

Use of Pedicle Medial Thigh Flap in Penile Reconstruction; Lesson from a Case Report

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Abstract: Penile reconstruction can be challenging. The goal of the repair is to have aesthetically good looking penis that serves micturition and sexual needs. The patient must be approached holistically. The aim of this article is to show that care must be taking when using pedicle medial thigh flap in penile reconstruction.

➤ Methodology

This is a case report of a traumatic penile defect reconstructed with pedicle medial thigh flap.

➤ Findings

The penile defect was successfully reconstructed with patient scoring highest level of satisfaction in Likert scale. Patient also reported good erections. However, we experience wound dehiscence in the course of the reconstruction.

➤ Implications to Theory, Practice and Policy

Pedicle medial thigh flap is a good option in penile reconstruction. However the donor thigh should be restrained to prevent wound dehiscence.

Keywords: Penile, Thigh, Flap Medial, Dehiscence.

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I. INTRODUCTION

Reconstruction of the penile shaft poses a challenge to the reconstructive surgeon¹. regardless of the penile defect, the goal of reconstruction is to create a cosmetically appealing phallus with capacity to urinate and coitus¹.

It is important to preserve as much penile tissue as possible in the course of the surgical repair because, the penile tissues are unique to the penis². Indications for penile reconstruction ranges from traumatic penile defects, severe soft tissue infection resulting in penile defect, neoplastic resection, Peyronie's disease etc. Traumatic injuries from machines are reported in developing countries especially where such machines are used for commercial purposes^{3,4}.

Careful preoperative evaluation and anatomical defect analysis are important in selecting the best option for reconstruction^{5,6,7}.

As with any surgical procedure, complications may arise. These will vary depending on reconstructive technique used. These complications include graft loss, flap necrosis, donor site morbidity, fistula formation, stricture etc ^{2,3,4,7}.

II. CASE REPORT

Our patient is a 32year old poorly trained bread factory worker who sustained injuries to the penis, scrotum and the left medial thigh. He was working with a bread rolling machine which caught and dragged him into its rollers. He

was able to forcefully extricate himself with associated bleeding and open injuries necessitating presentation to the accident department of the hospital. Following resuscitation using the ATLS protocol, examination showed degloving injury of the penis and scrotum with avulsion injury of the medial aspect of the left thigh. Initial debridement was done with re-draping of the penile skin. However, after 4 days, the penile skin was noted to be completely necrotic with the dorsal aspect of the glans, distal half of the corpora cavernosa with dorsal portion of the corpus spongiosum. During the care of the patient, urologist and psychologist were involved for a holistic approach. Following optimization of the wound, patient had penile reconstruction using a pedicle, medial thigh flap.

III. PROCEDURE

Patient under spinal anesthesia had a 14cm x 7cm medial thigh flap designed after identifying perforators at its base using a handheld doppler. The planning of the flap was done in reverse. Patient was positioned in Lithotomy position during elevation of the flap. Following elevation of the flap, hemostasis was ensured with diathermy and the donor site closed primarily in layers. The flap was anchored around the penis while the scrotal skin was undermined and closed primarily.

Postoperative inspection at second day showed the flap to be completely viable with the donor site wound edges intact. However subsequent assessments on day five showed complete dehiscence of the donor site and partial flap separation on the penile shaft. It was noted that patient always made attempts at abducting the lower limb bearing the flap. The flap was divided at 2 weeks post-operation following flap training. The residual wounds on the penile shaft were subsequently grafted.

IV. RESULT

Patient expressed satisfaction on the appearance of the reconstructed penis. He also reported early morning erections with marked improvement in his self esteem and mental wellness. Patient scored highest level of satisfaction in Likert scale.

V. DISCUSSION

Techniques for penile reconstruction have evolved over time with significant improvements in outcome^{7,8}. The decision on the option for reconstruction is often patient dependent⁷. The primary goal of penile reconstruction is to have aesthetically appealing penis capable of micturition and sexual intercourse^{7,8}. Following traumatic penile injury, there is often need for surgical debridement with preservation of as much viable tissues as possible^{7,8}. Nicholas et al documented that negative pressure wound therapy can be used in optimizing such wounds therefore obviating the need for regular dressings⁷.

Several options have been described for managing traumatic penile defects. These include use of skin graft (full or split thickness), variety of pedicle and free flaps⁸. Flap options includes; medial thigh flap, scrotal flap, V-Y plasty, groin flap, abdominal flap, rectus abdominis flap, gracilis flap, radial artery flap, upper arm flap etc^{8,9,10,11,12,13,14}. In our case, we noted that constant traction from abduction movement of the donor thigh led to breakdown of the donor site and partial dehiscence of the flap. A holistic approach must be adopted in management of such patients with penile defects as it commonly affect their mental well-being^{5,14}. In the index patient this was ensured.

VI. CONCLUSION

Medial thigh flap is a good choice in reconstructing traumatic penile defects. If used as a pedicle flap, there is need to restrain abduction movement of the donor thigh to prevent wound dehiscence from traction for across the sutures.

RECOMMENDATION

Pedicle medial thigh flap is a good option in penile reconstruction. Younger surgeons should be encouraged to learn this procedure and use it for repair of traumatic penile defects.

Conflict of Interest

The authors have no conflict of interest to declare.

REFERENCES

- [1]. Çelebi S. Neo-glans reconstruction with dartos flaps covered with buccal mucosal graft after total glans amputation during circumcision: Novel technique. *Ulus Travma Acil Cerrahi Derg* 2023;29:746-751.
- [2]. Giulio G, Amr A.R David J.R. An update on penile reconstruction; *Asian Journal of Andrology* (2011) 13, 391–394; doi:10.1038/aja.2011.29
- [3]. Adigun I.A, Kuranga S.A, Abdulrahman I.O. Grinding machine: Friend or Foe. *WAJM*. OCTOBER 2002; Vol 21(4).338-340.
- [4]. Philip S. B, Irene T. M, Jeff J. K, Gordon K. L. Penile Reconstruction: Current Thoughts, Techniques, and Outcomes. *EMJ Urol*. 2020;8[1]:12-21.
- [5]. Muhammad A, Muhammad M, Muhammad T, Muhammad S, Zahid I. Reconstructive Surgery for Severe Penile Injury: One-Stage Penile Reconstruction (Phalloplasty) Using Pedicled Island Anterolateral Thigh Flap. *P J M H S* Vol. 7(3) JUL – SEP 2013. 692-7
- [6]. Mihaly M, Daniel V, Zoltan K, Tibor F. A New Modified Bipedicled Scrotal Skin Flap Technique for the Reconstruction of Penile Skin in Patients with Paraffin-Induced Sclerosing Lipogranuloma of the Penis. *THE JOURNAL OF UROLOGY*; Vol. 208, July 2022. 171-178
- [7]. Nicholas O, Joshua P, Jacob T, Omar D, Omer R. Penile reconstruction: An up-to-date review of the literature; *Arab Journal of Urology*, 2021, 19:3, 353-362, DOI:10.1080/2090598X.2021.1957410

- [8]. Giulio G, Vincenzo G, Gabriele A, Petros T, Amr A.R & David J.R. Penile reconstruction in the male, Arab Journal of Urology, 11:3,(2013). 267-271. DOI: 10.1016/j.aju.2013.04.003
- [9]. Ragheb A, Tamim A, Kusay A, Zaher A, Mario Tarzi5, Ahmad Rami R, et al. Penile reconstruction using scrotal flap after usage of monopolar electrocautery in a 2-month-old Syrian child: a case report. Journal of Surgical Case Reports, 2019;12, 1–3 doi: 10.1093/jscr/rjz351
- [10]. Vasundhra J, Shravan R.K, Srilekha R.G, Devajyoti G, Shikha G, Anil M, Mohit S. Penile Reconstruction with Radial Forearm Free Flap—Present State of the Art Indian J Plast Surg; doi.org/10.1055/s-0044-1791195.
- [11]. Christopher J.S, Harvey C, Jennifer C. T, Stan J. M and Samir M Seminars In Plastic Surgery/Volume 25, Number 3 2011. 221-8.
- [12]. Jong S.K, Yu S.S, Jong K.P. Penile skin preservation technique for reconstruction surgery of penile paraffinoma ;Investig Clin Urol Posted online 2019.1.25
- [13]. Muhammad A.K , Syahril A.S, Hamid G. Scrotal bridge flap reconstructive surgery for extensive penile paraffinoma: steps and outcomes from a single center: a case series; Afr J Urol (2021) 27:113
- [14]. N Snyder, LJ Gould. Scrotal and penile reconstruction using the vacuum-assisted closure device. Can J Plast Surg 2005;13(4):205-206.