

## Paraffinoma of the Penis

Tack Lee<sup>1</sup>, Hak Ryong Choi<sup>1</sup>, Young Tae Lee<sup>1</sup> and Yong Hui Lee<sup>2</sup>

*Augmentation of the body contour by localized injection of hard and soft paraffin rose to a zenith of popularity in the early 1900s, whereafter the severe destructive consequences of such injections became widely recognized. However in Korea, these injections are still performed much by nonmedical person. Paraffin or other mineral oil injection into body is no more a useful method to change body contour. We reviewed 26 cases of sclerosing lipogranuloma of penis with complications in recent 13 years after mean 18.5 months from previous injection of paraffin or vaseline. We conclude that the public should be informed of detrimental effects of paraffin injections and that the best treatment of penile paraffinoma is complete excision and appropriate penoplasty.*

**Key Words:** Sclerosing lipogranuloma, penis

Sclerosing lipogranuloma is a clinical and pathologic entity characterized grossly by the formation of very firm, often flat, nodules of indurated fat in various portion of the body. The recognized etiologic factors responsible for sclerosing lipogranuloma include trauma, inflammation, and injection of oil, but the disease may be idiopathic (Best *et al.* 1953).

The term "paraffinoma" has been suggested by Newcomer and Graham as a more correct designation for those cases with similar histopathologic findings in which exogenous materials such as vegetable or mineral oils have induced the change (Frederick *et al.* 1971).

Herein we present 26 cases of penile paraffinoma and review the clinical characteristics, pathology, treatment modality and outcome.

### MATERIAL AND METHODS

We reviewed 26 cases of sclerosing lipogranuloma involving male genitalia during a period of 13 years (from 1981 to 1993).

We studied

- 1) clinical characteristics of such cases,
- 2) operative methods and the outcome,
- 3) pathological characteristics

### RESULTS

#### Clinical characteristics

All patients have histories of paraffin or vaseline injections for the purpose of penile augmentation by non-medical persons. The average age of patients at the time of injection was 39.6 years (19~77). The most common purpose to inject paraffin was to increase penile size (Table 1).

Mean with period of 18.5 months later, penises of 19 patients had become tender and painful in injected site, and the other 7 pa-

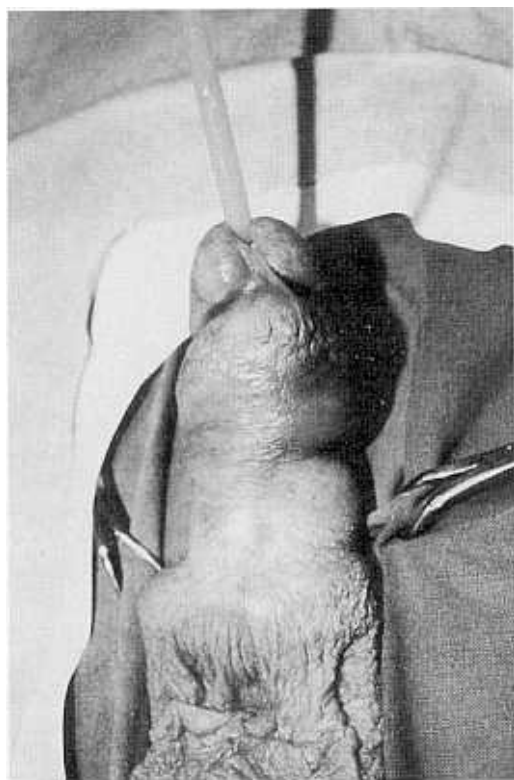
Received April 18, 1994  
Accepted August 1, 1994  
Department of Urology<sup>1</sup>, Yonsei University College of Medicine, Seoul, Korea  
Department of Pathology<sup>2</sup>, Yonsei University College of Medicine, Seoul, Korea  
Address reprint requests to Dr. T. Lee, Department of Urology, Yonsei University College of Medicine, C.P.O. Box 8044, Seoul 120-752, Korea

**Table 1. Purposes of penile augmentation by paraffin**

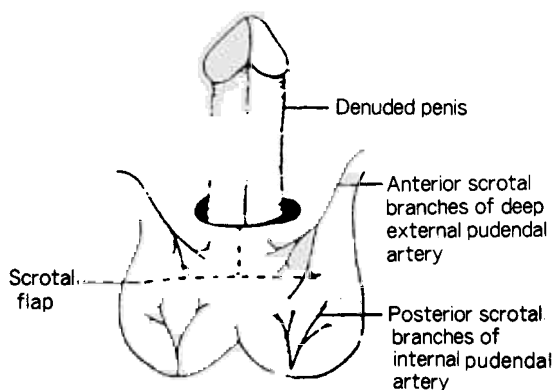
Purposes	Pt No.	Pt No. of satisfaction
to enlarge the size of penis	14	0
to treat erectile dysfunction	7	0
to satisfy sexual partner	5	2

**Table 2. Types and number of operation after total excision of mass**

Type of operation	Pts. No.
primary closure	
scrotal flap penoplasty	
superior branches	
inferior branches	
Cecil's scrotal implantation	
STSG(inner thigh)	



**Fig. 1. Preoperative appearance of penile paraffinoma.**



**Fig. 2. Blood supply of scrotum.**

tients had no specific symptoms except abnormal penile contour with overlying skin discoloration. All injection sites were circumferential distal penile skins. Physical examination revealed hard, indurated, semimobile distal penile mass (Fig. 1).

The involved skin exhibited a diffuse dark yellow color. In 17 of 19 cases skin ulceration and purulent discharge was noted. And it was

common to find multiple minor masses at mid and proximal penis. There was no evidence of distant migration except penis. In all cases the masses did not penetrate the corpus cavernosum and were usually located outside or attached to Buck's fascia.

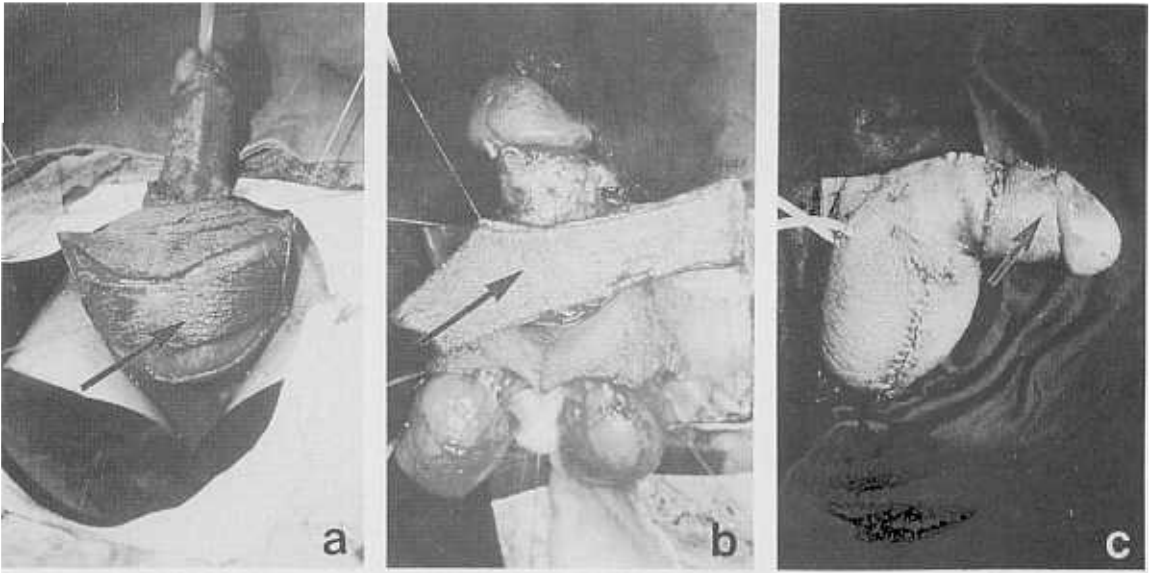
#### The operative methods and outcome

All masses with overlying nonviable skin graft were removed. In some cases whole penile skin had to be removed and staged scrotal inlay operation or scrotal STSG was performed (Table 2).

As a new method, we used scrotal skin flap supplied by posterior branch of internal pudendal artery as flap pedicle due to hairlessness (Fig. 2).

In this article, our case using this new method is presented (Fig. 3).

The overall outcome of penoplasties was successful except in 2 cases.



**Fig. 3.** Penoplasty after resection of paraffinoma, using scrotal skin flap supplied by posterior branch of internal pudendal artery (Arrows).

### Pathologic characteristics

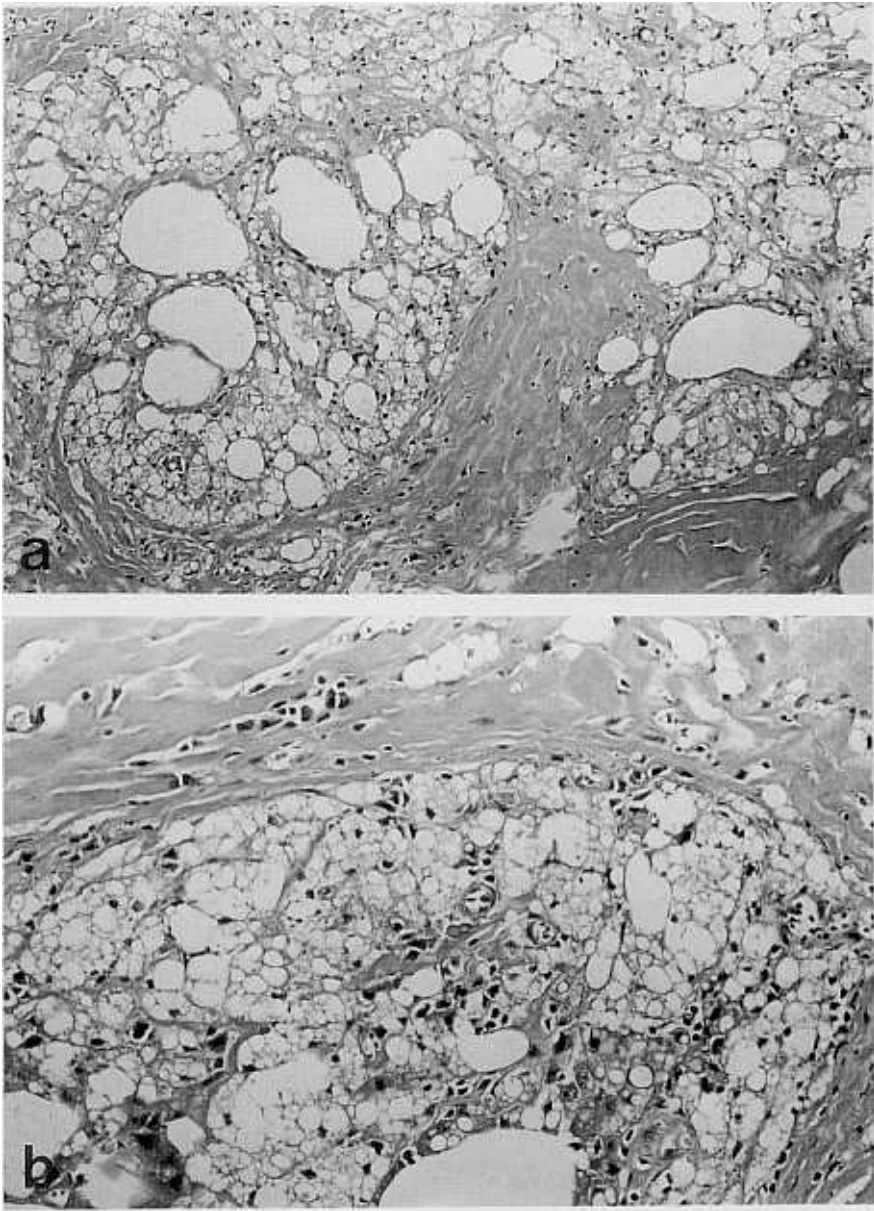
Microscopically the normal structure of the subcutaneous fat layer was completely disrupted. The stromal septa had undergone hyaline necrosis which had permitted fat droplets to coalesce into large globules of various sizes separated by fibrous connective tissue. Many cyst-like spaces lined with endothelium or more frequently by syncytial giant cells of the foreign body type were encountered throughout the involved tissue. Many of these cyst-like spaces were surrounded by dense and deeply eosinophilic collagen tissue, in places distorting the spherical appearance of the globules. Numerous macrophages containing phagocytosed fat and moderately heavy round cell infiltration were seen around the blood vessels (Fig. 4).

### DISCUSSION

Sclerosing lipogranuloma is characterized by

the formation of firm, often flat nodules of indurated fat in various portions of the body. From the early use of paraffin or mineral oil to change body contour at the beginning of the century, there have been many literature about complications (Kayet *et al.* 1983, Klein *et al.* 1985, Urbach *et al.* 1971). Particularly in some literatures about the sclerosing lipogranuloma of penis, most patients denied previous injection (Arduino 1959). In such cases there needs some chemical procedure to prove the causative material (Oertel *et al.* 1977).

In our cases, most patients had knowledge of the injection material, so the extensive chemical analysis to detect the material were not necessary and the pathologic findings were similar to those of others (Marcial *et al.* 1956, Carson *et al.* 1968). All of our patients were trying to facilitate erection or to increase their sexual potency. Unfortunately there was no evidence about their sexual improvement. Although in 7 cases there were no complications, they complained about decreased potency and discomfort. In most cases with mean of 18.5 months later from the injection, we could see disastrous side effects such



*Fig. 4. Microscopic findings of paraffinoma (sclerosing lipogranuloma).*

as infection, ulceration and local migration and cavernosal invasion (Campbell *et al.* 1973, Bradley *et al.* 1951) in our cases.

There are many operative methods in penoplasty, but we made the principle that at first we tried to close primarily if possible, and in other cases, we used the scrotal skin

flap or Cecil's inlay operation or split thickness skin graft (Moon *et al.* 1986). In scrotal skin flap, there are methods using two pedicles selected, either anterior branches of external pudendal artery or posterior branches of internal pudendal artery. In our experience, the operation using latter pedicle has psycho-

logical advantages due to hairlessness (Fig. 2). Two-staged Cecil's operation is that the denuded penis is buried in scrotum and penoplasty is carried out two to three months later, which has psychological and economic disadvantages because it takes long time (Moon *et al.* 1986, Kim *et al.* 1992).

At present it is not wise to inject paraffin or other mineral oil into body to change body contour, especially into penis. In more than 40 % of our cases, the injection was done by the non-medical person. We believe that this self-defeating method is related with personal medico-social-economic status of patients and the public must be informed of detrimental effects of such injections and educated to cease these behaviors.

## REFERENCES

- Arduino LJ: Sclerosing lipogranuloma of male genitalia. *J Urol* 82: 155-161, 1959
- Best EW, Mason HL, DeWeerd JW, Dahlin DC: Sclerosing lipogranuloma of the male genitalia produced by mineral oil. *Proc Staff Meet Mayo Clin* 28: 623-631, 1953
- Bradley RH, Ehrgott WA: Paraffinoma of the penis: case report. *J Urol* 65: 453-459, 1951
- Carson HE: Sclerosing granuloma of the penis and scrotum. *J Urol* 100: 656-658, 1968
- Campbell JC, Henderson IWD: Effects of instillation of paraffin in the tissue. *Lancet* I: 775-776, 1973
- Frederick U, Stanley SW, Waine CJ, Ronald ED: Generalized paraffinoma. *Arch Derm* 103: 277-285, 1971
- KAY SPJ, Saad MN: Paraffinoma of male breast: a case report. *Brit J Plast Surg* 36:522-523, 1983
- Kim DS, Choi HY: Penile paraffinoma: 39 cases. *Korean J Urol* 33:551-556, 1992
- Klein JA, Cole G, Barr RJ, Bartlow G, Fulwider C: Paraffinoma of the scalp. *Arch Dermatol* 121: 382-385, 1985
- Marcial RA, Colon JE, Figueroa JJ: Sclerosing lipogranuloma of the male genitalia: Report of one case and review of the literature. *J Urol* 75: 334-338, 1956
- Moon WC, Oh CH, Moon YT, Kim SC: Penile paraffinoma. *Korean J Urol* 27: 171-180, 1986
- Oertel YC, Johnson FB: Sclerosing lipogranuloma of male genitalia. *Arch Pathol Lab Med* 101: 321-326, 1977
- Urbach F, Wine S, Johnson WC: generalized paraffinoma. *Arch Dermatol* 103: 277-285, 1971