of complications that accompanies the procedure. In addition, more needs to be done in the aspect of training and retraining so as to reduce to the barest minimum the incidence of postcircumcision mishaps.

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