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### Authors

Tausend, William E  
Stewart, Larissa R  
Rapini, Ronald P

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**Case presentation**

**Morphea-like complications to illicit gluteal silicone injections**

**William E. Tausend MD<sup>1</sup>, Larissa R. Stewart MD<sup>2</sup>, Ronald P. Rapini MD<sup>2</sup>**

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<sup>1</sup>**University of Texas Medical Branch Department of Dermatology**

<sup>2</sup>**University of Texas Health Science Center-Houston Department of Dermatology**

**Correspondence:**

William E. Tausend, MD  
1122 Postoffice St.  
Galveston, Texas 77550  
Phone-832-816-5524  
E-mail-wetausen@utmb.edu

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**Abstract**

We present a case of a 39-year-old Hispanic woman who was referred to our clinic for treatment of several indurated plaques on her buttocks that developed one year prior to presentation, after she received injections of an unknown substance for augmentation. Biopsy of one nodule revealed silicone in the dermis.

**Keywords: Silicone injection, Procedural complications**

**Introduction**

Illicit injections of silicone are an increasing and worrisome trend in the United States, especially in the Hispanic and transgender communities [1]. These procedures are often performed by unlicensed individuals who inject large quantities of unknown substances into patients [2,3]. The reasons for this increasing trend are thought to relate to the reduced cost of the procedures [4,5]. These savings do not come without risk because numerous reports have shown illicit silicone injections can result in various complications including death [6-14]. Herein, we report a patient who developed morphea-like plaques occurring at the site of illicit silicone injections.

**Case synopsis**

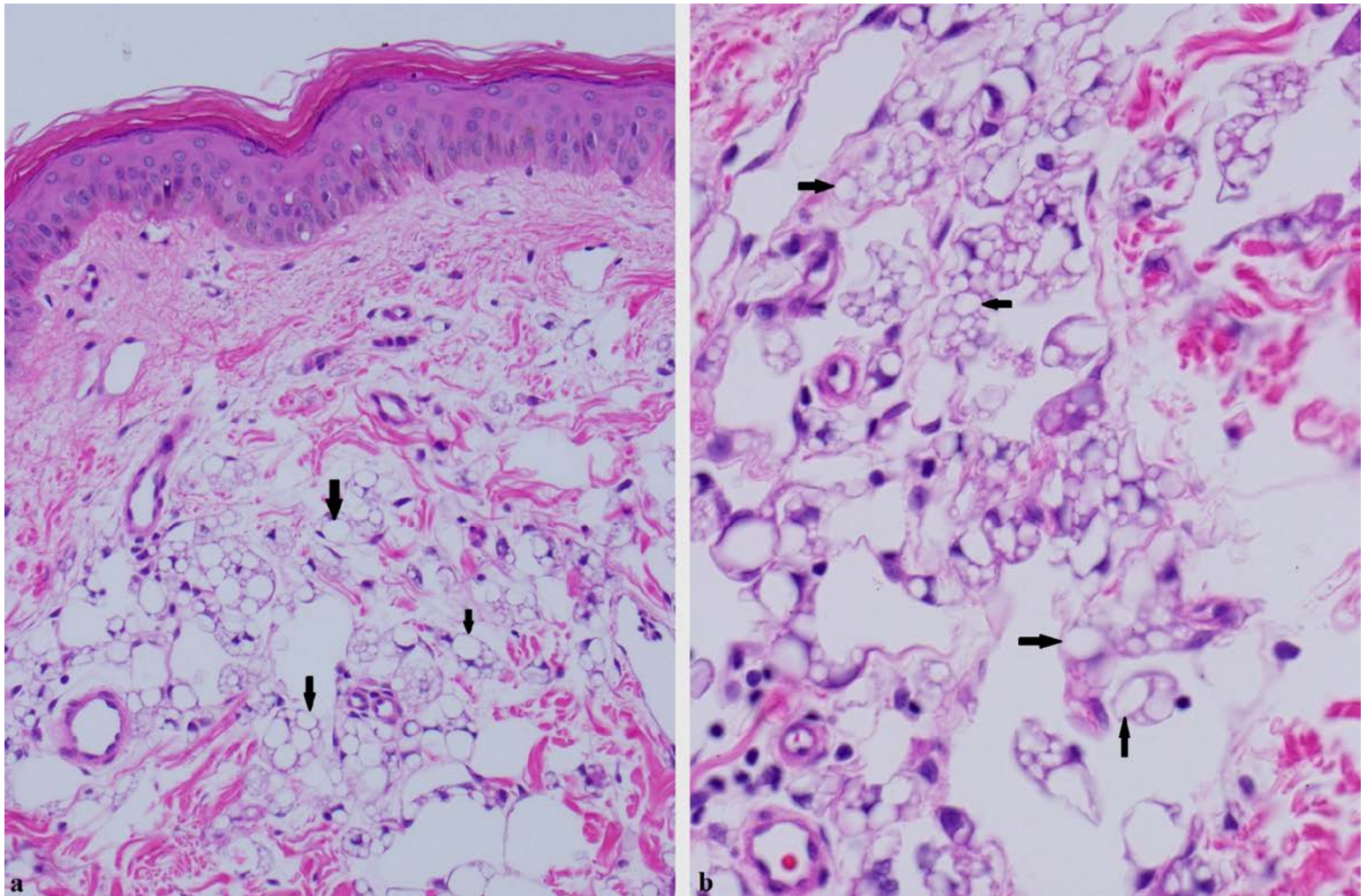
A 39-year-old Hispanic woman with no prior medical history was referred to our dermatology clinic for evaluation of hard lesions that appeared on her buttock and thighs shortly after receiving injections of an unknown substance by a non-licensed professional. The patient was told that the injections were a polyacrylamide-based filler. After receiving the injections, the areas became red and firm within a few months and the patient returned to the facility where she had received the injections to be treated for the complication. She was told she had developed an infection and was given IM penicillin for treatment.

The areas on her buttocks and thighs remained firm and non-painful for over a year and she then decided to seek treatment to improve the areas' appearance. On examination, several erythematous, indurated plaques were noted on her buttocks and thighs bilaterally (Figure 1a and 1b). A punch biopsy of one of the lesions on her buttocks was performed. Histology revealed vacuolated

foreign material in the dermis with no inflammatory reaction. The material had characteristics consistent with silicone (Figure 2a and 2b).



**Figure 1.** a-Diffuse morphea-like plaques at sites of silicone injections on the buttocks. b-Close-up view showing inflammatory reaction to the foreign material.



**Figure 2.** a-Low-power examination shows foreign material (arrows) with minimal inflammation. b-A vacuolated material consistent with silicone (arrows) is seen throughout the dermis on high-power examination

## Discussion

From 2011 to 2012, there was a 25-35% decrease in the number of buttock enhancement procedures performed by plastic surgeons in the United States (U.S.) [1]. One hypothesis to explain this decline is that there has been a dramatic increase in soft tissue injections of liquid silicone performed illegally by individuals owing to their less expensive cost [1]. For instance, the average physician fee for buttock implantation is \$4,670 compared to \$500-\$1600 for injections of liquid silicone performed illicitly by individuals [4,5]. Liquid silicone (dimethylpolysiloxane) is a non-carcinogenic substance, which is thermally and chemically stable. It is an inexpensive material that has been used for aesthetic purposes for many years. It has never been approved by the U.S. Food and Drug Administration (FDA) for soft tissue augmentation [6-8]. Numerous reports from across the U.S. have described complications ranging from minor irritation to death [6-14]. Adverse reactions are compounded by the fact that non-medical grade silicone is sometimes mixed with other materials and injected surreptitiously by unlicensed individuals in varying quantities [1]. Cases in the media have reported patients receiving up to 8 liters of silicone in a single session and being injected with a mixture of cement, glue, mineral oil, and tire sealant [2,3]. Localized morphea-like plaques have been reported following leaking of silicone-gel breast implants and soft tissue liquid silicone injections [5, 15-18].

In addition to silicone, other materials used to augment soft tissue can cause complications. These materials include bovine collagen, human-derived collagen, hyaluronic acid, paraffin, and various polymers. The duration of these complications depends on the injected material's ability to be resorbed by the body. The most definitive way to determine the injected material's identity is by histological examination because each material has a unique appearance. For instance, liquid silicone appears as groups of round vacuoles intercalated between collagen bundles or inside of macrophages. When viewed under polarized light, silicone particles will be non-birefringent [19].

Several medications have been reported in the literature as being efficacious in treating the complications of silicone injections [20-25]. Intralesional and systemic corticosteroids are the first-line treatment [20]. Topical therapies used include imiquimod and calcineurin inhibitors [21]. Oral retinoids, biologic agents, and COX-2 selective inhibitors have all been used in combination with tetracycline antibiotics [22,23]. Laser treatments have been used successfully in limited cases for treatment of small areas of involvement [24]. Surgical excision should be considered when all other therapies have failed [25]. Despite use of several treatment modalities, lesions will often persist.

## Conclusion

Illicit injections of liquid silicone by non-medical practitioners are a growing problem in the U.S. Physicians should be aware of this increasing trend and query patients about these procedures if they present with morphea-like plaques of the skin. Further suspicion is warranted if a patient reports a history of frequent cosmetic procedures.

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