

# Sclectrosing lipogranuloma of penis: Case Report

Stefan B. Ivić<sup>1</sup>, Milena Z. Vasić Milanović<sup>2</sup>, Svjetlana D. Kulić<sup>3</sup>,  
Dragomir R. Ćuk<sup>1</sup>, Milica R. Trkulja<sup>4</sup>, Jelena R. Ilić Sabo<sup>1,5</sup>

<sup>1</sup> Center of pathology and histology, University Clinical Center of Vojvodina, Novi Sad, Serbia

<sup>2</sup> Department for Pathology, General Hospital Zvornik, Zvornik, Bosnia and Herzegovina

<sup>3</sup> Faculty of Medicine Foča, University of East Sarajevo, Foča, Bosnia and Herzegovina

<sup>4</sup> Emergency department, Covid Hospital, University Clinical Center of Vojvodina, Novi Sad, Serbia

<sup>5</sup> Department of Histology and Embryology, Faculty of Medicine, University of Novi Sad, Novi Sad, Serbia

## SUMMARY

**Introduction:** Increasing the volume of penis by injecting various substances (paraffin, silicone, mineral oils) remains a highly controversial procedure. This procedure is usually performed by patients themselves or by persons without a licensed medical education. Injecting these substances causes a local inflammatory reaction with redness, pain, swelling, thickening of penile skin, with the subsequent formation of sclerosing lipogranuloma, in more serious cases ulceration, necrosis, embolism and even death may occur. Impotence, painful erections and dysuria are the most common symptoms. The treatment is excision with subsequent reconstruction, while the conservative approach using antibiotics has a limited effect.

**Case report:** A 45-year-old patient presents to Emergency Department due to lesions on penis. Inspection showed scarring with ulcers and signs of inflammation on ventral side of penis, and patient was referred to urologist. Part of the scar tissue with inflammation was excised, biopsy was taken, and reconstruction was made. Pathohistological analysis revealed fragments of skin and subcutaneous connective tissue. Ulcerations with inflammatory infiltrate, hyperkeratosis and parakeratosis were present on parts of epidermis. Inflammatory infiltrate rich in epithelioid histiocytes with lipid vacuoles was present in subcutaneous connective tissue, and smaller foci of necrosis and cystic changes in the form of „Swiss cheese” were observed. Based on pathohistological findings and clinical data, he was diagnosed with sclerosing lipogranuloma.

**Conclusion:** Increasing the volume of penis by injecting substances is very dangerous. In extreme cases this procedure can even result in death, and will never provide the expected, satisfying results to the patients.

**Keywords:** Sclerosing Lipogranuloma, Penis, Paraffinoma, Siliconoma

Corresponding author:

Assistant Professor Jelena R. Ilić Sabo, MD, PhD

Specialist in Pathology, Subspecialist in Hematopathology

Department of Histology and Embryology, Faculty of Medicine, University of Novi Sad, Hajduk Veljkova 3, 21000 Novi Sad, Serbia

E-mail: jelena.ilic-sabo@mf.uns.ac.rs

## INTRODUCTION

In the time of the ever increasing expansion of cosmetic procedures, increasing the volume of the penis by injecting various substances (paraffin, silicone, vaseline, mineral oils) remains a highly controversial procedure with a history that spans for over a hundred years. Although this procedure has been abandoned in most of the developed countries, there are still cases being reported in Asia, especially in the Middle East, Southeast Asia, Korea, as well as in some Eastern European countries [1].

These substances are injected subcutaneously in the hope that they will increase the volume of the penis. The procedure is most often performed by patients themselves or by another person without adequate medical education. Due to the inability of tissue lipases to hydrolyze the injected substances, they persist in the penile tissue and subsequently cause a local inflammatory reaction [2].

Injecting these substances will, in most cases, cause an immediate reaction. Most commonly, a local inflammatory reaction with redness, swelling, thickening of the penile skin (these symptoms can create the illusion that the procedure was successful), while focal ulceration and necrosis may occur in more serious cases. Depending on the sensitivity of the patient's tissue and the purity of the injected material, sclerosing lipogranuloma may form. If injected into blood vessels, these substances can result in embolism with a potentially fatal outcome [3].

Usually, a painless mass is formed after the injection of these substances. This mass can persist unchanged for many years. Massaging the area in which substances are injected may lead to spreading these substances into the surrounding tissue of the penis, scrotum, and even local lymph nodes (penile cancer must be ruled out). After a certain period, in some patients, the painless mass will become firm, painful, hyperpigmented, with possible ulceration and necrosis [1].

Symptoms most often include impotence, painful erections and sexual intercourse, acquired phimosis and dysuria [4,5].

Diagnosis is made by a pathohistological analysis of the material obtained by a biopsy. Ultrasound or magnetic resonance imaging can be used to assess the extent of the changes [6].

Treatment includes surgical resection

of the change with subsequent reconstruction. The main goal is to enable normal sexual function with the best possible cosmetic results [7,8].

## CASE REPORT

A 45-year-old patient initially came for an examination in August 2020 due to changes on his penis. He stated that about 8 months ago, after a sexual intercourse, he felt an itching sensation on his penis. He was prescribed a local antibiotic therapy by his general practitioner, but the symptoms did not decrease and further changes appeared on his penis in the form of swelling, redness and small ulcers with purulent content.

Three months later, the patient reappears for an examination, and this time he states that he had injected various substances (including Vaseline and others that he hadn't specified) into the penile tissue.

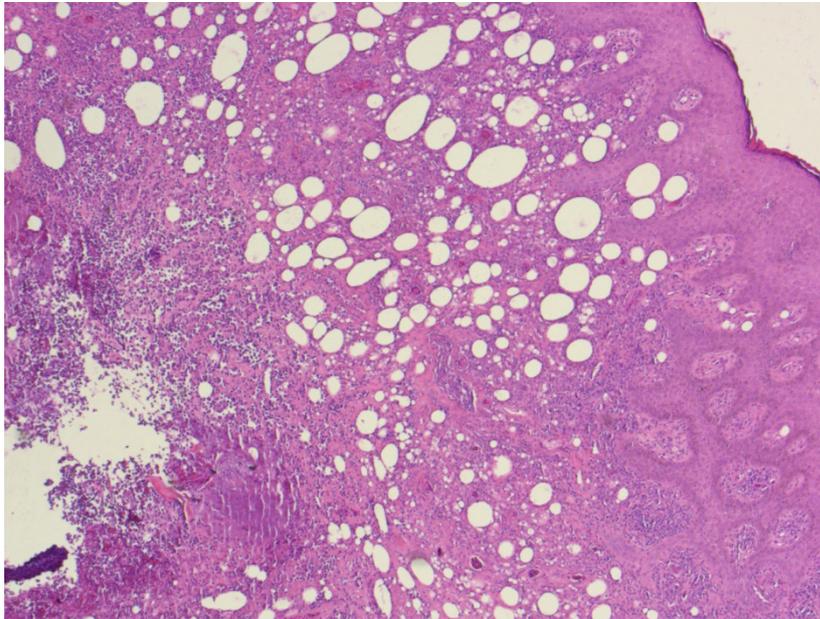
During the inspection, scarring with ulcers and initial signs of inflammation were noticed on the ventral side of the penis. After the examination, the patient was referred to a urologist. A part of the scar lesion with signs of inflammation was excised, a biopsy was taken, and then a reconstruction was made as the final therapy.

Pathohistological analysis of biopsy material revealed fragments of skin and subcutaneous connective tissue. Ulcerations with inflammatory infiltrate, areas of hyperkeratosis and parakeratosis were present on parts of the epidermis. Inflammatory infiltrate rich in epithelioid histiocytes filled with lipid vacuoles was present in the subcutaneous connective tissue, and in addition, smaller focal necrosis and cystic changes in the form of „Swiss cheese“ were also observed (Figure 1). Based on pathohistological findings and clinical data, he was diagnosed with sclerosing lipogranuloma.

Following the surgical treatment, the patient hadn't experienced any further symptoms and no relapse of the sclerosing lipogranuloma has occurred to this date.

## DISCUSSION

Penis size has been a source of concern for men ever since the earliest history, and attempts of



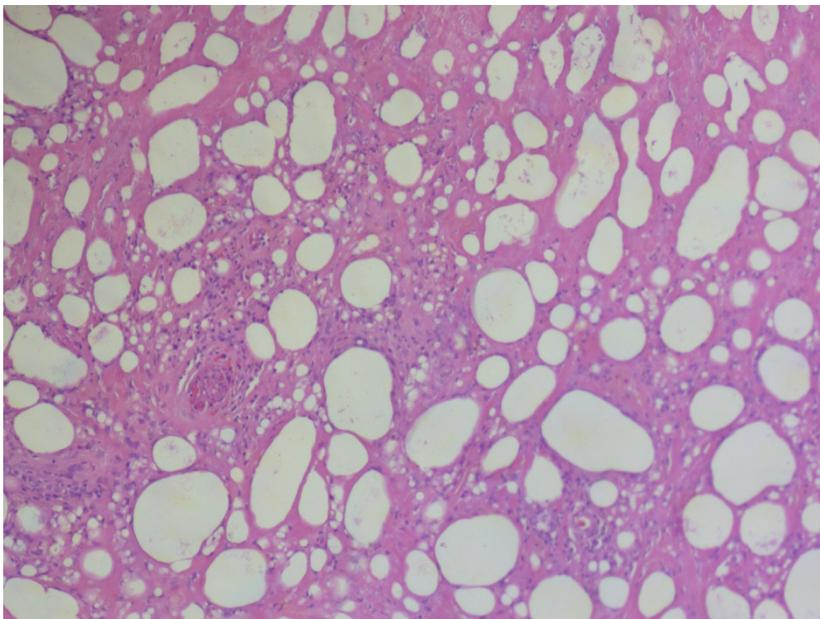
**Figure 1.** Sclerosing lipogranuloma of the penis, HEx50, Epidermis on the right, seemingly empty vacuolar spaces („Swiss cheese” cystic changes) in the middle with foci of necrosis in the bottom right corner

penile augmentation can be found throughout the history in many tribes around the world. Some of these attempts would involve deliberately exposing the penis to the bites of venomous snakes, making holes in the glans of the penis into which various objects would then be placed, as well as many similar attempts [9]. In modern times, the first use of mineral oils to fill tissue defects was performed in 1899 by a surgeon Robert Gersuny, who injected Vaseline into the scrotal sac of a boy after a bilateral orchietomy with good results [10]. The success of this procedure has led to the use of Vaseline, and after that paraffin, silicone and other mineral oils to fill various soft tissue de-

fects on different parts of the body - breasts, eyelids, cheeks, muscles and various other body parts [10,11].

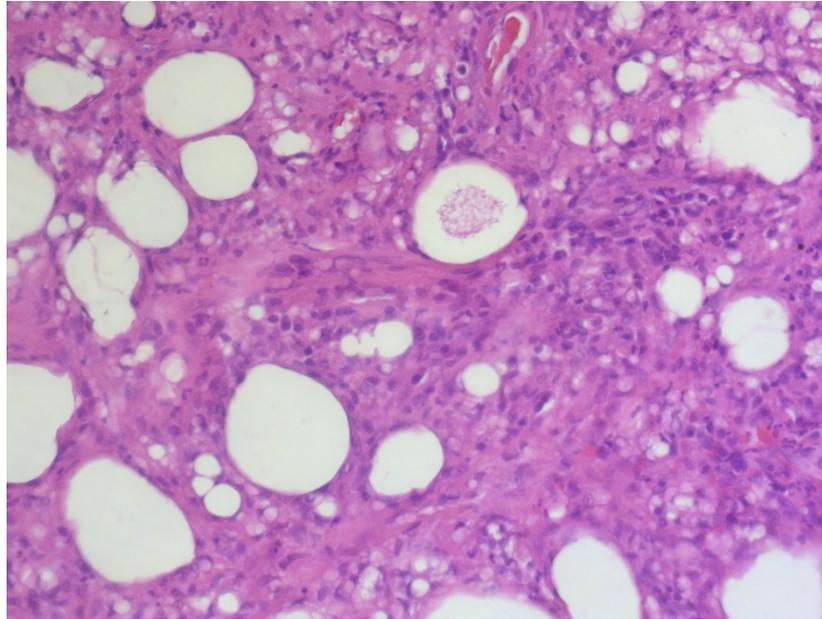
The first complications of these procedures were described as early as 1906, which led to the abandonment of these procedures in most countries [12].

Barnhard and Smetana were the first ones to use the name sclerosing lipogranuloma in 1948 for a granulomatous adipose tissue reaction resulting from an injury. Barnhard and Smetana also concluded that the same reaction occurs when the foreign substances such as paraffin, silicone and other mineral oils are injected into the human tissue [13].



**Figure 2.** Sclerosing lipogranuloma of penis, HEx100, „Swiss cheese” cystic formations characteristic for Sclerosing lipogranuloma with surrounding inflammatory infiltrate

**Figure 3.** Sclerosing lipogranuloma of penis, HEx200, Seemingly empty vacuolar spaces „Swiss cheese” cystic formations at higher magnification with inflammatory infiltrate rich in lymphocytes, plasma cells, epithelioid cells, neutrophils and macrophages.



Regardless of the identified risks, the practice of injecting these substances into the penile tissue with the goal of increasing penile girth has continued sporadically in non-medical circles, with a particularly high frequency in Asia and Eastern Europe [14]. Most often, these substances are injected by patients themselves [14], or by so-called traditional medicine practitioners in some Asian countries [1]. By reviewing different case reports, we can conclude that men of different ages appear with sclerosing lipogranulomas [14,15].

The diagnosis of sclerosing lipogranuloma is usually made by anamnesis, detailed examination and pathohistological examination of the material obtained by a resection or biopsies. It would be ideal to find out from the patient when and which substances he had injected into the penile tissue. Due to the sensitivity of the topic, most patients will not admit that they had injected substances into the penile tissue.

Examination may reveal redness, swelling, deformities of the penile skin, palpable or non-palpable mass, mobile or fixed for deeper structures, softer or firmer in consistency and sometimes with superficial changes in the form of ulceration or necrosis. In rare cases, a puncture site may be seen [14]. Recently, the importance of MRI and ultrasound examinations to assess the involvement of deeper structures has been emphasized [6].

The final diagnosis of sclerosing lipogranuloma (also known as paraffinoma, siliconoma, depending on the type of injected

substance) is made by a pathohistological examination of the material obtained by a biopsy or a resection. First of all, it is necessary to exclude the existence of penile cancer.

The pathohistological presentation of sclerosing lipogranuloma depends on the time that has elapsed since the injection of the substance. However, it usually presents itself as an ulceration of the epidermis, possibly with surrounding hyperkeratosis and parakeratosis. Characteristic cystic changes in the form of „Swiss cheese” can be observed in the subcutaneous connective tissue, which are seen as seemingly empty vacuolar spaces surrounded by connective tissue (Figure 2). Encapsulated mineral oils can be observed in these areas by special methods of staining (Oil Red O). There is also an inflammatory infiltrate rich in epithelioid cells, macrophages, neutrophils and lymphocytes, as well as more or less present foci of necrosis (Figure 3) [1,14,15].

The method of choice for treatment is resection of the lesion with subsequent reconstruction. Several different procedures have been described, all with similar success rates [16]. Very rarely, postoperatively, relapse of the lesion may occur [2].

## CONCLUSION

Enlarging the penis by injecting various substances is a dangerous and controversial procedure, abandoned in medical circles, and is usually performed by patients themselves or

by persons without medical education. This procedure can be fatal in extreme cases, and will never provide the expected results. The method of choice for the treatment of sclerosing lipogranuloma is surgical resection with subsequent reconstruction, while conservative approach using antibiotics has very limited effect.

## CONFLICT OF INTEREST

All authors declare no conflict of interest.

## REFERENCES

1. Soebhali B. Sclerosing lipogranuloma of the penis: a review of management and classification. *Bali Med J* 2020;9(1):55-61.
2. Danowski K, Jordan L, Ghaferi J. Penile Paraffinoma: Dramatic Recurrence After Surgical Resection. *Cutis* 2020;105(5):17-9.
3. Soebhali B, Felicio J, Oliveira P, Martins F. Sclerosing lipogranuloma of the penis: a narrative review of complications and treatment. *Transl Androl Urol* 2021;10(6):2705-14.
4. Downey AP, Osman N, Mangera A, Inman R, Reid S, Chapple C. *Eur Urol Focus* 2019;5(5):894-8.
5. Symeonidis A, Symeonidis E, Toutziaris C, Dimitriadis G. Obstructive lower urinary tract symptoms (LUTS) as the initial presentation of penile paraffinoma: a case report and literature review. *PAMJ* 2021; 38(265).
6. Park JS, Cho JH. Infected Sclerosing Lipogranuloma after Hernioplasty: Ultrasonographic and MRI Findings. *J Korean Soc Radiol* 2020;81(5):1255-9.
7. Salauddin SA, Ghazali H. Surgical techniques for correction of penile paraffinoma. *Malays J Med Sci* 2019;26(6):137-42.
8. Dunev V, Genov P, Stoykov B, Kolev N. Unmeshed split-thickness SKIN grafts for penile plastic in patients with paraffinoma. *Urol Case Rep* 2020;32:101249.
9. Wylie KR, Eardley I. Penile size and the 'small penis syndrome'. *BJU Int* 2007;99:1449-55.
10. Gersuny R. The classic reprint. Concerning a subcutaneous prosthesis. *Plast Reconstr Surg* 1980;65:525-7.
11. Heo JW, Kim BK. Paraffinoma induced bilateral preauricular cheek skin defects. *Arch Craniofac Surg* 2018;19(3):227-30.
12. Bayraktar N, Başar İ. Penile paraffinoma. *Case Rep Urol* 2012;2012:202840.
13. Smetana HF, Barnhard WG. Sclerosing lipogranuloma. *Am J Pathol* 1948;24:675-7.
14. Ahmed U, Freeman A, Kirkham A, Ralph DJ, Minhas S, Muneer A. Self injection of foreign materials into the penis. *Ann R Coll Surg Engl* 2017;99:78-82.
15. Sahin A, Tekgül S, Ergen A, Basar I, Ruacan S. Sclerosing Lipogranuloma of the Penis A Case Report. *Int Urol Nephrol* 1991;23(6):595-8.
16. Azizul H, Umbaran G. Penile paraffinoma: Surgical Management is still the best option. *IJPHCS* 2020;7(2):125-30.

## Sklerozirajući lipogranulom penisa: prikaz slučaja

Stefan B. Ivić<sup>1</sup>, Milena Z. Vasić Milanović<sup>2</sup>, Svjetlana D. Kulić<sup>3</sup>, Dragomir R. Ćuk<sup>1</sup>,  
Milica R. Trkulja<sup>4</sup>, Jelena R. Ilić Sabo<sup>1,5</sup>

<sup>1</sup> Centar za patologiju i histologiju, Univerzitetski Klinički Centar Vojvodine, Novi Sad, Srbija

<sup>2</sup> Služba patologije, Opšta bolnica Zvornik, Zvornik, Bosna i Hercegovina

<sup>3</sup> Medicinski fakultet Foča, Univerzitet u Istočnom Sarajevu, Foča, Bosna i Hercegovina

<sup>4</sup> Urgentni centar, Covid bolnica, Univerzitetski Klinički Centar Vojvodine, Novi Sad, Srbija

<sup>5</sup> Katedra za histologiju i embriologiju, Medicinski fakultet, Univerzitet u Novom Sadu, Novi Sad, Srbija

### KRATAK SADRŽAJ

**Uvod:** Uvećanje obima penisa ubrizgavanjem različitih supstanci (parafin, silikon, mineralna ulja) ostaje kontroverzna procedura sa dugom istorijom. Ovu proceduru često izvode sami pacijenti ili druga lica bez licenciranog medicinskog obrazovanja. Ubrizgavanjem ovih supstanci nastaje lokalna zapaljenska reakcija praćena crvenilom, bolom, otokom, zadebljanjem kože penisa, sa posledičnim stvaranjem sklerozirajućeg lipogranuloma, a u ozbiljnijim slučajevima i ulceracijom, nekrozom i embolijom. Mogu nastati impotencija, bolna erekcija i dizurija. Metoda lečenja je ekscizija promene sa naknadnom rekonstrukcijom. Konzervativna terapija koja uključuje upotrebu antibiotika ima ograničen efekat.

**Prikaz slučaja:** Pacijent starosti 45 godina javlja se na pregled zbog promena na penisu. Inspekcijom, na ventralnoj strani penisa uočene su ožiljne promene sa ulkusima i početnim znacima inflamacije, te je pacijent upućen urologu. Ekscidiran je deo ožiljne promene sa znacima inflamacije, uzeta je biopsija, a zatim je načinjena rekonstrukcija. Patohistološkom analizom materijala dobijenog biopsijom uočeni su fragmenti kože i supkutanog vezivnog tkiva. Na delovima epidermisa prisutne su ulceracije sa prisutnim zapaljenskim infiltratom, područjima hiperkeratoze i parakeratoze. Inflamatorni infiltrat bogat epitelioidnim histiocitima ispunjenim lipidnim vakuolama prisutan je u supkutanom vezivnom tkivu, a pored se uočavaju manji fokusi nekroze i cistične promene u vidu „švajcarskog sira”. Na osnovu patohistološkog nalaza i kliničkih podataka dijagnostikovao je sklerozirajući lipogranulom.

**Zaključak:** Uvećanje obima penisa ubrizgavanjem različitih supstanci je opasna procedura koja u ekstremnim slučajevima može rezultovati smrtnim ishodom, a nikada neće pružiti rezultate koje pacijenti očekuju.

**Ključne reči:** sklerozirajući lipogranulom, penis, parafinom, silikonom

Received: October 20, 2022  
Accepted: December 04, 2022