Lymphedema following skin avulsion injury of the male genitalia

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MM Al-Qattan, M Ziesmann. Lymphedema following skin avulsion injury of the male genitalia. Can J Plast Surg 1994;2(1):41-43. A case of skin avulsion injury of the penis and scrotum complicated by lymphedema of the foreskin is described. The general principles are discussed, especially regarding debridement, choice of reconstruction, foreskin preservation and dressing.

Key words: *Lymphedema, Male genitalia, Skin avulsion*

Lymphoedème après avulsion cutanée au niveau des organes génitaux chez un homme

RÉSUMÉ : L'auteur décrit ici le cas d'une lésion cutanée (avulsion) au niveau du scrotum et du pénis, compliquée d'un lymphoedème au niveau du prépuce. On y aborde les principes généraux, particulièrement en ce qui a trait au débridement, au choix de la technique de reconstruction, préservation et au redrapage du prépuce.

A 32-year-old man sustained an injury when his pants were caught in the rotating shaft of his tractor resulting in avulsion of the skin of the penis, scrotum and perineum (Figure 1).

After assessment, analgesia, tetanus prophylaxis and antibiotic cover, the patient was taken to the operating room 3 h after the time of the initial injury. The testes and urethra were intact and a Foley catheter was inserted.

Examination by the general surgeon revealed no evidence of anal mucosal injury, but the anal sphincter was partially lacerated and was repaired.

Debridement of devitalized tissue and cleaning using a pulsed jet irrigating system (Excel pulsed irrigator, Stryker) was then performed. The perineum was closed in layers over a suction drain. The testes were sutured to each other with Dexon and a meshed medium thickness split skin graft was applied. The foreskin was preserved and used to cover the distal penile shaft. The proximal shaft was resurfaced with an unmeshed thick split skin graft (Figure 2). All areas were dressed with Jelonet. Two temporary sutures were placed in the glans and the penis was held out at maximum length. A Kling bandage soaked in tincture of Benzoin was then used to wrap around the penis, thereby creating a penile splint. A scrotal support was used to support the grafted testes. Postoperatively, there was 95% graft take, but lymphedema of the distal shaft skin was noticed (Figure 3). Six months later, the

Figure 1) Skin avulsion injury of the penis, scrotum and perineum

Figure 2) Immediate postoperative result after primary closure of the perineum and skin grafting of testes and proximal penile shaft

Figure 3) Lymphedema of the preserved distal penile shaft skin

lymphedematous foreskin was excised and the defect grafted with an unmeshed thick split skin graft. On follow-up, one year later (Figure 4), the patient had a satisfactory functional and cosmetic result.

DISCUSSION

Avulsion of the skin of the external genitalia is rare. Although the most common cause is the power take-off injury, these injuries have also resulted from the use of suction devices for sexual arousal (1), cycle rickshaw accidents in children (2) and bullfighting (3).

Urine diversion via a suprapubic catheter has been suggested (1), but we do not think it is usually needed.

A diverting colostomy may be required for significant anorectal injury. In our case, primary repair of the anal sphincter followed by low residue diet and codeine was done and the patient had normal sphincteric function.

After surgical debridement, we believe that the use of a pulsed jet irrigating system is best to remove the attached dirt.

Testicular coverage using superficial thigh pockets (4,5), pedicle thigh flaps (6,7) and skin grafts using the avulsed skin (8) or split graft (1,2,9) have been reported. We believe that the best choice is a meshed split skin graft because the meshing scars mimic the normal rugations of the scrotal skin (Figure 4). Penile shaft coverage, using unmeshed split skin

Figure 4) Final appearance one year after skin excision and grafting of the distal penile shaft

graft, is the treatment of choice (1,6,9). Manchanda et al (2) used the foreskin to cover the distal shaft and noticed that the lymphedema subsided in a few months. In our case, this lymphedema persisted and we agree with other authors who advise removal of the foreskin during the initial debridement (1,4,9).

REFERENCES

1. Jordan GH, Gilbert DA. Male genital trauma. *Clin Plast Surg* 1988;15:431-42.
 2. Manchanda RL, Singh R, Keswani RK, Sharma CG. Traumatic avulsion of scrotum and penile skin. *Br J Plast Surg* 1967;20:97-103.
 3. Gonzalez-Ulloa M. Severe avulsion of the scrotum in a bullfighter: Reconstructive procedure. *Br J Plast Surg* 1963;16: 154-9.
 4. Masters FW, Robinson DW. The treatment of avulsions of the male genitalia. *J Trauma* 1968;8:430-8.
 5. Millard DR. Scrotal construction and reconstruction. *Plast Reconstr Surg* 1966;38:10-5.
 6. d'Alessio E, Rossi F, d'Alessio R. Reconstruction in traumatic avulsion of penile and scrotal skin. *Ann Plast Surg* 1982;9:120-4.
 7. McDougal WS. Scrotal reconstruction using thigh pedicle flaps. *J Urol* 1982;129:757.
 8. Gibson T. Traumatic avulsion of the skin of the scrotum and penis: Use of the avulsed skin as a free graft. *Br J Plast Surg* 1954; 6:283-9.
 9. Huffman WC, Culp DA, Greenleaf JS, Flocks RH, Brintnall ES. Injuries to the male genitalia. *Plast Reconstr Surg* 1956;18:344-53.
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