# PENILE PARAFFINOMA RECONSTRUCTION WITH SCROTAL FLAP AND SURGICAL OUTCOME: A CASE REPORT

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***ABSTRACT***

***Objective:*** *To present a case of penile paraffinoma reconstructed with scrotal flap.* ***Case presentation:*** *We report a case of 33-year-old male patient with penile paraffinoma. The patient had a history of injecting liquid paraffin into his penis two times – at 6 months and 2 months prior to his admission to the hospital. His IIEF-5 was 10 (moderate erectile dysfunction). The penile shaft was circumferentially enlarged. There was ulceration on the ventral aspect with signs of inflammation on the surrounding skin.* ***Discussion:*** *We perform a complete excision of paraffinoma. The raw surface was repaired with a one-stage scrotal flap. At six-month follow up, the wound was good, and the patient was able to micturate normally. He was able to achieve painless erection, and IIEF-5 score was improved.* ***Conclusion:*** *A one-stage scrotal flap may offer a good choice in defect closure in penile paraffinoma reconstruction.*

***Keywords:*** *Penile paraffinoma, scrotal flap, one-stage, penile defect.*

***ABSTRAK***

***Tujuan:*** *Kami melaporkan sebuah kasus paraffinoma penis yang dilakukan rekontruksi menggunakan scrotal flap.* ***Presentasi kasus:*** *Kami melaporkan seorang pasien laki-laki, 33 tahun dengan paraffinoma penis. Pasien memiliki riwayat menyuntikkan cairan paraffin ke penisnya sebanyak 2 kali pada 6 dan 2 bulan sebelum masuk rumah sakit. Nilai skor IIEF-5 pasien adalah 10 (disfungsi ereksi sedang). Shaft penis membesar secara sirkumferensial. Terdapat ulkus pada sisi ventral penis dengan tanda-tanda inflamasi pada kulit sekitar.* ***Diskusi:*** *Kami mengerjakan eksisi paraffinoma pada pasien. Defek pada shaft penis kami rekonstruksi satu tahap tutup dengan scrotal flap. Pada evaluasi enam bulan pasca operasi, luka operasi baik dan pasien dapat buang air kecil dengan normal. Pasien juga dapat ereksi tanpa disertai nyeri. Nilai skor IIEF-5 pasca operasi menunjukan perbaikan yang baik.* ***Simpulan:*** *Scrotal flap satu tahap dapat dijadikan sebuah pilihan dalam menutup defek pada kasus rekontruksi paraffinoma penis.*

***Kata kunci:*** *Paraffinoma penis, scrotal flap, satu tahap, defek penis.*

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## INTRODUCTION

Penile augmentation by means of subcutaneous injection of filler agents is a practice well-known since the early 1900s.[1] Fillers may induce adverse reactions and may persists depending on whether they are biodegradable or not. Paraffin is a non-absorbable filler which is able to induce granulomatous reactions.[2] Adverse reactions to injection of fillers are the result of normal host immune response to foreign bodies. This may be in the form of penile inflammation, which includes abscess, ulceration, Fournier's gangrene, which ultimately leads to scarring, deformity and erectile dysfunction.[1] Treatment is directed towards complete radical excision of foreign material and necrotized tissues and surgical reconstruction.[3] We report a case of penile paraffinoma presenting with ulceration after repeated penile self-injection of paraffin, repaired using a one-staged scrotal flap.

## CASE PRESENTATION

A 33-year old, heterosexual, circumcised, Indonesian man presented with intermittent painful (visual analog scale 3) ulcer on the dorsal aspect of the penis. The pain felt more intensified on erection. The patient had a history of injecting liquid paraffin

into his penis two times - at 6 months and 2 months prior to his admission to the hospital. There was no complaint on micturition and no fever. His International Index of Erectile Function-5 (IIEF-5) score was 10 (moderate erectile dysfunction). His vital signs were in normal range and on physical examination, the penile shaft was circumferentially enlarged. There was ulceration on the ventral aspect (Figure 1) with signs of inflammation on the surrounding skin. Laboratory panels were normal. The patient was prepared for surgery.

The patient was planned for surgery – excision of penile paraffinoma with reconstruction of the penile shaft using scrotal flap. The surgery was performed with the patient supine under spinal anesthesia. Prior to surgery, the patient was given prophylactic antibiotic (Cefoperazone + sulbactam) and a 16 Fr Foley catheter was inserted. Intraoperative findings revealed fibrosis throughout the penile shaft, upper part of the scrotum, and mons pubis. These fibrotic tissues were excised. The penis was reconstructed by creating a scrotal flap (Figure 2, 3). The flap was sutured tension-free, interruptedly (Figure 4). The Foley catheter was kept in place. The surgery took four hours. There were no complications. Estimated intraoperative blood loss was about 100ml.

Regular follow up after surgery, there were no oozing or signs of infection from the operation wound, and the flaps were vital. Foley catheter was removed on day-2 after surgery and the patient was discharged with oral medications (antibiotics and NSAID analgesic). At six month follow up, the operation wound was good with no signs of infection or inflammation (Figure 5). There were no recurrence, wound infection or dehiscence, and no micturition complaints. He was able to achieve erection without pain. His sexual function, based on IIEF-5 score was 21 (mild erectile dysfunction).

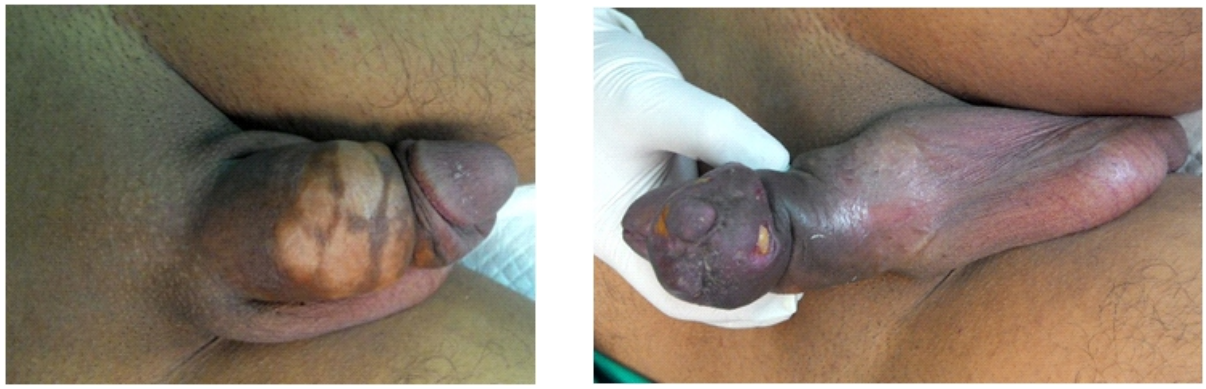

**Figure 1.** (A) Dorsal view showing and enlarged penile shaft; (B) Ulceration of the penile shaft (arrow) on the ventral side with signs of inflammation.

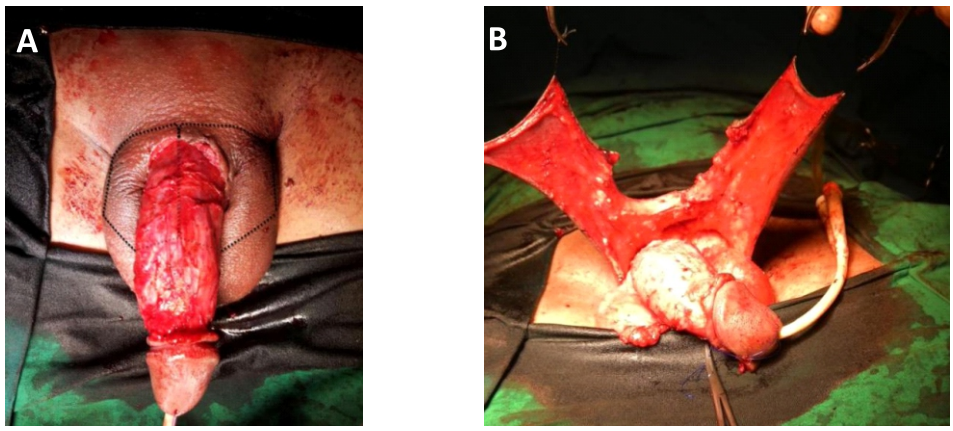


**Figure 2.** Intraoperative appearance (A) dorsal view after excision of fibrotic tissue (dotted lines indicate area that will be used as flap (in figure 2B) and (B) creating a bilateral scrotal flap.

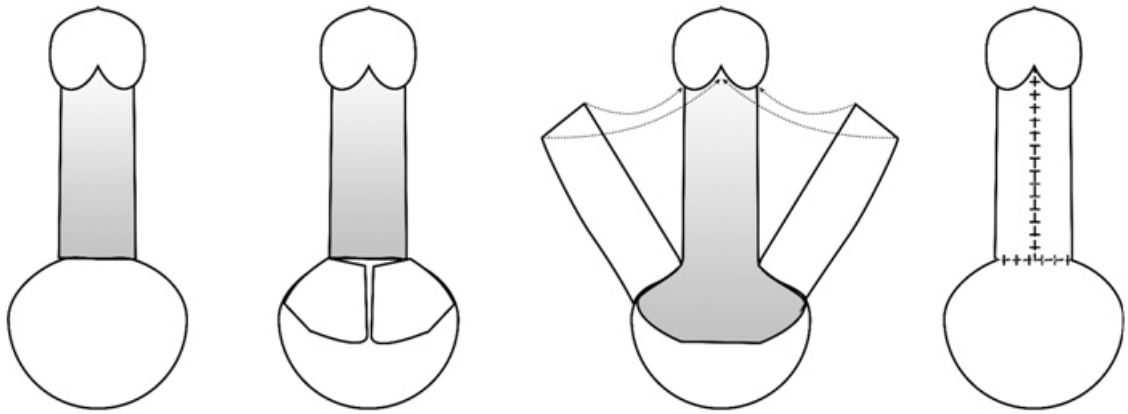

**Figure 3.** Illustration of scrotal flap.

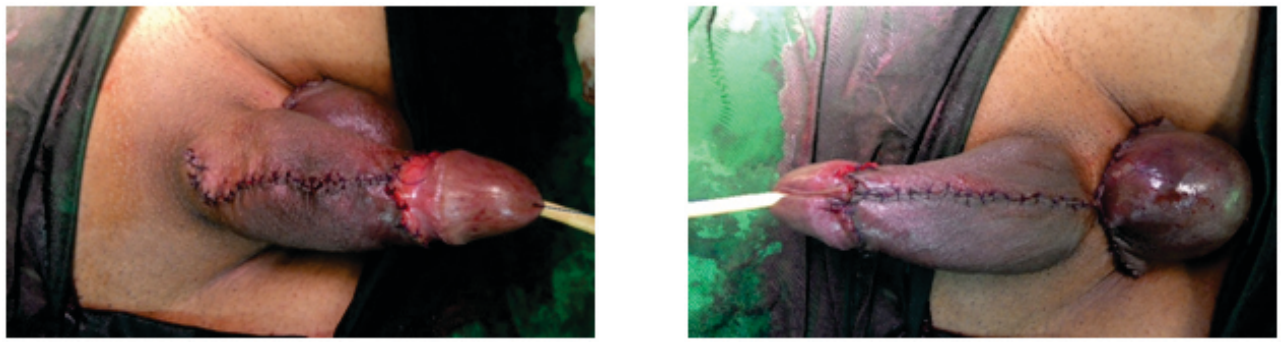

**Figure 4**. Postoperative appearance: (A) dorsal view, and (B) ventral view.

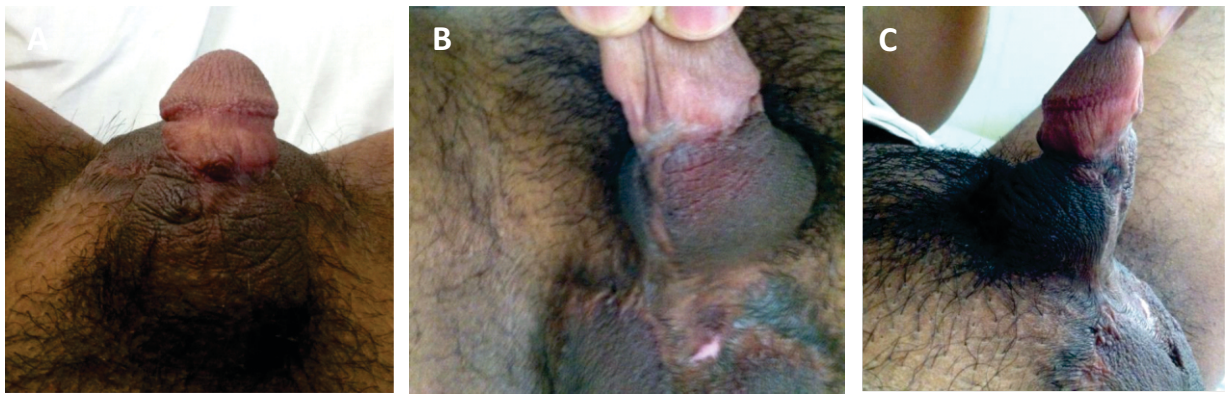


**Figure 5.** Six month postoperative appearance: (A) dorsal view, (B) ventral view, (C) lateral view.

## DISCUSSION

Penile augmentation with subcutaneous fillers such as paraffin, mineral oil, and silicon is a practice commonly performed by men to improve their penis size with the aim of improving self-esteem and impress their sexual partners.[4,5] Such practice has been dated as early as the 1900s and are often found in Eastern Europe and Asia.[1,6] These filler agents may induce inflammatory reactions and results in adverse inflammatory conditions (abscess, ulceration, and Fournier's gangrene). In the long term, it may result to penile scarring and deformity, phimosis, voiding difficulty, erectile dysfunction,

and inability to perform sexual intercourse.[1,4,5,7] Penile paraffinoma remains a clinical diagnosis. A detailed history taking with a focus on injection of fillers into the genitalia and physical examination is sufficient to establish diagnosis.[6]

Our patient underwent repeated (two times) self-injection of paraffinoma into his penile tissue. He experienced painful erections, penile ulceration, and moderate erectile dysfunction which made him seek medical attention to our department. Our patient underwent complete surgical excision of fibrotic and necrotic tissues. If not excised completely, it may result in graft loss and recurrent ulceration.[4,7]

The resulting raw surface, denuded penis, was covered adequately using scrotal flaps. Alternatively, skin coverage may be attained with split-thickness, full-thickness skin graft, or flap. Compared to the former two, flap has an advantage that it offers a more stable skin coverage and does not undergo contraction.[7,8] Repair may be accomplished by undermining a cuff of scrotal skin (creating a scrotal tunnel) then burying the denuded penis within this subcutaneous tunnel. The glans is left exposed for micturition. The process was continued weeks later where the penis was freed from its subcutaneous bed and repaired.[9] While this method offered satisfactory results, it is a two-staged repair. Locoregional flap using the anterolateral thigh (ALT) perforator flap may be used to cover skin defects with good cosmetic outcome.[10] However, the procedure is complex and a follow-up thinning procedure is often necessary to reduce the flap bulk. On the other hand, our scrotal flap, offers a simple, effective, reliable one-stage reconstruction, and the skin color and texture are similar to the original penile skin.[7,11] It may be the best choice if the scrotal skin is not involved.[11] The main disadvantages of this technique were: 1). in patients with hirsute scrota, scrotal hairs were moved into the penis, and 2). scrotal size is reduced[4,7,8]

The patient underwent surgical excision and reconstruction using scrotal flap with a satisfactory 6-months outcome. There were no recurrence, wound-infection or dehiscence, and no complaints in voiding. Cosmetic outcome was quite satisfactory, although there were scrotal hair growth in the reconstructed penis. He was able to attain painless and comfortable erections. Sexual function as assessed with IIEF-5 questionnaire showed a marked improvement from a score of 10 (moderate erectile dysfunction) to 21 (mild erectile dysfunction) in 6 months.

## CONCLUSION

Penile paraffinoma has a long term functional impact on the penis. Radical excision and reconstruction remain as the treatment of choice. Single-stage reconstruction using scrotal flap may offer a good choice in defect closure.

## REFERENCES


1. De Siati M, Selvaggio O, Di Fino G, Liuzzi G, Massenio P, Sanguedolce F, et al. An unusual delayed complication of paraffin self-injection for penile girth augmentation. BMC Urology. 2013; 13: 66.
2. Requena L, Requena C, Christensen L, Zimmermann US, Kutzner H, Cerroni L. Adverse reactions to injectable soft tissue fillers. Journal of the American Academy of Dermatology. 2011; 64(1):1-34; quiz 5-6.
3. Rosenberg E, Romanowsky I, Asali M, Kaneti J. Three cases of penile paraffinoma: a conservative approach. Urology. 2007; 70(2): 372 e9-10.
4. Kim SW, Yoon BI, Ha US, Kim SW, Cho YH, Sohn DW. Treatment of paraffin-induced lipogranuloma of the penis by bipedicled scrotal flap with Y-V incision. Annals of plastic surgery. 2014; 73(6): 692-5.
5. Al-Ansari AA, Shamsodini A, Talib RA, Gul T, Shokeir AA. Subcutaneous cod liver oil injection for penile augmentation: review of literature and report of eight cases. Urology. 2010; 75(5): 1181-4.
6. Kokkonouzis I, Antoniou G, Droulias A. Penis deformity after intra-urethral liquid paraffin administration in a young male: a case report. Cases Journal. 2008; 1(1): 223.
7. Jeong JH, Shin HJ, Woo SH, Seul JH. A new repair technique for penile paraffinoma: bilateral scrotal flaps. Annals of plastic surgery. 1996; 37(4): 386-93.
8. Nyirady P, Kelemen Z, Kiss A, Banfi G, Borka K, Romics I. Treatment and outcome of vaseline-induced sclerosing lipogranuloma of the penis. Urology. 2008; 71(6): 1132-7.
9. Wilson CL, Wilson MC. Plastic repair of the denuded penis. South Med J. 1959; 52: 288-90.
10. Spyriounis PK, Karmiris NI. Partial penile reconstruction following fat augmentation with anterolateral thigh perforator flap. Journal of Plastic, Reconstructive & Aesthetic Surgery: JPRAS. 2012; 65(1): e15-7.
11. Jindarak S, Angspatt A, Loyvirat R, Chokrungvaranont P, Siriwan P. Bilateral scrotal flaps: a skin restoration for penile paraffinoma. Journal of the Medical Association of Thailand = Chotmaihet thangphaet. 2005; 88 (Suppl 4): S70-3.