

UCSF

UC San Francisco Previously Published Works

Title

Pediatric Urology: Newborn Penile Glans Amputation During Circumcision and Successful Reattachment

Permalink

<https://escholarship.org/uc/item/81c2s7h9>

Journal

Investigative Urology, 153(3)

ISSN

0021-0005

Authors

Gluckman, Gordon R
Stoller, Marshall L
Jacobs, Mark M
[et al.](#)

Publication Date

1995-03-01

DOI

10.1016/s0022-5347(01)67718-8

Peer reviewed

NEWBORN PENILE GLANS AMPUTATION DURING CIRCUMCISION AND SUCCESSFUL REATTACHMENT

GORDON R. GLUCKMAN, MARSHALL L. STOLLER, MARK M. JACOBS AND BARRY A. KOGAN*

From the Department of Urology, University of California School of Medicine, San Francisco and Department of Obstetrics and Gynecology, Marin General Hospital, San Rafael, California

ABSTRACT

Circumcision, the most common operation in male patients in the United States, is performed by a variety of health care professionals. Although not technically difficult, it results in a large number of reported and unreported complications annually. We report the successful reattachment of a distal penile glans, which was amputated when the Sheldon clamp was used for newborn circumcision. The literature is reviewed, and prevention and treatment of this type of circumcision injury are described.

KEY WORDS: circumcision, amputation, complications, penis

Circumcision is the most common operation in male newborns in the United States.¹ In a nonritual setting its risks and benefits remain controversial. Although not technically difficult, it can result in complications ranging from insignificant to tragic. We describe the successful reattachment of a distal penile glans, which was amputated during newborn circumcision by a nonurologist specialist with the Sheldon clamp. We also discuss the potential complications of this procedure with suggestions for the prevention of injury.

CASE HISTORY

A male newborn who was the product of an uncomplicated 38-week pregnancy underwent a guillotine type circumcision elsewhere with the Sheldon crushing clamp (fig. 1). Preoperatively the distal aspect of the penis was swabbed with alcohol and 0.5 ml. 1% lidocaine solution was injected into the prepuce for local anesthesia.² The prepuce-glans adhesions were broken with a hemostat and the foreskin was left in place over the glans. The Sheldon clamp was placed over the prepuce, and the foreskin was pulled through the clamp and crushed. A scalpel was used to excise the prepuce. It was immediately recognized that the distal third of the penile glans had been surgically amputated. The excised tissue was wrapped in sterile saline soaked gauze, placed in a plastic bag and stored on an ice water slush bath for transport to our medical center. Approximate time from amputation to surgical reattachment was 3 hours.

Accepted for publication July 15, 1994.

* Requests for reprints: Department of Urology, U-575, University of California, San Francisco, California 94143-0738.

Intraoperative examination revealed a viable penis with partial shaft skin loss, and clean excision of the foreskin and distal third of the glans (fig. 2, A). The glans and amputated tissue were débrided gently, and the corpus spongiosum and urethra were reanastomosed with 6-zero chromic suture using loupe magnification (fig. 2, B). A 5F pediatric feeding tube was used to stent the urethra. The penile shaft skin was reapproximated with 4-zero chromic suture and a bulky petrolatum gauze/mineral oil immobilizing dressing was applied. The patient was sedated and observed in the neonatal intensive care unit for 48 hours. Intravenous gentamicin and vancomycin were given during hospitalization, and oral first generation cephalosporin was continued for 1 week after discharge home. The urethral stent was removed after 3 weeks with 90% take of the graft. There was some skin loss at the coronal sulcus. Polymyxin B-bacitracin ointment was applied to the glans twice daily. At 3 months postoperatively the grafted glans tissue was mildly contracted but cosmesis was excellent overall and voiding was normal through the meatus (fig. 2, C), which easily accepted an 8F catheter.

DISCUSSION

In the United States 65% of male newborns are circumcised.³ Indications have changed with time and now can be cultural, religious, medical or cosmetic. The many techniques of circumcision have a common goal: to remove equal amounts of inner and outer epithelial preputial tissue in a rapid, minimally traumatic and hemostatic fashion. The potential for complications during circumcision is real and ranges from the insignificant to the tragic. The fairly high rate (1.5 to 15%) reflects the fact that the procedure is often performed by an inexperienced individual without attention to basic surgical principles.³ Bleeding is common and can often be controlled by pressure but occasionally necessitates a suture or cautery. Another common problem is a displeasing cosmetic result with too much or too little foreskin remaining, which can be avoided by carefully marking the skin to be removed with a pen at the beginning of the procedure. Occasionally penile shaft skin will be removed while the inner prepuce is left, forming a concealed penis that requires surgical release.⁴ Most often this complication occurs when the surgeon fails to take down all of the glanular adhesions at the start of the operation. Infection occurs more frequently in postnatal circumcision, and can range from minor infection to sepsis and death.⁵⁻⁷ No reports suggested the use of prophylactic antibiotics in all cases but aseptic technique should minimize the postoperative infection rate. Urinary retention, meatitis and meatal stenosis (the result of contact between

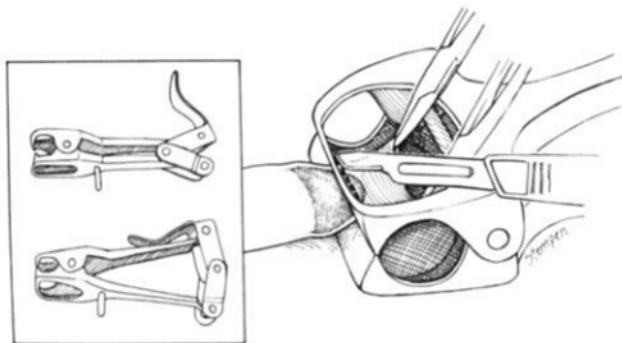


FIG. 1. Circumcision complication with Sheldon clamp

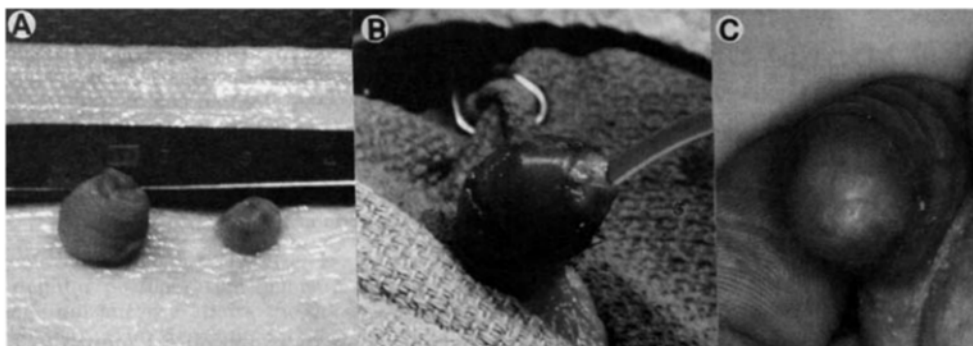


FIG. 2. A, glans and foreskin specimen. B, graft anastomosis with stent. C, 3-month followup with good cosmesis and function.

the exposed meatus and ammonia in wet diapers) are common enough to warrant discussion with parents. The more serious but relatively uncommon problems of chordee and inclusion cysts may necessitate subsequent surgery.⁸ Lymphedema, glans necrosis and fistula formation have been reported.⁹⁻¹³ Iatrogenic hypospadias and/or epispadias can occur when an incision down the foreskin is inadvertently extended into the urethra. Complaints of erectile dysfunction and psychosocial problems in adulthood have been attributed to circumcision, but they are largely unsubstantiated.^{14,15}

In retrospect, it is apparent that in our case the glans was inadvertently caught in the circumcision clamp when engaged and the distal aspect of the penis was excised during foreskin removal. This complication could have been avoided with careful retraction of the foreskin during placement of the Sheldon clamp over the glans and subsequent preputial excision. Excision of the penile glans is not common with only 1 previous case of penile excision with successful repair reported.¹⁶

We believe that glanular amputation should be treated according to standard principles of grafting in reconstructive surgery.¹⁷ The amputated tissue is best transferred in moist gauze, chilled but not in direct contact with ice, which might freeze the tissue. Intraoperative débridement allows neovascularization, and immobilization with a bulky dressing is important to allow imbibition and inosculation. Due to the relatively poor blood supply of the amputated tissues, antibiotics are appropriate to help prevent infection. The duration of urethral stenting should be sufficient to allow good take of the grafted tissue. Fortunately the distal glans tissue is well vascularized, and so good graft take is common. The most common complication after anastomosis is meatal stenosis, necessitating dilation or revision.

In our case circumcision was performed by a specialist (although a nonurologist) with experience of more than 300 circumcisions with the Sheldon clamp and no previous complications. Urologists perform few neonatal circumcisions but are often asked to treat the complications. Most circumcision injuries, including glans amputation, can be successfully managed with aggressive treatment.

REFERENCES

1. Wallerstein, E.: Circumcision. The uniquely American medical enigma. *Urol. Clin. N. Amer.*, **12**: 123, 1985.
2. Masciello, A. L.: Anesthesia for neonatal circumcision: local anesthesia is better than dorsal penile block. *Obst. Gynecol.*, **75**: 834, 1990.
3. Kaplan, G. W.: Complications of circumcision. *Urol. Clin. N. Amer.*, **10**: 543, 1983.
4. Talarico, R. D. and Jasaitis, J. E.: Concealed penis: a complication of neonatal circumcision. *J. Urol.*, **110**: 732, 1973.
5. Annunziato, D. and Goldblum, L. M.: Staphylococcal scalded skin syndrome. A complication of circumcision. *Amer. J. Dis. Child.*, **132**: 1187, 1978.
6. Clearly, T. G. and Kohl, S.: Overwhelming infection with group B beta-hemolytic *Streptococcus* associated with circumcision. *Pediatrics*, **64**: 301, 1979.
7. Kirkpatrick, B. V. and Eitzman, D. V.: Neonatal septicemia after circumcision. *Clin. Ped.*, **13**: 767, 1974.
8. Berman, W.: Urinary retention due to ritual circumcision. Letter to the Editor. *Pediatrics*, **56**: 621, 1975.
9. Lackey, J. T., Mannion, R. A. and Kerr, J. E.: Urethral fistula following circumcision. *J.A.M.A.*, **206**: 2318, 1968.
10. Limaye, R. D. and Hancock, R. A.: Penile urethral fistula as a complication of circumcision. *J. Ped.*, **72**: 105, 1968.
11. Sterenberg, N., Golan, J. and Ben-Hur, N.: Necrosis of the glans penis following neonatal circumcision. *Plast. Reconstr. Surg.*, **68**: 237, 1981.
12. Datta, N. S. and Zinner, N. R.: Complication from Plastibell circumcision ring. *Urology*, **9**: 57, 1977.
13. Gee, W. F. and Ansell, J. S.: Neonatal circumcision: a ten-year overview: with comparison of the Gomco clamp and the Plastibell device. *Pediatrics*, **58**: 824, 1976.
14. Mohl, P. C., Adams, R., Greer, D. M. and Sheley, K. A.: Prepuce restoration seekers: psychiatric aspects. *Arch. Sex. Behav.*, **10**: 383, 1981.
15. Palmer, J. M. and Link, D.: Impotence following anesthesia for elective circumcision. *J.A.M.A.*, **241**: 2635, 1979.
16. Hanash, K. A.: Plastic reconstruction of partially amputated penis at circumcision. *Urology*, **18**: 291, 1981.
17. Tromovitch, T. A., Stegman, S. J. and Glogau, R. G.: *Flaps and Grafts in Dermatologic Surgery*. Chicago: Year Book Medical Publishers, 1989.