Case Report

Iatrogenic partial glanular amputation: A rare complication of circumcision

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ABSTRACT

Circumcision is a customary ritual across many cultures. However, the safety of such procedures remains a concern. A boy underwent circumcision in 2014 by a religious worker at the age of 7 years. Post circumcision, the patient had gradual narrowing of the penis, between the glans and the shaft, with an iatrogenic partial glanular amputation and presented to us at the age of 14 years. The patient underwent end-to-end urethroplasty and glansplasty. Postoperatively, the patient did well and the wound remained healthy. Circumcision has complications even in expert hands. Religious circumcision can result in dreadful complications in children and adolescents.

INTRODUCTION

Religious circumcision remains a customary ritual across cultures. However, the safety of such procedures remains of concern, as in many parts of the world it is performed by unskilled or semiskilled healthcare workers or religious workers. Post circumcision, complications range from 1% to 15%, and this incidence increases with the increasing age of the child. In many communities, circumcision is still performed by unskilled persons rather than the medical practitioners, giving rise to various complications.

CASE REPORT

A 7-year-old boy underwent circumcision in 2014 by a "religious worker" who apparently performs all the circumcisions in the locality. Following the procedure, the patient had gradual narrowing of the penis between the glans and shaft [Figure 1a], resulting in a near-total amputation of the glans. He presented to us 7 years after the procedure, at the age of 14. On examination, the glans was pale, but sensations were intact and it was attached to the penile shaft by a band of tissue. Both the proximal and the distal opening of the urethra were seen at the site of the narrowing [Figure 1b]. Both the openings were calibrated with a 12 Fr Foley catheter, which passed across with ease. The patient underwent end-to-end urethroplasty and glansplasty. The proximal and the distal urethral margins were mobilized, and end-to-end urethroplasty was performed with vicryl 4-0 over a 12 Fr urethral catheter [Figure 2a]. The tunica albuginea and skin were closed thereafter, with multiple *Z*-plasties placed on the skin to prevent a circumferential contracture [Figure 2b]. Postoperatively, the patient did well and the wound remained healthy [Figure 2c]. The patient had nocturnal erections in the glans at 2 months of follow-up.

DISCUSSION

Ischemia of the glans penis is a rare condition and the common underlying etiologies are circumcision, trauma, penile strangulation, and application of vasoconstrictive agents. The incidence of glans injury during circumcision is approximately 0.7 per lakh circumcisions performed.[1]

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Ischemia of the glans penis after circumcision can result from dorsal penile nerve block, inappropriate use of surgical devices, and inadequate surgical technique. Therapeutic options for acute ischemia include hyperbaric therapy, pentoxifylline, enoxaparin, iloprost, antiplatelet, corticosteroids, and surgical management.[2] Almost all the cases of glanular ischemia and circumcision-induced glanular injury reported in the literature belong to the acute setting. Chronic ischemia leading to transection of the glans with urethral injury has not been reported till now.

Raisin *et al*. described their experience of managing glans ischemia associated with urethral injury. They managed these injuries with end-to-end anastomosis for the urethral injury along with anastomosis of the amputated glans either simultaneously or in a staged manner.[2] In their study, the time of presentation was 7–9 days after the circumcision. Similar findings were published by Pepe *et al*.[3] In our case, the surgical repair was performed by de-epithelialization of the glans and shaft and an end-to-end urethroplasty was performed along with the anastomosis of the glans to the penile shaft. The corpora were tucked into the mid-glans using tunical sutures to provide for adequate erection of the glans. Use of grafts has also been reported for glans repair.[4] Aboutaleb reported the use of buccal mucosa to reconstruct the glans.[5]

Although glans injury is more common in the hands of untrained practitioners, these injuries have also been reported after standard circumcision performed by trained surgeons where it is mainly reported with the use of the Mogen clamp.[6] Glans injury typically occurs in cases with ventral adhesions, and it is recommended that practitioners using the Mogen clamp should adequately release the ventral adhesions to prevent glans injury.[6] Visual control of the glans position during the circumcision also helps in preventing this complication. The likelihood of injury is also higher if the circumcision is performed in newborns in the presence of swelling, without general anesthesia. Release of preputial adhesions after thorough physical examination is the key to preventing this complication.[6]

When the procedure is performed by trained doctors, the incidence of complications is primarily related to the expertise of the operator. Lucas *et al*.[1] reported 36 cases of glans injury. They reported three techniques in their program of circumcision in Africa: forceps-guided, dorsal slit, and sleeve resection. They reported that most children who underwent a forceps-guided circumcision or a dorsal slit technique had lacerations, which are easier to repair and have better outcomes than amputations.[1] Urethral injury can result in an iatrogenic hypospadias, which is mainly subcoronal, or in meatal narrowing. Baskin *et al*. described two types of urethral injuries that can occur; namely subcoronal urethrocutaneous fistula and scarred abnormal urethra from partial glans amputation. They successfully repaired the subcoronally located urethrocutaneous fistula by glans splitting and neourethra formation using a vascularized pedicle.[7] Abnormal urethra after partial glans amputation is more difficult to repair, but a satisfactory cosmetic and functional outcome, as in our case, can be achieved by first aligning the urethra and then performing the glansplasty.

Common complications after glans replantation include meatal stenosis, hypospadias, fistula, and glans necrosis. Repercussions range from functional (erectile dysfunction) to cosmetic (near total amputation of the glans) to psychological.

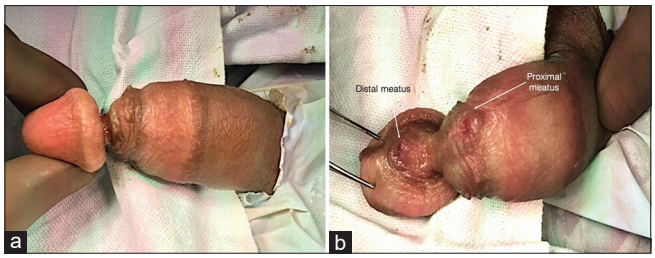

Figure 1: (a) Near-total amputation of the penis between the glans and shaft. (b) Both the proximal and the distal opening of the urethra seen at the narrowing site

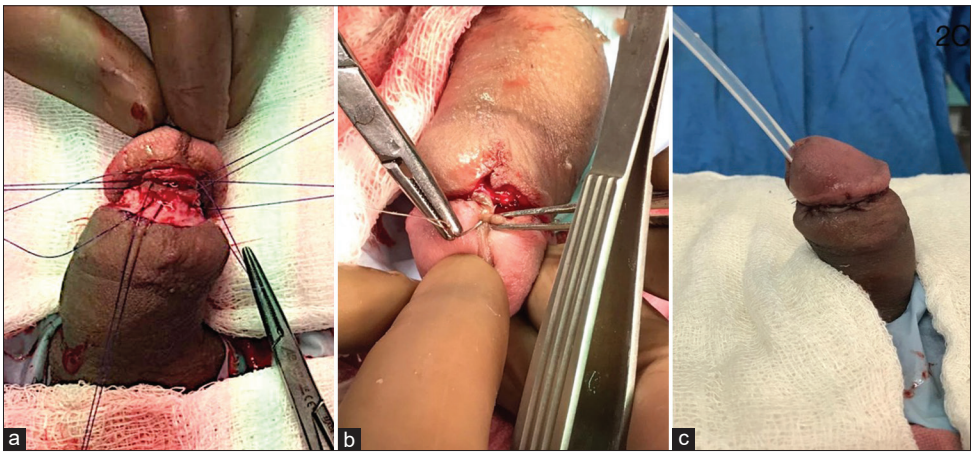

Figure 2: (a) End-to-end urethroplasty using interrupted 4-0 PDS sutures. (b) Glansplasty and preputioplasty using *Z*-plasty incisions. (c) Postsurgery (urethroplasty and glansplasty) photograph showing normal looking penis

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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