

An unusual course after injection of industrial silicone for penile augmentation

Yu Seob Shin, MD;* Jae Hyung You, MD;* Hwang Choi, MD;† Li Tao Zhang, MD;* Chen Zhao, MD;‡
In Sung Choi, MD;* Jong Kwan Park, MD*

*Department of Urology, Chonbuk National University Medical School, and Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute and Clinical Trial Center of Medical Device of Chonbuk National University Hospital, Jeonju, South Korea; †Department of Urology, Armed Forces Capital Hospital, Seongnam, Korea; ‡Department of Urology, Renji Hospital, Shanghai Jiao Tong University School of Medicine, and Shanghai Institute of Andrology, Shanghai, China

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Abstract

A 48-year-old male patient had an injection of industrial silicone under the penile skin for augmentation by non-medical practitioners a week before. There was complete necrosis of the dorsal part of the penile skin and soft tissue. In a penile magnetic resonance image, big masses of silicone under the penile skin were found and a part of the silicone was partially exposed. Debridement of the necrotic tissue was done. As the right side of the tunica albuginea was thin-walled, a silicone-induced infection developed. Because of this, the wet dressing was done daily without closing the wound for the next 23 days. Finally, both scrotal skins were drawn and sutured to the dorsal glandular skin after the total penile skin was completely removed and sutured with T-style anastomosis. The ventral flap was anastomosed to the ventral glandular skin with the end-to-end technique with inverted V incision at 1 cm proximal from the sutured margin. Flaps survived completely without skin necrosis or dehiscence.

Introduction

Foreign materials, such as paraffin oil, paraffin balm, mineral oils, and silicone, have been used to improve penile shaft contour and dimensions.¹ Granulomatous skin reaction to paraffin oil, paraffin balm, mineral oils, and silicone tend to occur 1 to 2 years after injection.² In our case, acute reaction occurred after injection of industrial silicone for penile augmentation. We report the unusual course and successful treatment of our patient with the scrotal flap. To the best of our knowledge, the present case is the first one in which acute necrosis occurred after injection of industrial silicone for penile augmentation.

Case report

A 48-year-old male presented to our clinic with pain and necrosis in his penis. To augment his penis the patient had an injection of industrial silicone done under penis skin a week before by a non-medical practitioner. The silicone paste was injected through the blunt tip (Fig. 1, part A); it was about 50 cc (Fig. 1, part B). The patient had a history of diabetes mellitus and insulin treatment for the past 15 years. On physical examination, complete necrosis of the dorsal part of penile skin and soft tissue was found, as well as purulent discharge of pus (Fig. 1, part A). While the scrotum was normal, he did not have voiding difficulty or erectile dysfunction. Magnetic resonance imaging demonstrated an 8-cm abscess with foreign bodies in both of the corpora cavernosa and tunica albuginea invaded by suggesting inflammation (Fig. 1, parts C, D). The urethra was intact. Because the patient presented with site-specific pain, an elevated white blood count, surgery was the best management option at that point to reduce the risk of infection. Full-skin excision was required because the necrosis was extensive and involved subcutaneous tissue of the penile shaft with extension into the overlying penile skin. The necrotic skin and subcutaneous tissue were circumferentially excised from the corona distally to the base proximally down to the level of Buck's fascia. In the operation for removal, infection on the right side of the fragile tunica albuginea was found (Fig. 1, parts D, E). The industrial silicone was removed (Fig. 1, part B). We decided to dress the open wound daily without closing. After 23 days of dressing the wound with antibiotics, the infection resolved (Fig. 2, part A). An end-to-end anastomosis between the ventral coronal skin and scrotal flap was performed (Fig. 2, part B).³ After complete anastomosis between the coronal penile skin and the ventral scrotal flap, an additional inverted V-design was made 1 cm below the midline-ventral portion of the anastomosed coronal skin-scrotal flap to prepare the scrotal flap to cover the ventral penis after measurement of the penile

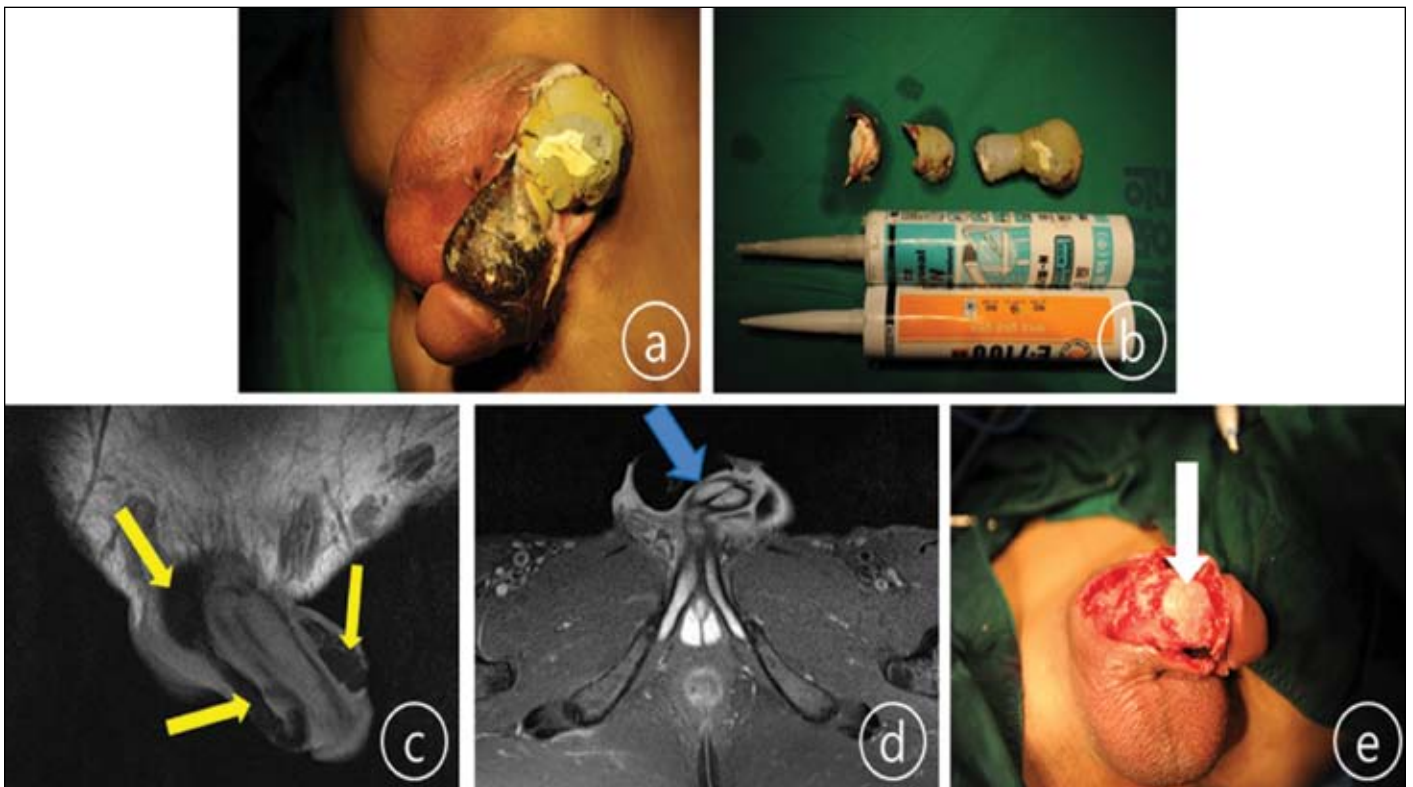


Fig. 1. Perioperative findings, silicone, and magnetic resonance image (MRI). A: Necrosis of penile skin and exposed silicone. B: Removed silicone masses and industrial silicones. C: MRI of multiple silicone masses (yellow solid arrows). D: Right tunica albuginea invaded by silicone and inflammation (blue solid arrow). E: Fragile tunica albuginea by inflammation (white solid arrow).

circumference. The bilateral scrotal flaps by inverted V incision were anastomosed end-to-end with interrupted sutures from the beginning portion of the inverted V design to the lowest portion of the scrotal flap. The remaining basal scrotal skin was drawn to cover the testes, and bilateral scrotal flaps were sutured layer by layer, after Hemovac drain had been placed in the dependent portion (Fig. 2, part B). Flaps survived completely without necrosis or dehiscence, especially at the ventral site. The patient now voids well with normal erectile function (Fig. 2, part C).

Discussion

Silicone is the chemical and commercial name for polydimethylsiloxane, an organic compound comprising a chain of alternating silicon and oxygen atoms bonded to other organic groups. The state of the gel, liquid, or solid is determined by the number of cross links in the molecule. It has been long considered an inert compound with good thermal stability, favouring its use in various implantable devices. In its pure form, silicone has been used in cosmetic and esthetic procedures for the past 5 decades, and it is known to produce minimal tissue reactions and no significant immune response, although, in many countries, it is approved only for use in breast augmentation devices and is prohibited as an injectable liquid.⁴

Medical injectable silicone is a unique soft tissue filler that may be used for cutaneous and subcutaneous atrophies in plastic and dermatology indications. Injectable silicone was used for correction of scars, skin depressions, and lip and facial contour augmentation.⁵ It is also used for penile augmentation. Yacov and colleagues described their experience with penile girth augmentation using liquid medical injectable silicone in 324 men.⁶ They reported very satisfactory short-term results with no immediate or short-term complications. However, the injection of industrial silicone for medical purposes can provoke subcutaneous infection and necrosis that is related to impurities or adulteration of industrial silicone. Injection of industrial silicone in the penis is very rare. Penile injection with industrial silicone was first and only reported by Shamsodini and colleagues.⁷ In their report, patients with industrial silicone rings presented with multiple sinuses of penile skin and abscess and pus discharge from the site of implanted ring. Reactions to silicone occurred 1 to 2 years after injection. Unlike their reports, in our patient, complete necrosis of the dorsal part of penile shaft was occurred in very short time. In our opinion, diabetes mellitus was the main cause of severe inflammation, which was induced by silicone injection.

Penile necrosis and lipogranuloma is best treated surgically. Granulomatous skin needs to be completely excised. Primary closure offers the best cosmetic and functional out-

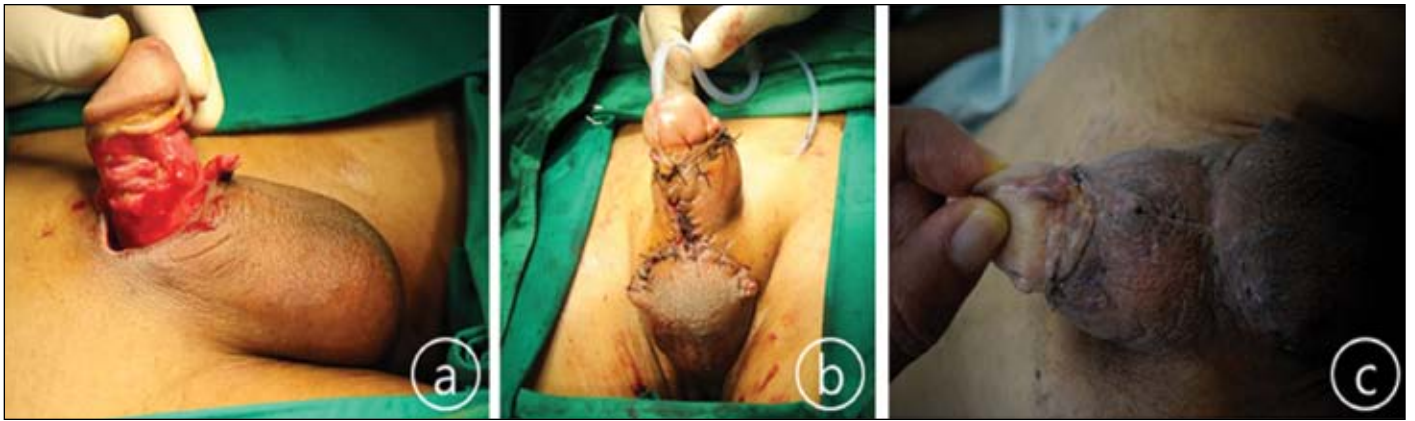


Fig. 2. Operative and postoperative findings. A: Clean wound after dressing. B: Ventral view of end-to-end anastomosis between glandular penile skin and scrotal flap using inverted V incision. C: Ventral view postoperatively 14 days without ventral necrosis.

come. However, due to the infected penile necrosis and lipogranuloma in our case, a two-stage operation after complete resolution of the inflammation is better than a one-staged emergent penoplasty. In the present case, wound care through local cleansing and frequent dressing was continued for 23 days. The wound was then closed after clearance of infection. Also, we used our new technique for penile resurfacing without the T-style anastomosis at the ventral skin of the penis with bilateral scrotal flaps.³ It is an effective and reliable method, especially for saving the midline skin of the ventral anastomosed portion of the penis. As a result, flaps survived completely without necrosis or dehiscence. He now voids well and has normal erectile function.

Conclusion

Penile size has been a source of anxiety for men through history, and even today, men often feel a need to enlarge their penises to improve their self-esteem or to satisfy their partner. Penile augmentation by a medical doctor is cost-prohibitive for some, so they go to non-medical people for cheaper foreign body injections. We should increase public awareness on the detrimental effects of such injections. The injection of industrial silicone to the penis can be very detrimental to the patient's health.

Competing interests: Authors declare no competing financial or personal interests.

This paper has been peer-reviewed.

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Correspondence: Dr. Jong Kwan Park, Department of Urology, Chonbuk National University Medical School, and Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute and Clinical Trial Center of Medical Device of Chonbuk National University Hospital, Jeonju, South Korea; rain@chonbuk.ac.kr