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### Bilateral Technique of Penis Flap with Scrotum Skin in Penile Paraffinoma Cases: A Case Report

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#### ABSTRACT

**Background:** Paraffin injection into the penis is one way that people see it as increasing penis size. But many do not know that paraffin injection actually causes side effects in the form of penile paraffinoma. This study aimed to describe the management of paraffinoma using bilateral techniques. **Case presentation:** A 40-year-old married man came to the emergency room at Samuel J. Moeda Naval Hospital, Kupang, with complaints of pain and swelling of the penis for 6 hours. The pain felt to get worse when the penis was erected. The genital organs found swelling of the entire penile skin accompanied by tenderness and induration. The bilateral scrotal flap technique was because the scrotal skin had many blood vessels, good flexibility, little adipose tissue, thin skin, and could feel erogenous sensations almost the same as the physiological characteristics of the penile skin. **Conclusion:** Bilateral scrotal flap technique on the penile shaft is a surgical technique that is quite effective in eradicating paraffin from penile tissue.

#### 1. Introduction

Currently, paraffin is used as an injection material in the subcutaneous tissue of the penis to increase penis size.<sup>1,2</sup> paraffin or exogenous oil remains stable and semi-solid at room temperature but melts when it is warm.<sup>3,4</sup> The lack of enzymes in the human body to degrade paraffin causes various complications. Most of them, in the form of deformities, are the result of a granulomatous reaction. This reaction causes sclerosing lipogranuloma or often referred to as penile paraffinoma cases. The arising complications result in psychological problems to emotional stress due to aesthetic and functional disorders, which result in impotence, pain during sexual intercourse, and even

the inability to perform sexual activities. Operations in cases of penile paraffinoma are very challenging to perform. However, the excision of foreign material with appropriate phalloplasty techniques can provide satisfactory results.<sup>5,6</sup> This study aimed to describe the management of paraffinoma using bilateral techniques.

#### 2. Case Presentation

A 40-year-old married man with 2 children came to the emergency room at Samuel J. Moeda Navy Hospital, Kupang, with complaints of pain and swelling of the penis for 6 hours. The pain felt to get worse when the penis was erected. The patient had

received an injection into the skin of the penis in the form of approximately 20 ml of oil about one year ago by non-medical personnel.

On examination, vital signs and general physical examination were within normal limits. Special examination of the genital organs found swelling of the entire penile skin accompanied by tenderness and induration. The glans penis looked bluish with edema and pain, but no urinary retention was found. Examination of the testes, scrotum, suprapubic, and local lymph nodes showed that they were within normal limits. Besides, the results of routine laboratory tests on blood samples were still within normal limits. The patient and his family understood and agreed to the action to be carried out after they got a further explanation.

The operation was carried out in 1 stage. It aimed to remove tissue damaged by paraffin injection with wide excision of the skin and subcutaneous tissue. After that, a bilateral scrotal flap was performed. The operation began by positioning the patient in a supine position under general anesthesia and placing a catheter on the patient. Before the excision, the surgical design was described. The excision was initiated by rotating the skin from the proximal to the coronal shaft of the penis, followed by carefully excising the fibrotic tissue. After the fibrotic tissue on the penile shaft had been completely excised, the scrotal skin was cut according to the design that was previously made using scalpel blades carefully and minimizing the use of electrocautery diathermy. Then, after the scrotal skin had been successfully freed from the underlying tissue, followed by suturing the scrotal skin on the penis carefully. It was called the bilateral scrotal flap because it used 2 scrotal flaps, namely the two lateral to the shaft of the penis and the skin under the scrotum to the median raphe. Each flap enclosed the shaft with two T-style anastomoses at the distal, ventral, and dorsal ends of the shaft. After the scrotal skin had been successfully sutured, the scrotal skin was sutured again. The surgical wound was then closed. Finally, the operation process was completely done.

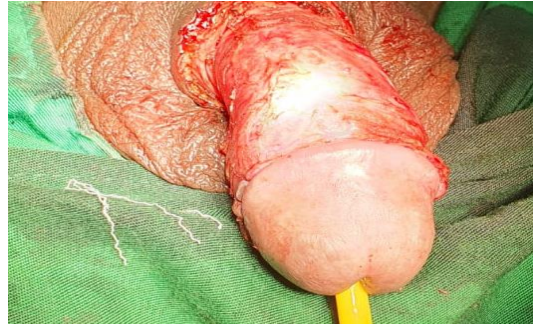
Furthermore, three-month follow-up care was conducted for the patient. In the first month, the complaints were pain in the surgical site and painful morning erections, but no complaints when the patient urinated. In the second month, complaints of pain in the operating area decreased, but the wound in the operating area had not been dry perfectly, especially the dorsal area of the corona penis because it was wet when the patient urinated. Besides, the patient still felt pain during morning erections. Then, the surgical wound was always treated and cleaned properly, and the patient was educated and suggested to always maintain the sanitation of the surgical wound area. In the third month, the surgical wound was dry. The patient complained that some pubic hair grew around the shaft of the penis. There were no complaints of pain during morning erections or when urinating.

### **3. Discussion**

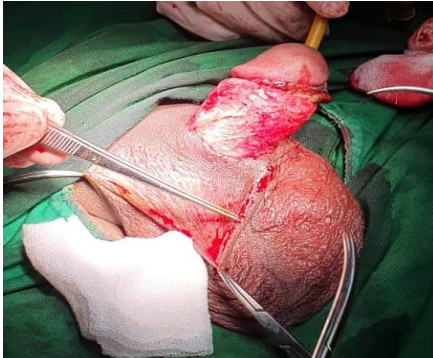
In most cultures, especially in Asia regions, having a large penis size is a symbol of strength, pride, and masculinity for a man.<sup>6-8</sup> A penis is a male reproductive organ that has a dual function. It can be a channel for either urine or semen to come out. It consists of the root/radix, body, and glans.<sup>9,10</sup> A penis gets its blood supply from the internal pudendal artery, which branches into the dorsal artery of the penis and the deep artery of the penis.<sup>11,12</sup> In medical science, a dermal-fat graft is a procedure that can increase the size of a penis.<sup>13,14</sup> However, it is costly. Therefore, many people prefer other, more affordable methods, such as mineral oil or paraffin injections, without thinking about the side effects that may arise. After 1917, the use of mineral oil for body injection was discouraged. This was due to several reports of adverse side effects. Most of the patients who got paraffin injections were aged 28-32 years, with the youngest ever found, 13 years.<sup>5,10</sup> The most common reasons for practicing paraffin injections were to increase the penis size (56%), overcome erectile dysfunction (32%), and lack confidence in the penis size (17%).



A



B



C



D



E



F



G

Figure 1. (A) a preoperative photo of the swollen penis; (B) the shaft of the penis is freed from fibrous tissue. (C) the excision of the flap tissue in the scrotum (D) the flap tissue on both sides of the scrotum has been released (E) the subcutaneous tissue and skin of the scrotum are gently sutured. (F, G) the final result of the flap.



A

B



C



D

Figure 2. (A, B) the first-month follow-up care for the patient; (C, D) the third-month follow-up care for the patient.

Most of the patients claimed to have received information concerning injection practices from friends or co-workers (49%).<sup>5,9</sup> While injection procedures were usually performed by non-medical personnel (78%), either by the patients themselves, friends, or other people who were recommended.<sup>9,12</sup> In the case presented, a 35-year-old male patient had a history of fluid injection into the shaft of his penis a year ago to increase the size of the penis. The injection was carried out by the patient's acquaintance, who was a non-medical worker. During the physical examination of the penis, swelling and erythema were found, and penile deformity as well.<sup>4</sup> In acute cases, the injection site may be visible on careful examination. Palpatory examination along the penile shaft is useful to find areas under the skin that are indurated. These lesions can be mobilized if they are

still within the limits of the skin tissue or fixed if they are found in deeper parts as a result of the fibrosis process. Patients usually come with complaints of a lump in the area around the injection. This can happen because the injected paraffin cannot fully spread based on the anatomy of the penis. As a result, it can cause an inflammatory reaction, pain, edema, necrosis, erection pain, and swollen lymph nodes in the inguinal can occur.<sup>12,15</sup>

Initial therapy for penile paraffinoma can be in the form of medical therapy to overcome the process of local inflammatory reactions. The use of second or third-generation cephalosporin antibiotics and non-steroidal anti-inflammatory drugs (NSAIDs) for 1-2 weeks is expected to reduce local inflammatory reactions.<sup>13,14</sup> There are several surgical techniques in penile paraffinoma cases, such as partial excision with

primary closure, one-sheet spiraling full-thickness skin graft, bilateral scrotal flap, inverted ventral V-Y plasty, fasciocutaneous radial forearm free flap, and two-stage cutaneous plasty with scrotal skin.<sup>11,12,15</sup> In this case report, the authors used the bilateral scrotal flap technique because the scrotal skin had many blood vessels, good flexibility, little adipose tissue, thin skin, and could feel erogenous sensations almost the same as the physiological characteristics of the penile skin.<sup>7,8</sup> This technique was also selected because it showed better results in skin flexibility during erection, in the natural shape of the penis, in skin color similarity, and in its resistance during intercourse compared to doing a graft.<sup>1,6</sup> The disadvantage of doing a scrotal flap was that there was some hair on the scrotal skin which could interfere with the patient's comfort.<sup>6</sup> Besides, the devascularization of the penis skin is better on the skin that is not follicular, so complaints of dyspareunia frequently occur.<sup>1,6</sup>

In several cases of one-step bilateral flaps, delays in wound healing were reported, resulting in necrosis of the skin, especially at the ends, due to poor blood vessel supply in the area and poor sanitation.<sup>6</sup> Comparison of efficiency and complication rates of various methods of penis reconstruction in cases of penile paraffinoma was difficult to describe due to limited study populations, and most publications were in the form of case reports. However, the scrotal flap technique in penile paraffinoma cases has had low complication rates and success rates thus far.<sup>8</sup>

#### 4. Conclusion

The bilateral scrotal flap technique on the penile shaft is a surgical technique that is quite effective in eradicating paraffin from penile tissue.

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