

One-stage Reconstruction of Penile Paraffinoma Using Spiral Stitches FTSG and Evaluation of Sexual Function

Jufriady Ismy, PhD
 Mirnasari Amirsyah, MD
 I Nyoman Palgunadi, MD
 Gugum Indra Firdaus, MD
 Fakhru Rizal Fakhru Rizal, MD
 Said Alfin Khalilullah, MD

Summary: Paraffinoma of the penis is rare and caused by paraffin liquid injection. This condition can cause significant penile deformity, ulceration, pain, and sexual dysfunction. However, it can be managed with surgical procedures to obtain normal aesthetic and functional results. Herein, we reported a 42-year-old male with penile paraffinoma who underwent excessive surgical excision of the fibrotic tissue and one-stage reconstruction using a spiral stitch full-thickness skin graft. At one year of follow-up it showed a good aesthetic outcome with no hypertrophic scars, skin contractures, penile curvature, or penile shortening. The sexual evaluation using the International Index of Erectile Function instrument also showed a good result with normal erectile function and satisfaction with sexual sensation. This case is interesting because we used the spiral stitch full-thickness skin graft technique to cover the degloving area and long-term follow-up to evaluate the aesthetic and functional results. (*Plast Reconstr Surg Glob Open* 2022;10:e4048; doi: [10.1097/GOX.0000000000004048](https://doi.org/10.1097/GOX.0000000000004048); Published online 18 January 2022.)

Paraffinoma of the penis, also called sclerosing lymphogranuloma or sclerofibromatosis, is an uncommon condition of the male genitalia presenting as a firm, tender subcutaneous mass formed by paraffin liquid injection. Other injectable ingredients for penile enlargement have been reported, such as Vaseline.¹

There is no documented prevalence of penile paraffinoma, however, this case is mainly seen in southeast Asia and eastern Europe. The first case was reported by Robert Gersuny in 1899, who injected a substance into the penis with satisfactory cosmetic results. Subsequently, its use began to expand for breast and facial skin augmentation.¹ However, various complications have been reported due to lymphogranuloma formation, including circular fibrosis, scarring, pain, and chronic inflammation.²

Surgical treatment is still the best option for management of penile paraffinoma, with various techniques having been described.^{2,3} However, the best technique for reconstruction of penile paraffinoma is still a clinical dilemma.^{2,4,5} The choice of reconstruction technique

should consider the aesthetic aspects (eg, hypertrophic scars, penile contractures that lead to a curvature, and penile shortening) as well as the sexual function. Herein, we present a one-stage penile reconstruction using a full-thickness skin graft (FTSG) with spiral stitches as a suitable technique for penile paraffinoma followed by a 12-month evaluation after reconstruction surgery.

CASE REPORT

A 42-year-old man with painful and thickened skin along the shaft of his penis due to injection with paraffin liquid oil in an unregulated and nonsterile environment 5 years ago presented to the emergency department. He also complained about erectile dysfunction with an International Index of Erectile Function (IIEF) score of 10 (moderate erectile dysfunction) and unsatisfied sexual intercourse. On examination, we observed irregularly thickened, hard skin involving the whole circumference of the penile shaft, the corona of the glans penis extending through the small of the scrotum and suprapubic region. There were areas with skin discoloration along the hardened skin, but no signs of acute inflammation, discharge, or ulcers were observed (Fig. 1).

Intraoperative exploration found the fibrotic tissue involved both the skin and subcutaneous tissue layer along

From the Faculty of Medicine, Universitas Syiah Kuala, Aceh, Indonesia.

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Fig. 1. Preoperative finding: irregularly thickened hard skin penile extending through the scrotum and suprapubic region.

the shaft from the corona through the base of the penis, extending to the scrotum and suprapubic region. Careful dissection of the thickened tissue was performed circumferentially until the Bucks' fascia, which then proceeded into gloving the skin from the shaft of the penis. An FTSG was harvested from the inguinal region to cover the degloved area and anchored by using catgut 5/0 suture in a spiraling stitches technique (Fig. 2). Moist, fluffy gauze was also applied as a bolster dressing to secure skin grafts which were carefully undressed at five days postoperative after wetting the gauze to avoid skin detached from



Fig. 2. After excision of the fibrotic tissue. The FTSG was harvested from the inguinal region to cover the degloved area of the penis.

the underlying bed. Then, Vaseline gauze dressing was applied daily until the skin completely healed.

After eight days postoperative, the graft condition was good (See figure, Supplemental Digital Content 1, which shows the good surgical outcomes without hematoma, swelling, discharge, and skin necrosis. <http://links.lww.com/PRSGO/B888>). The patient was then followed up for 12-months after surgery. Although there is a slight deformity on the ventral aspect of the penis, no hypertrophic scar or skin contracture were observed (Fig. 3).

The patient was allowed to start sexual activity 1 month after surgery, but he was worried and first par-took after 2 months. Furthermore, sexual function has improved compared with preoperative conditions. We evaluated the sexual function using the IIEF score. (See table, Supplemental Digital Content 2, which illustrates the IIEF score questionnaire. <http://links.lww.com/PRSGO/B889>.) This instrument consists of 15 items and five domains that were developed for determining male sexual function.⁶ In this case, erectile function improved after 3-, 6-, and 12-months follow-up, with IIEF scores being 20, 23, 24, respectively. He was also satisfied with sexual sensation.

DISCUSSION

Extensive excision of the fibrotic tissue in penile paraffinoma followed by resurfacing of the penis has been reported to provide an excellent aesthetic result with no recurrence. Several resurfacing techniques such as flaps, split-thickness, or full-thickness skin grafts have been reported, with satisfactory results.⁷⁻⁹ Several aspects need to be considered in selecting the resurfacing technique, including aesthetic (eg, hypertrophic scar and skin contracture) and functional aspects.

In this case, we used spiral sutures to secure the FTSG as they reduce the risk of hypertrophic scars and skin contractures. In contrast to linear stitches, the spiral stitch can prevent pathological scars by not placing the suture in a straight line to effectively reduce the scar's tension.¹⁰ A case report conducted by Prasetyono found that the spiraling FTSG for resurfacing of the penis after paraffinoma excision has a good outcome, with no post-operative hypertrophic scar and no recurrence.³ We also avoided using flap dissection such as scrotal skin to prevent complications such as wound disruptions, penile shortening, and scrotal hematoma. Furthermore, FTSG results in a hairless penis, which is preferred to the undesired hairy penis observed after scrotal flaps reconstruction.¹¹ Additionally, FTSG also provided more sensitive skin that seemed to be more natural, which is abundant in sensory nerves.^{11,12}

Apart from the benefits mentioned above, another positive outcome after reconstruction is an improvement of sexual function in our case. The patient can achieve full penis length during an erection without pain and resume normal sexual intercourse with the satisfaction that can only be obtained by a good erection without pain and pathologic scar. Innervation in the glans has a more



Fig. 3. Twelve months of follow-up. A, A good cosmetic aspect without hypertrophic scar and no post-operative skin contracture. B, The slight deformity on the ventral aspect below the glans penis is just fatty tissue.

critical role than the shaft of the penis in erection and sexual sensation physiology.¹³

CONCLUSIONS

Penile paraffinoma can be treated by excessive surgical excision of the fibrotic tissue and continued by reconstruction. One-stage reconstruction with FTSG using a spiral stitch technique can result in a good clinical outcome, including cosmetic aspect, patient satisfaction, and sexual function.

Jufriady Ismy, PhD
Faculty of Medicine
Universitas Syiah Kuala
Aceh, Indonesia

E-mail: jufriadyismy@unsyiah.ac.id

REFERENCES

- Downey AP, Osman NI, Mangera A, et al. Penile paraffinoma. *Eur Urol Focus*. 2019;5:894–898.
- Salauddin SA, Ghazali H. Surgical techniques for correction of penile paraffinoma. *Malays J Med Sci*. 2019;26:137–142.
- Prasetyono TOH. One-sheet spiraling full thickness skin graft for penile resurfacing after paraffinoma excision. *Med J Indonesia*. 2011;20:222–225.
- Lee HG, Lim SY, Yoon CS, et al. Circumferential penile defect reconstruction with pull-up double-opposing keystone-designed perforator island flaps: a case report. *Medicine (Baltimore)*. 2020; 99:e18762.
- Syahrir S, Palinrungi A, Krahmadi E, et al. Characteristics and treatment of penile paraffinoma in Makassar, Indonesia. *Am J Med Sci Med*. 2017;5:53–55.
- Rosen RC, Cappelleri JC, Smith MD, et al. Development and evaluation of an abridged, 5-item version of the International Index of Erectile Function (IIEF-5) as a diagnostic tool for erectile dysfunction. *Int J Impot Res*. 1999;11:319–326.
- Fakin R, Zimmermann S, Jindarak S, et al. Reconstruction of penile shaft defects following silicone injection by bipedicle anterior scrotal flap. *J Urol*. 2017;197:1166–1170.
- Soebhali B. Penile self-injections for girth augmentation: treatment of complications. In: Martins FE, Kulkarni S, Kohler TS, eds. *Textbook of Male Genitourethral Reconstruction*. New York: Springer; 2020:783–794.
- Chon W, Koo JY, Park MJ, et al. Paraffin granuloma associated with buried glans penis-induced sexual and voiding dysfunction. *World J Mens Health*. 2017;35:129–132.
- Ogawa R. Ideal wound closure methods for minimizing scarring after surgery. In: Téot L, Mustoe TA, Middelkoop E, et al. eds. *Textbook on Scar Management*. Cham: Springer; 2020.
- Dellis AE, Nastos K, Mastorakos D, et al. Minimal surgical management of penile paraffinoma after subcutaneous penile paraffin injection. *Arab J Urol*. 2017;15:387–390.
- Alwaal A, McAninch JW, Harris CR, et al. Utilities of split-thickness skin grafting for male genital reconstruction. *Urology*. 2015;86:835–839.
- Dean RC, Lue TF. Physiology of penile erection and pathophysiology of erectile dysfunction. *Urol Clin North Am*. 2005;32:379–395.