Short Discussion

Post Traditional Circumcision Penile Skin Degloving in a Five Year Old Boy: Short Discussion

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ABSTRACT

Circumcision is the surgical removal of the prepucial skin of the penis, some of the complications of traditional circumcision includes; sepsis, genital mutilation, redundant prepuce, gangrene of penis, excessive bleeding, penile amputation or urinary retention, others include loss of penile sensitivity, metal stenosis, and urethrocuteneous fistula. Among the documented complications we did not come across complete degloving of the penile skin, as we found in this 5-year-old patient, who had traditional circumcision with application of some concoction on the penis leading to sloughing of the entire penile skin. A case report of 5-year-old Hausa Muslim boy who after penis skin avulsion presented with a 5 days history of a penile swelling and pain with discharge of purulent material, following a traditional circumcision and application of a concoction on the penis. Examination revealed acutely ill looking boy who was crying warm to touch, he has a degloved penis with sloughs and purulent discharge, the external urethral meatus was partly covered by crust and blood clots, no active bleeding and a diagnosis of post-circumcision degloved penis was made and patient was admitted. Patient was planned for reconstruction and penile coverage with split thickness skin grafting which he had on 5th day of admission, he was placed on parenteral antibiotics, analgesic, and intravenous fluids and graft site was dressed with Vaseline gauze and he was discharged on 7th day post-operative.

Key words: Degloving, graft, penis, traditional circumcision

INTRODUCTION

Circumcision is a surgical method in which portion of the foreskin (removal of preputial skin) is removed leaving the glans penis uncovered commonly done in Muslims, Catholics Jews and some other communities.[1,2] It is most widely believed that, if a person is circumscribed in childhood, the foreskin of his penis can sprout up again. If a person is circumscribed in early age, his body will be stunted though it may get bigger. This allows for repair and healing of damaged tissues and reduces the risk of infections. The procedure can be performed as preventive measures where there is chance or potential for infection of the penis due to poor hygiene. The penis is sumptuously supplied with blood, and the potential post-operative problems are hemorrhage and infections.

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Traditional circumcision (initiation) is an essential part of the Xhosa-speaking communities. Circumcision is the first step toward manhood. It involves some cultural, legal, religious and ethical issues and are rights that must be protected in terms of the Constitution of the Republic of South Africa.[3,4]

Circumcision is one of the oldest surgical procedures performed, and the early Egyptian mummies were fund to be circumcised. In rural Sub-Saharan Africa surgical circumcisions are generally safe performed mostly in the urban centers, whereas traditional circumcision of

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males is common amongst many rural societies where it is seen as a rite of passage to manhood.[5]

Among the documented complications of both orthodox and traditional circumcision we did not come across complete degloving of the entire penile skin, as we found in this 5-year-old patient, who had traditional circumcision with application of some concoction on the penis leading to sloughing of the penile skin.

Injury to penis or degloving of the penis, scrotal skin or both are rare, often requiring reconstruction and occurs mainly due to trauma (industrial and/or agricultural machinery), sports injury, fight or can be iatrogenic. Such type of injury to the penis is incapacitating and has a devastating psychological impact.[6]

Toddlers and young persons are usually victims. Degloving describes a potential severe injury in which an unrestricted area of skin is torn from its underlying attachments consequently depriving it of its blood supply.[7]

The treatment options commonly employed includes are:

- Degloved skin either as flap or as free skin graft
- Free split skin graft
- Free full-thickness skin graft (Wolfe Graft)

Various surgical management of penis:

- Sub-coronal degloving incision
- Direct incision over the defect
- Inguino-scrotal incision
- Corporoplasty or plication procedures
- Plaque incision or excision with grafting
- Penile prosthesis insertion with plaque modeling or incision with or without grafting.

CASE REPORT

A 5-year-old Hausa Muslim Child, who resides with his parents in Hotoro with no underlying illness, presented a history (given by their parents) of a penile swelling and pain with discharge of purulent material and of offensive *odor*. History reveals a 5 days back traditional circumcision of the child penis and application of a concoction on the penis that was focused only on achieving hemostasis.

By the description given by their parents, the patient was said to be crying a day after the circumcision excessively, and the mother noticed the swelling of the penis. Two days prior to presentation the mother noticed a mucopurulent discharge from the swollen penis with associated foul smelling and the child was also crying on micturating.

On the 5th day post-circumcision, the penile swelling ruptured and was bleeding unhealthy granulation tissue and the child was crying excessively necessitating them presenting to the hospital. There was no previous history of crying on micturation' or abnormal, excessive bleeding, no history of trauma to the penis and sickle cell anemia.

Physical examination revealed acutely ill-looking boy who was crying warm to touch (temperature 37.8°C) no pedal edema, the abdomen was full moving with respiration no renal angle or suprapubic tenderness, he has a de globe penile with sloughs and purulent discharge oozing, the external urethral meatus was partly covered by crust and blood clots, there was no active bleeding, both testicles was intra scrotal and non-tender, a diagnosis of post-circumcision degloved penis was made, and patient was admitted as shown in Figure 1a.

On routine blood investigation and laboratory findings which includes blood, urine analysis, etc. we found that packed cell volume was 34%, urea, creatinine and electrolytes were essentially normal, wound swab microscopic/culture/sensitivity (M/C/S) culture *Escherichia* coli that was sensitive to augmenting. Patient was commenced on BD dressing intravenous antibiotics and analgesics he was also catheterized with size 6F Foleys urethral catheter for intermittent bladder drainage. No history of urethral catheterization was found.

On the 3rd day of hospital admission the fever subsided, purulent discharged was reducing, and the patient's general condition improved as shown in Figure 1b.

Repeat wound swab M/C/S showed no organism isolated on the 4th day of admission and the wound

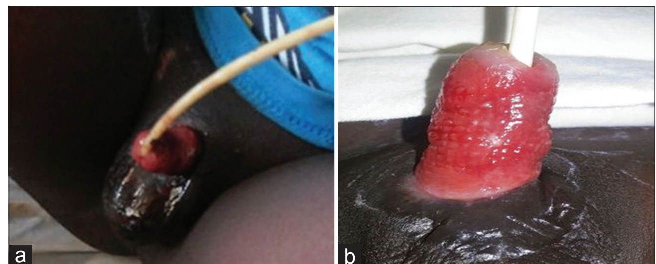

Figure 1: (A and B) Showing degloving of penis

was granulating well as shown in Figure 2. Patient was planned for split thickness skin grafting that he had on 5th day of admission, he was placed on parenteral antibiotics and analgesia and intravenous fluids and graft site was dressed with Vaseline gauze as shown in Figure 3. Immediate post-operative was uneventful, and the vital sign were within normal range patient was commenced oral feeds 24 h post-operative.

On the 5th post-operative day the graft site was inspected and found to have about 95% graft take with no evidence of infection, the child did remarkably well and was discharged on 7th day post-operative. Daily dressing with povidone iodine wrung gauge was commenced.

DISCUSSION

The penis comprises three erectile columns, namely the corpus spongiosum and paired corpora cavernosa. It is surrounded by facial layer, nerve, lymphatics, and blood vessels and covered by skin. The penis is supported at its base by the penile suspensory ligaments.

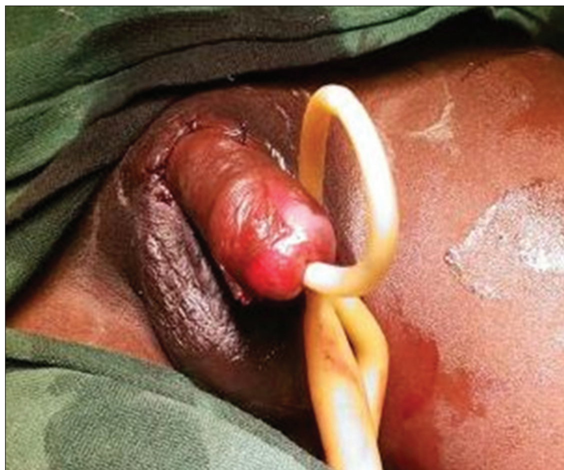

Figure 2: Showing the Skin Graft

Figure 3: Post operative image showing placement of skin graft

Rashid and Sarwar reported the classification of male genitalia injury by anatomical location.[8] Type I injury includes a distal portion of the penis with the proximal part of the penis being preserved. Type II injury includes severe injury on the shaft of penis with penile crush being preserved. Type III injury includes the injury when urethral catheterization is necessary with the external urethral part being preserved. Type IV injury includes the injury when suprapubic cystostomy is needed.[4] However, this classification could not reflect the nature of injury mechanism such as penetrating or strangulation injury.

Superficial or partial penile injury can be treated with suturing and wound dressing after exploration. More extensive injuries including urethral and corpus cavernous can be treated by free transfer flaps and different grafts. Penile amputation, whether it is partial or total, requires complex and skilled reconstructive techniques including phalloplasty.[9-11]

Expeditious and prudent post-operative care is needed to avoid delayed complications such as infection, curvature, erectile dysfunction, unrecognized urethral injury, and chronic pain. Severe penile injury might be associated with adjacent comorbidity involving the scrotum, pelvis, buttocks, and thighs. In these scenarios, delicate surgical skill with staged treatment is needed.[12]

The aim of the reconstruction in penile injury is to embody an esthetically acceptable shape, to obtain normal or near normal functional outcomes including erection and sensation, and to minimize the post-operative sequel including fistulae or urethral strictures.

Circumcision is one of the most common surgeries in urology, which is usually a safe and simple procedure with low morbidity. However, serious complications can occur because unprofessional practice performs it.[13] The penile injury from circumcision is diverse: from infections to disfigurement or partial to total amputation of the penis.

Our patient presented with a unique presentation which is complete degloving of the penile skin following a traditional circumcision and application

of a traditional concoction, as opposed to 3 cases of partial penile skin deglobing reported by Sotolongo *et al*. secondary to ritual circumcision by Mohel[12] [A mohel is a Jewish man trained in the practice of Brit milah (circumcision)].

Gearhart and Rock[14] reported the post-operative complication rate as 0.2-0.6%, which ranges from bleeding, lymphedema, fistula formation, and iatrogenic hypospadias to the partial or complete amputation of the glans penis.[15,16] El-Bahnasawy and El-Sherbiny[12] reported the largest series of pediatric penile injury. Sixty-four boys with penile injury were hospitalized over 20 years and among them 43 boys (67%) had a penile injury caused by circumcision.

Although circumcision is regarded as a minor surgical procedure, it is not free of complications. Urologists have to pay more attention to reducing the complication by circumcision. Penile injury by circumcision also can have lifetime functional, psychological, and cosmetic sequel.

Although in a study by Williams *et al*.[17] they described penile skin denudation in medical circumcision as a result of failure to break down the ventral foreskin adhesions to the glans penis completely, as such they advocated that the inner preputial epithelium be completely free from the glans such that the entire coronal sulcus can be visualized while in a study by Gee and Ansell reported one child with complete denudation of the penile skin, which was treated initially by burying the penis in a scrotal skin tunnel and a complete denudation in adult male was managed by split thickness skin grafting. Hemorrhage and sepsis are the commonest complications and are considered in greater detail below.[17] The nature of circumcision dictates that errors of omission and commission, i.e. too little or too much, is assessing how much foreskin to remove are likely to happen, and one of the most common complaints is of an unsatisfactory cosmetic result. If the insufficient foreskin is removed the cosmetic appearance is such that the penis does not appear to be circumcised; phimosis may still subsequently develop.[17]

The actual active ingredient contained in the traditional concoction used for our patient is not know*n* however some of the traditional concoctions include maize leaves, neem tree leaves or eucalyptus tree others use back of some trees while some use a mixture ash and ghee and sometimes animal dungs with its attendant risk of infection. They also have a higher risk of testicular torsion and trauma or it may be a harbinger to a more serious congenital anomaly such as ectopia vesicea, prunebelly syndrome or disorder of sexual development and differentiation.[18]

Our patient presented septic necessitating parenteral antibiotics, analgesics and daily wound dressing with remarkable improvement as evidenced by healthy granulation tissue and negative wound swab microscopy culture and sensitivity 5 days on admission and we also catheterized the patient to divert the urine.

We prepare the patient and he had split thickness skin graft using the medial aspect of the thigh skin of the patient as a donor the graft take was excellent about 96% and our patient did well and was discharged home and at follow up the wound has healed without sequel.

The aim of penile circumcision is to surgically cut enough shaft skin and inner preputial epithelium so that the glans is sufficiently uncovered to prevent or treat phimosis and render the development of paraphimosis impossible.[19] Although there are many different techniques of circumcision, they can be broadly classified into four types: dorsal slit, shield, clamp, and excision. Although many of the methods are not used in urological practice, the urologist will occasionally be faced with their complications.

EDUCATION PEARL

TESTICULAR SELF EXAMINATION

Should be done once in a month
↓
Should be done during or after shower or bath
↓
Use both hands to feel each testis
↓
Roll the testis between thumb and three fingers until entire surface has been covered
↓
Palpate each testis separately
↓
Check for lump, irregularitites and pain
↓
One testis may be larger than other-normal
↓
If abnormalities found contact healthcare provider

POINT TO NOTICE

Nurses should do a thorough abdominal and scrotal examination of new born male infants from birth upto age of atleast one to two years for early detection of undescended testis and any infection in penis.

He must, therefore, be familiar with the different techniques, their specific advantages, and pitfalls.[19]

To prevent complications with whatever technique is preferred, four principal factors should be strictly adhered to; attention to aseptic conditions, adequate but not excessive excision of outer and inner preputial layers, meticulous hemostasis and protection of the glans penis and the urethra.[19]

CONCLUSION

The cultural practices which are harmful to life contravene the norms of society, and must be changed sooner. In terms of the Constitution of the Republic of South Africa, everyone has a right to life. That right to life cannot be sacrificed at the altar of culture and politics. There is a serious health crisis that is going on in South Africa in relation to the ritual of circumcision. The government or traditional leaders, or both must take bold steps to resolve the problem and prevent these avoidable deaths and disabilities among Xhosa-speaking boys in these areas. It is always dangerous to mix culture with politics.

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