

Treatment of Genital Burns, about A Case

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ABSTRACT

Perineum and genital burns are infrequent, especially as isolated episodes. The primary objective of perineum burn care is to maintain urine and fecal continence. Cleaning, gentle debridement of loose burnt tissue with gauze, topical antibacterial treatments, and dressing changes are all part of the first therapy for burns on the perineum and genitals. Before attempting acute debridement, burns should be delineated.

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INTRODUCTION

Perineum and genital burns are uncommon but serious injuries. Burns in these locations are generally associated with burns in other anatomical sites, but they can be isolated, as in deliberate scalds. The initial priority is to resuscitate and stabilize the burn patient, followed by care of the burn wounds.¹

Perineum and genital burns have the potential to impair or ruin function, attractiveness, and the capacity to maintain adequate cleanliness. Scarring and loss of normal tissue can impede movement and cause pain, deformity, and social shame. The treatment regimen includes surveillance for the preservation of genitourinary and sexual function.²

CASE REPORT

Patient who refers to a motorcycle accident on the day of the accident, kinematics of the trauma unknown, was transferred

to our hospital. on admission patient with Glasgow coma scale of 14 points, verbose, with blepharodema and right blepharoequimosis, right eye opening limited by edema, with no data of ocular trapping. at the level of both thoracic limbs proximal third of forearm posterior face with superficial second-degree friction burns, third degree lesion at right inguinal level with extension to ipsilateral inner thigh, edema at pelvic level, with third degree lesion in distal third, second degree deep in 70%. left pelvic limb at the level of the proximal third in medial face with third degree lesion, right pelvic limb with superficial second degree lesion at the level of the middle third lateral face without data of compartment syndrome. partial thickness graft is taken with dermatome and manual (donor area anterolateral side of left thigh), with posterior meshing, is covered in all crucial areas, including foreskin and scrotum, is covered with jelonat, dry dressings and bandage.



Figure 1. Male genital burn.

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Figure 2. Preoperative management.



Figure 3. Postoperative graft

EPIDEMIOLOGY

Perineum and vaginal burns affect around 3 to 13% of all burn victims. Scalds, fires, chemicals, and electrical contact are the most prevalent causes of perineal and genital burns. Isolated burns on the perineum and/or genitals are uncommon, especially in women, and in children are a sign of abuse and should be investigated further.³

In certain cases, accidental burns can be separated from deliberate burns. Intentional scalds are symmetrical, have definite top margins, and may be accompanied with previous fractures or traumas unrelated to the scald. Unintentional perineal mature ones, on the other hand, have uneven margins and depth.⁴

Prior to any possible surgical therapy, patients with superficial and profound burns to the perineum and genitals are treated conservatively, with washing, gentle gauze debridement of loose burnt tissue, if present, and covering with bandages and topical antibacterial medications.⁵

Wound healing rates using conservative techniques range from 80% to 96 percent. Management of individuals with significant burns involving only the perineum and/or genitals, or involving the lower groin or truncal regions, is more complicated.⁶ To ease healing and dressing changes, keep the thighs at 15° abduction. The first treatment of the patient with significant burns comprises, in addition to local dressings and topical medicines, guarding the urethral meatus from obliteration owing to swelling and preserving burnt skin from urine and fecal contamination.⁷

In contaminated perineal burn wounds, necrotizing infections can arise. Necrotizing cellulite and fasciitis are treated individually.⁸

It may be difficult to detect the depth of the burn wound at first, and as a result, the burn site may need to be delimited to maintain the skin and function of the genitals. Demarcation is the conversion of a superficial wound depth to a deeper burn, which generally occurs on the third day following the burn.⁹

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Acute debridement of the burn eschar following demarcation and covering of the site with skin grafts are used for deep and superficial mature burns that do not heal with conservative care.¹⁰

RECONSTRUCTION

If necessary, burn wound repair may be performed to restore function and enhance aesthetics by releasing or eliminating scar contractures and/or tissue remodeling.²

Laser treatments, including as ablative and non-ablative fractional CO₂ techniques and pulsed dye laser techniques, are beneficial for treating aberrant healing. Its application has been demonstrated to improve both look and function while decreasing the utilization of more harsh standard operating procedures.¹¹

Reconstruction is typically performed after scar maturation (unless deterioration and loss of function show sooner), which can take up to a year after the wounds have healed. In other circumstances, reconstructive surgeries, such as the creation of urethral stenosis or the perineal scar that obstructs the anus, are performed sooner.¹²

The most frequent approach for secondary repair of damaged genitalia is the use of skin grafts with or without dermal scaffolding material. Fasciocutaneous flaps and variants on the Z-plasty procedure are other available. The local flap alternatives outlined for inguinal contractures also apply to genital reconstruction.¹³

Burns to the male genitalia can induce tissue retraction and scarring, resulting in shaft distortion, difficulty to attain normal erections, and meatus blockage. The objective of penile and scrotal restoration is to restore anatomical and cosmetic integrity while maintaining urine and sexual function.¹⁴

The medical and functional implications of a burn to the male external genitalia are determined by the depth and extent of the burn lesion. Clear debridement of devitalized burnt tissue is frequently performed for deep and/or unhealed burns.¹⁵

The urethra must be protected before beginning acute debridement by inserting an indwelling urine catheter. The pene must be gently clamped, and all charred tissue must be properly debrided. We utilize a Goulian knife with an 8/1000-inch protection; a VersaJet hydrosurgical approach is a viable option.¹⁶

Reconstruction of the male genitalia may begin after clean debridement of the devitalized tissue, depending on the place affected, the amount of the burn, and the availability of unburned skin. There are several reconstructive possibilities available.¹⁷

Full-thickness skin grafts alone or partial-thickness skin grafts with a dermal template are typically used to repair the scrotum.

If the testicles are exposed due to burning or debridement, they might be moved to pouches developed on the inner thigh. While the testicular function is retained, the physical look is subpar.

Penile repair entails the relief of contracture caused by burning in order to prevent shaft shortening.

Several Z-plasties can be done to relieve the contracture if Buck's fascia is respected.¹⁸ When a contracture is removed, the resulting defect is replaced by a whole thick skin transplant. Debilitating, inelastic, and painful hypertrophic scars can result from partial thickness skin transplantation alone. To avoid these issues, utilize a dermal template when doing partial thickness transplants. If Buck's fascia is implicated, the deformity is surgically released, and the defect may be covered with a pedunculated flap, such as the anterolateral thigh flap or the medial circumflex femoral artery perforating flap.¹⁹

Patients who have lost the deeper layers of the penis, such as the corpora cavernosa or the glans and meatus, require a complicated and interdisciplinary treatment that includes urological expertise. Complex free microvascular flaps and prostheses, such as a thoracodorsal artery perforating flap or forearm fasciocutaneous flap and full-thickness skin grafts to establish a urethral tract, may be required to reconstruct a neophallus.²⁰

Circumcision is used to cure foreskin scarring. If necessary, circumcision skin can be utilized as a full-thickness graft on the shaft of the penis.²¹

Complete loss of a penis from a burn is uncommon, and there are few stories addressing reconstruction. For urinary closure and drainage through a big meatotomy, microvascular free tissue transfer from a composite radial fasciocutaneous flap phalloplasty of the forearm with or without prosthesis or bone graft is a possibility.²² A phalloplasty is a difficult treatment that might result in problems such as a urethrocutaneous fistula and hair development. If a kid suffers a total loss, reconstruction is normally completed between the ages of 6 and 8, however adjustments may be required as the child approaches adolescence owing to the psychological impact on the child and the family.²³

CONCLUSION

The reconstructive strategy is determined by the scar's size and the availability of unburned tissue for repair. Male genital reconstruction is done to restore function and beauty. Depending on the amount of the injury, the scrotum can be repaired with skin grafts and the penis with contracture release and covering with skin grafts or pedicled flaps. In the case of full penis loss in males, reconstruction is postponed until adolescence. In the case of total penis loss, free tissue transfer with or without the use of an intubated prosthetic may be required to explain sexual function.

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