

Case Report

Iatrogenic Penile Glans Amputation: Major Novel Reconstructive Procedure

Rami Nasr,¹ Samer L. Traboulsi,¹ Rami R. Abou Ghaida,¹ and Joseph Bakhach²

¹ *Division of Urology, Surgery Department, American University of Beirut, P.O. Box 11-0236 Riad El Solh, Beirut 1107 2020, Lebanon*

² *Division of Plastic Surgery, Surgery Department, American University of Beirut, P.O. Box 11-0236 Riad El Solh, Beirut 1107 2020, Lebanon*

Correspondence should be addressed to Joseph Bakhach; ral72@aub.edu.lb

Received 16 July 2013; Accepted 7 October 2013

Academic Editors: J. P. Gearhart, I. Hara, H. Ito, and K. J. Turner

Copyright © 2013 Rami Nasr et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Circumcision is a very common urological practice. Even though it is relatively safe, it is not a complication-free procedure. We describe a patient that underwent a neonatal circumcision complicated by iatrogenic complete glans amputation. Reconstructive repair of a neoglans using a modified traditional method was used. Postoperative followup to 90 days is illustrated. Despite being a simple procedure, circumcision in unprofessional hands can have major complication impacting the emotional and sexual life of patients. Surgical reconstruction is possible with varying satisfactory results.

1. Introduction

Circumcision is one of the most common operations performed in urology. It is usually a safe and simple procedure with a very low morbidity rate; however, serious complications can occur [1]. In this part of the world, circumcision is regarded as a religious ritual. It is being practiced widely by nonmedical personnel in many rural areas. Due to this unprofessional practice, many complications arise ranging from infections to disfigurement or partial amputation of the penis. The true incidence of complications is unknown because of underreporting and because the majorities are small insignificant iatrogenic injuries that are managed by basic medical first aid treatment and wound pressure and that rarely require surgical intervention. Gee and Ansell reported a complication rate of 0.2–0.6%, ranging from bleeding, lymphedema, fistula formation, iatrogenic hypospadias to the most serious one being amputation of the glans penis [2, 3]. Most amputations are not documented as they are repaired immediately. The most dreadful complication is partial or complete glans amputation. If recognized within 8 hours, the glans can be successfully reattached [4]. Penile glans reconstruction due to partial or complete injury is a challenging

issue for both urologists and plastic surgeons and the aim of the reconstruction is to provide an esthetically acceptable shape, allow for normal or near normal intercourse, preserve sensation if possible, and perform a surgery that minimizes the risks of fistulae or urethral strictures.

2. Case

Our patient is a 35-year-old healthy single male. His only concern was penile size. He had a neonatal circumcision performed by a surgeon but was complicated by bleeding. He was sexually active; however, the psychological impact of genital disfigurement was present.

On physical examination, the stretched penile size was 6 cm with scar tissue at the tip (Figure 1), a stenotic urethral meatus, and no obvious glans tissue present. An MRI was done to assess the corpora cavernosa and the extent of injury. There was no anatomic glans and the corpora cavernosa had decreased enhancement due to fibrosis. After counseling the patient, we elected to use the technique of neoglans reconstruction described by Shaeer and Sebaie in 2005 [5] with a few modifications.



FIGURE 1: Short penile stump.



FIGURE 3: The distal penile skin dissected.



FIGURE 2: Dorsal and ventral Z plasties done.



FIGURE 4: The distal skin tubularised over 14 Fr catheters.

3. Description of the Procedure

The patient was put in the supine position and the whole abdomen and genitalia till the lower thighs were scrubbed and draped. A Z-plasty incision was done dorsally and ventrally at the base of the penis (Figure 2), and dissection of the corpora cavernosa from the inferior pubic bone was done (Figure 3). The dorsal vein was ligated, the suspensory ligament was cut, the corpora were sutured to each other, and the suspensory ligament was reattached to a more proximal part of tunica taking care not to injure the neurovascular bundle. To give more length to the stump, we performed Liposuction of the mons pubis and the penile base. The scar tissue at the tip of penile stump was dissected and (as done by Shaer et al.) a neourethra was fashioned by tubularizing the distally degloved foreskin over a 14 Fr foley catheter (Figure 4). Through a Pfannenstiel incision, a rectus abdominis flap of 4 × 12 cm was harvested with preservation of the deep epigastric neurovascular supply (Figure 5) and was tunneled under the skin of the suprapubic area and the penile shaft skin to reach the area of the neoglans (Figure 6). The flap was covered with a split thickness skin graft harvested from the hairless left anterior thigh.

On one week follow up, a small fistula occurred at the base of the ventral anastomosis but it closed spontaneously after dilating the meatus (Figure 7). The glans penis split thickness graft was derided at three weeks with the graft looking very

healthy. At followup after six weeks, the glans looked healthy and had shrunken by about 40% (Figure 8).

4. Discussion

Glans amputation is still the most serious complication of neonatal circumcision. It can be partial or complete for various reasons, that is, traumatic, self-mutilation or transgender exchange, or after amputations for penile cancer. If the injury is diagnosed during the procedure, the stump can be reattached even after eight hours with good cosmetic and functional results [4, 6]. There are many techniques for glans reconstruction after complete or near complete amputation.

Whenever possible, the glans should be reconfigured from its native tissue, but many times we are faced with the situation in which we have complete amputation and there is a need for neoglans reconstruction [7]. Belinky et al. used the distal urethra to cover the corpus cavernosal tissue, but this needs healthy urethra and a fairly long penile stump to have an acceptable sexual and cosmetic result [8]. Mazza and Cheliz developed a two-stage technique in which a scrotal fasciocutaneous flap is tubularized and sutured to the distal end of the penis. The flap pedicle is then resected under local anesthesia after six weeks. This method provides good cosmesis but at the expense of a two-stage operation and a high rate of meatal stenosis [9]. Others used buccal mucosa to cover the distal ends of the cavernous tissue after penile

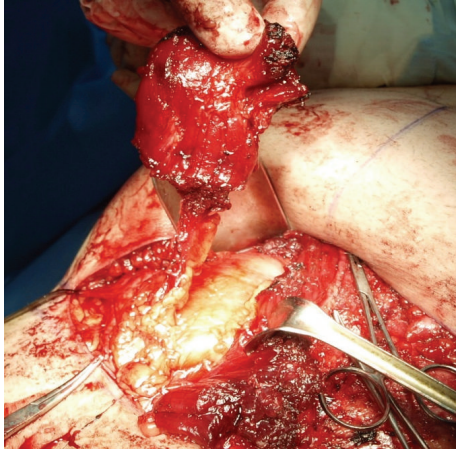


FIGURE 5: The rectus muscle flap with the distal penile shaft.



FIGURE 6: The flap being sutured to the distal penile neurovascular bundle.

cancer surgery, but this graft tends to have a high rate of contractures [10].

We chose the method of Shaeer and Sebaie [5] because it is rather simple to perform, is a one stage procedure, and provides acceptable cosmetic and functional results. Our patient had an MRI for the penis with gadolinium to assess the extent of injury that showed acceptable residual length of the corpus-cavernous bodies. The rectus abdominis flap purpose is to give the shape of the neoglans and to provide few centimeters to the overall penile length. We performed few maneuvers to add more length including dorsal and ventral Z plasty, cutting the suspensory ligaments, and performing liposuction of the pubic area. Thus four centimeters were added to the shaft. The patient did well and was satisfied regarding cosmesis at ninety-day followup (Figure 9). However, he developed meatal stenosis and a small fistula at the ventral side of the flap that eventually closed after being instructed to perform self-meatal dilatation twice daily.

A potential problem of this technique is mainly fistula formation. In order to avoid fistulas like the one we encountered,



FIGURE 7: One week followup.



FIGURE 8: Glans at six weeks followup.

we suggest rotating the flap to the sides so that the suture lines do not overlap. Functionality regarding sexual activity after such a procedure still has to be evaluated. Other less likely complications of this technique are flap necrosis, avoided by careful harvesting and ensuring adequate blood supply to the graft. Infection is minimized by using antibiotics with skin flora and antipseudomonas coverage.

5. Conclusion

Circumcision is regarded as a minor surgical procedure; however, it is not free of complications. Complications can have lifetime functional, psychological, and cosmetic sequel. There are many techniques described in the literature, and in our opinion, the best corrective procedure would be a one stage intervention. Most of the techniques are partially satisfactory; therefore, prevention of this complication is the best treatment.

Conflict of Interests

None of the authors have any conflict of interests to disclose nor did the study receive any external funding.



FIGURE 9: Ninety-day followup.

- [10] E. Palminteri, E. Berdondini, M. Lazzeri, F. Mirri, and G. Barbagli, "Resurfacing and reconstruction of the glans penis," *European Urology*, vol. 52, no. 3, pp. 893–898, 2007.

Authors' Contributions

Rami Nasr and Samer L. Traboulsi contributed equally to the paper. All authors have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the paper or revising it critically for important intellectual content, and (3) final approval of the version to be submitted.

References

- [1] S. D. Niku, J. A. Stock, and G. W. Kaplan, "Neonatal circumcision," *Urologic Clinics of North America*, vol. 22, no. 1, pp. 57–65, 1995.
- [2] W. F. Gee and J. S. Ansell, "Neonatal circumcision: a ten year overview: with comparison of the Gomco clamp and the Plastibell," *Pediatrics*, vol. 58, no. 6, pp. 824–827, 1976.
- [3] T. E. Wiswell, H. L. Tencer, C. A. Welch, and J. L. Chamberlain, "Circumcision in children beyond the neonatal period," *Pediatrics*, vol. 92, no. 6, pp. 791–793, 1993.
- [4] J. Sherman, J. G. Borer, M. Horowitz, and K. I. Glassberg, "Circumcision: successful glanular reconstruction and survival following traumatic amputation," *Journal of Urology*, vol. 156, no. 2, pp. 842–844, 1996.
- [5] O. Shaeer and A. El-Sebaie, "Construction of neoglans penis: a new sculpturing technique from rectus abdominis myofascial flap," *Journal of Sexual Medicine*, vol. 2, no. 2, pp. 259–265, 2005.
- [6] H. I. Patel, K. P. Moriarty, P. A. Brisson, and N. R. Feins, "Genitourinary injuries in the newborn," *Journal of Pediatric Surgery*, vol. 36, no. 1, pp. 235–239, 2001.
- [7] O. Shaeer, A. El-Sebaie, A. Sherif, A. El-Sadat, and A. Shaeer, "Glans reconfiguration for management of glanular mutilation," *Journal of Sexual Medicine*, vol. 5, no. 2, pp. 500–503, 2008.
- [8] J. J. Belinky, G. M. Cheliz, C. A. Graziano, and H. M. Rey, "Glanuloplasty with urethral flap after partial penectomy," *Journal of Urology*, vol. 185, no. 1, pp. 204–206, 2011.
- [9] O. N. Mazza and G. M. J. Cheliz, "Glanuloplasty with scrotal flap for partial penectomy," *Journal of Urology*, vol. 166, no. 3, pp. 887–889, 2001.