

Bilateral Scrotal Flaps: A Skin Restoration for Penile Paraffinoma

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Foreign body injection into the penile shaft, in the mistaken belief that it could increase the size, is not uncommon among Thai males. Paraffin, oil, and other materials had been injected into the penile skin and predictably followed by a lot of complications. Foreign body granuloma, disfigurement, chronic and unhealed ulcer, painful erection, and the inability to achieve sexual activities are those following complications. In the severe cases, even though the complete resection of the skin and all of the infiltrated tissue was meticulously performed, some foreign bodies had to be left since they had incorporated into either the corpus cavernosum or corpus spongiosum. Durable resurfacing skin can't be perfectly achieved by skin grafting in these situations. Between 1996 and 2002, 31 patients with penile paraffinoma have been treated using bilateral scrotal flaps. Both functional and cosmetic goals without any major complications were achieved in all of the patients.

Keywords: Bilateral scrotal flap, Scrotal flap, Penile paraffinoma

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Alloplastic material Injection, in the mistaken belief that it could increase the size of the injected parts, could be long traced back in the history of medicine. Most of them were followed by foreign body granuloma or fibrosis which is the main pathology that leads to all other problems. Without a proper explanation, the incidence of these problems is not uncommon among Thai males. Paraffin, oil, vaseline, and other materials had been injected into the penile skin and almost always followed by a lot of complications. Foreign body granuloma, disfigurement, chronic and unhealed ulcer, painful erection, and the inability to achieve sexual intercourse are those following complications⁽¹⁾. All of this practice is done by non medical personnel or the patient himself.

The treatments of these problems depend on the severity of each individual case. Starting from a simple excision if the lesion is small and the vascularity of the penile skin is still intact. In severe cases in which

the lesion involved a large area and the vascularity of the penile skin had been destroyed, inevitably the complete resection of the skin and all the infiltrated tissue had to be done followed by the resurfacing procedures. In the severe cases, some foreign bodies had to be left since they had incorporated into either the corpus cavernosum or corpus spongiosum. Durable resurfacing skin can't be perfectly achieved by skin grafting in these situations⁽²⁻⁶⁾.

The authors used a bilateral scrotal flaps technique, which is well described by Jeong JH et al⁽¹⁰⁾, in resurfacing the penile shafts in these complicated cases. The scrotal skin is pliable, thin, elastic, sensate and similar in texture to the original penile skin. The technique is a simple, very reliable and one stage reconstruction.

Material and Method

From 1996 to 2002, 31 patients who suffered from complicated foreign body granuloma of the penile skin underwent total resection of the involved skin and reconstructed with bilateral scrotal flaps in the

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division of plastic and reconstructive surgery, Department of Surgery, King Chulalongkorn Memorial Hospital were included in a retrospective study. The patients whom the scrotal skin was also involved were excluded from the present study. 23 patients presented with severe penile deformity, the rest presented with unhealed ulcers. Most of the patients felt pain during erection and a few of them were unable to achieve normal sexual intercourse. The average age of the patients was 28.9 years. The mean follow-up period was 8 months (Table 1).

Operative Technique

The preoperative design of the bilateral scrotal flaps had to be based on the fully erected penis which could be achieved by putting the patients under spinal anesthesia. The size of each flap was the length of the penile shaft (A) and a half of the penile circumference as the width (B) (Fig. 1). In contrast to Jeong et al 's study⁽¹⁰⁾, the authors had found that the slightly bigger flaps were better particularly in the retracted thick skinned scrotum.

Intraoperative technique is pretty much the same as described by Jeong JH et. After total removal of the infiltrated skin was performed with Buck's fascia and neurovascular bundle preserved. The designed flaps were raised. It is necessary to always include Darto's fascia with in the raising scrotal flaps. Meticulous hemostasis is very important since hematoma can easily occur in this expandable scrotal skin. The authors only made a Z-plasty in the ventral suture line but not at the penoscrotal junction. The authors experienced that the sharp distinction between the penile and scrotal skin is crucial in order to create a new penoscrotal junction. If this junction is not sharp it would make the penile shaft look shorter (Fig. 2).

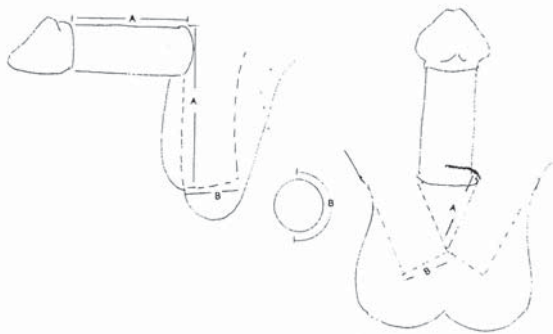


Fig. 1 Preoperative design of flaps. The dorsal length = A. Width = B = a half of penile circumference. The ventral length = A plus a few more length

Table 1. Patient Characteristics

	No
All cases	31
Reviewed cases	31
Mean age (year)	28.7
Follow-up period (month)	
Mean	8
Range	6-12



Fig. 2 Operative technique of the bilateral scrotal flaps

Only a conventional dressing was placed. The patient was admitted for 2-3 days. Sexual activity should be avoided for 6 to 8 weeks postoperatively.

Results

Immediate and long term follow up were done in all of the patients with the mean follow up time of 8 months. All the patients had came back for a special follow up clinic which emphasized on shape, texture, sensation, the ability to have normal sexual activity and any complications. There was one distal necrosis of the flap, two cases of delayed healing all of them healed spontaneously after 3 weeks without long term morbidity. There was one case of hematoma which needed drainage. All the other flaps survived completely.

In the long term follow up clinic, all of the patients were able to return to normal sexual life without any major morbidity. Two patients complained of small scrotal size and minimal skin web at the penoscrotal junction without contracture was found in three patients. Hair on the penile skin was noticed in 4 patients and in these cases shaving had to be done once in a while. There was no any dyspareunia identified (Table 2).

Discussion

Foreign body injection into several parts of the human body by non medical professional personnel is not uncommon among the Thai population. The injected substance comprises of liquid silicone, paraffin, Vaseline, emulsion, oil etc. These would definitely lead to a variety of complications depending on the nature and quantity of the injected substances. Onset of the complications also varies upon the purity and nature of the injected substance⁽⁷⁻⁸⁾. There are a lot of minor complications which could be ignored by the patients. Some of them could be treated by excision or other minor operations. The incidence of paraffinoma of the penis is rising among Thai men in the mistaken belief that it would augment the penile shaft. Skin

grafting on the denuded phallus in these cases did not achieve satisfactory result.

The blood supplies of the scrotal skin are mainly from three sources. The anterior part is supplied by the deep external pudendal artery, the posterior part by branches from the internal pudendal artery, and the inner side by branches from the testicular and cremasteric arteries. The anterior part is innervated by the ilioinguinal nerve while the posterior part is innervated by branches from the peroneal nerve and posterior femoral cutaneous nerve⁽¹¹⁾.

Several other techniques, including other types of scrotal flaps have been used by the authors since 1994, some of them need meticulous dissection and some are two- stage reconstructions^(2-6,9). Bilateral scrotal flaps is a simple technique, very reliable, one-stage reconstruction, sensate, pretty similar to the original penile skin both for colour and texture. It is best for the patients in which scrotal skin is not involved. If the scrotal skin is also infiltrated, some adaptation in flap design otherwise two-stage reconstruction should be considered.

Conclusion

Regarding a substitution for penile skin, scrotal skin is the only skin that is pretty much similar in all considerations. Bilateral scrotal flaps have proved to be very reliable and providing a satisfactory result technique in treating penile paraffinoma.

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Table 2. Complications

	No
Distal flap necrosis	1
Delayed healing	2
Hematoma	1
Small scrotum	2
Skin web at penoscrotal junction	3
Dyspareunia	0
Hair on penile skin	4

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การผ่าตัดใช้ Bilateral Scrotal Flaps เพื่อรักษาผู้ป่วย Penile Paraffinoma

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การหลงผิดใช้วัสดุต่าง ๆ เช่น พาราฟิน, น้ำมัน และสารอื่น ๆ ฉีดเข้าที่ผิวหนังของอวัยวะเพศชายเพื่อหวังให้มีขนาดใหญ่ขึ้น พบได้ไม่น้อยและมีแนวโน้มที่เพิ่มขึ้นในผู้ชายไทย สารเหล่านี้เมื่อเข้าสู่ร่างกายจะทำให้เกิดอาการแทรกซ้อนตามมา ได้แก่ เป็นก้อนแข็งจากปฏิกิริยาของสารนั้น ๆ อวัยวะเพศมีรูปร่างผิดปกติ เป็นแผลเรื้อรังหรือไม่หาย มีอาการเจ็บเมื่ออวัยวะเพศแข็งตัว หรือ ไม่สามารถมีเพศสัมพันธ์ได้ การผ่าตัดรักษาในกรณีที่มีอาการรุนแรงจำเป็นต้องตัดผิวหนังและเนื้อเยื่อที่ถูกทำลายโดยสารแปลกปลอมเหล่านี้ออกทั้งหมด แม้กระนั้นในบางกรณีก็ไม่สามารถกำจัดออกทั้งหมดได้ เนื่องจากสารเหล่านี้ในบางครั้งได้แทรกซึมเข้าไปใน corpus cavernosum หรือ corpus spongiosum ทำให้ไม่สามารถใช้การปลูกถ่ายผิวหนังธรรมดาในการรักษาให้ได้ผลลัพธ์ที่ดีได้ ในช่วงระหว่างปี พ.ศ. 2539 ถึง พ.ศ. 2545 คณะผู้ทำการศึกษาค้นคว้าได้ทำผ่าตัดรักษาผู้ป่วยที่มีความผิดปกติของอวัยวะเพศชายที่เกิดจากการฉีดสารต่าง ๆ จำนวน 31 ราย ด้วยการใช้ Bilateral scrotal flaps การรักษาได้ผลดีทั้งในส่วนของการรูปร่างและการทำงาน โดยไม่พบอาการแทรกซ้อนรุนแรงใด ๆ จากการผ่าตัด