

Siliconomas and Sepsis from Illegal Silicone Injections

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Abstract: Illegal silicone injections for body enhancement can lead to serious complications, including the formation of siliconomas – granulomatous reactions caused by silicone leakage and spread through tissues and lymphatic drainage pathways. This paper presents the case of a 31-year-old transgender man who developed widespread silicone-related soft tissue deposits and sepsis following unauthorized silicone injections into the gluteal region. The patient presented with fever, hypotension, tachycardia, and multiple palpable subcutaneous nodules. Imaging studies, including computed tomography, magnetic resonance imaging, and ultrasound, demonstrated extensive silicone deposits and regional lymphadenopathy. Sepsis was diagnosed and managed with intravenous antibiotics and surgical consultation. This case highlights the dangers of unregulated silicone injections and the importance of early imaging to assess the extent of complications.

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Introduction

Silicone injections are sometimes performed outside medical contexts for aesthetic body contouring. These procedures, particularly when carried out illegally, have been associated with significant complications, including granulomatous inflammation (siliconomas), migration of silicone, embolization, and infection (Chasan, 2007; Parikh et al., 2008). Liquid silicone, when injected directly, lacks encapsulation and can migrate through soft tissues and along lymphatic channels, potentially leading to systemic responses. Granulomatous reactions are often the result of the immune system's attempt to isolate and contain foreign material. While most reported cases involve breast or axillary injections, silicone migration and complications have also been observed in gluteal and pelvic regions (Hazani and Engineer, 2008; Bravo et al., 2016).

This paper details the case of a 31-year-old transgender man who developed widespread siliconomas and sepsis after receiving illegal silicone injections into the gluteal region.

Case report

A 31-year-old transgender man presented with fever, hypotension, tachycardia, and severe pain

in the gluteal region. He reported having received silicone injections for cosmetic body enhancement approximately three years prior in Brazil. The procedure had been performed by non-medical personnel. He denied prior complications or infections at the time of injection and had no known systemic diseases.

Clinical examination revealed multiple firm, tender, mobile subcutaneous nodules in the gluteal area. Palpable lymphadenopathy was also noted in the inguinal and pelvic regions. Laboratory findings included leukocytosis and elevated inflammatory markers. Blood cultures were positive for *Staphylococcus aureus*, consistent with bloodstream infection and systemic inflammatory response – compatible with a diagnosis of sepsis (Singer et al., 2016).

Ultrasound of the gluteal area showed multiple hypoechoic regions with a typical “snowstorm” appearance, indicative of free silicone (Cheung et al., 2002; Narins and Beer, 2006). A contrast-enhanced computed tomography (CT) scan of the abdomen and pelvis revealed multiple iso- to hyperdense nodules in the gluteal muscles (Figure 1). Enlarged lymph nodes were observed in the pelvic and inguinal regions, likely reflecting reactive lymphadenopathy (Scaranelo and de Fátima Ribeiro Maia, 2006). Migration of silicone into lymphatic structures could not be directly confirmed on imaging (Schoeller et al., 2000).

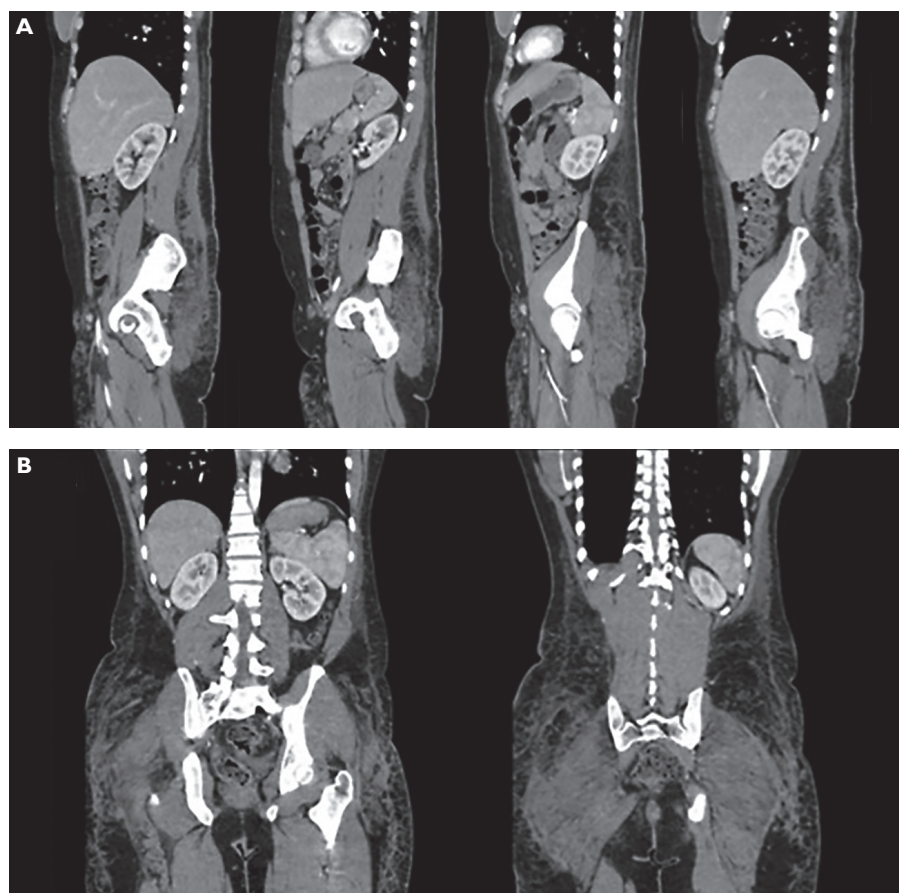


Figure 1: Computed tomography (CT) scan images of the lumbar and gluteal regions showing multiple nodular silicone deposits. A (sagittal section): Well-defined iso- to hyperdense nodules are visible within the subcutaneous tissues of the lower back and gluteal area, consistent with the patient's history of silicone injection. Mild surrounding soft tissue inflammation is present, without signs of acute complications. B (coronal section): Confirms the presence of multiple nodular deposits along the lumbar and gluteal regions. CT imaging does not definitively allow characterization of granulomas or confirmation of silicone migration to lymph nodes.

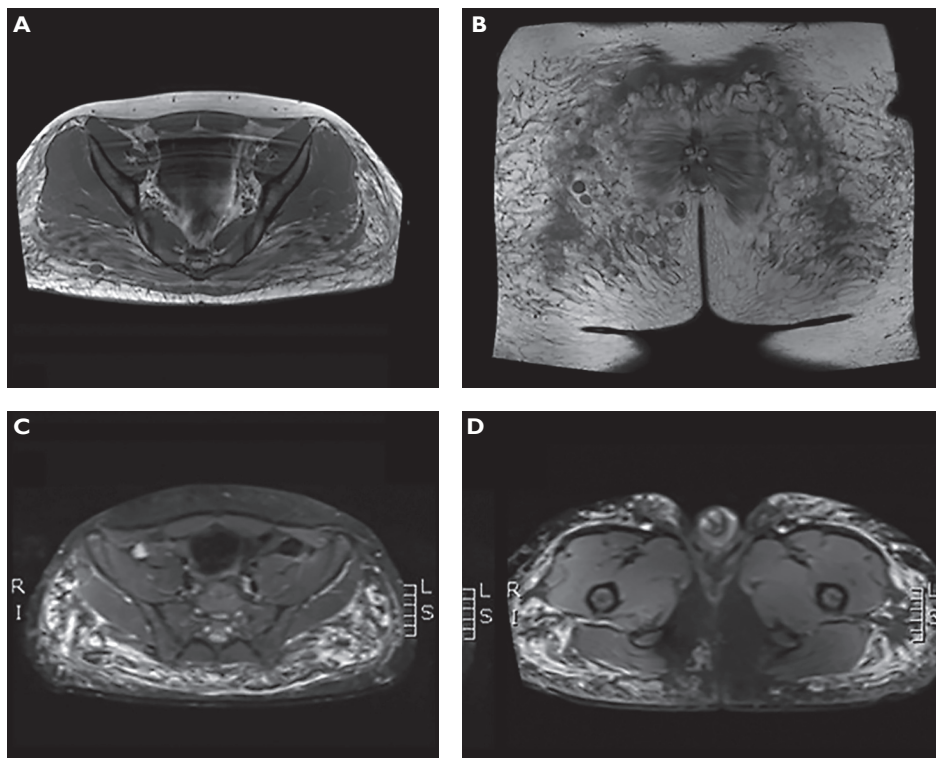


Figure 2: Magnetic resonance imaging of the pelvic and gluteal regions demonstrating extensive silicone-related soft-tissue involvement. A (axial T1-weighted image): Multiple low-signal-intensity nodular deposits are seen within the subcutaneous tissues of the gluteal region, with mild surrounding soft-tissue edema and no evidence of acute collection or abscess formation. B (coronal T1-weighted image): Further demonstrates the craniocaudal extent and multifocal distribution of the subcutaneous silicone deposits. C and D (axial diffusion-weighted images, $b = 800 \text{ s/mm}^2$): Show diffuse high signal intensity throughout the involved subcutaneous tissues, extending beyond the individual nodules, with corresponding low ADC values consistent with restricted diffusion, highlighting the diffuse extent of soft-tissue involvement.

Magnetic resonance imaging (MRI) further characterized the silicone-related deposits. T1-weighted axial and coronal sequences revealed well-circumscribed, hypointense lesions consistent with silicone presence in soft tissue. Diffusion-weighted imaging ($b = 800$) showed restricted diffusion around some nodules, likely reflecting surrounding inflammation. The examination was interrupted due to claustrophobia, but acquired sequences were sufficient to support the diagnosis. No abscesses or necrotic collections were identified (Figure 2).

The patient was treated with intravenous antibiotics and referred to a surgical team for further management.

Discussion

Silicone injection complications have been widely documented, especially when performed in non-medical contexts (Chasan, 2007; Parikh et al., 2008). Granulomatous reactions (siliconomas) may form in response to silicone deposits, involving macrophages, multinucleated giant cells, and chronic inflammation (Rapaport et al., 1996; Schwartzfarb et al., 2008). Silicone may travel through soft tissue planes and accumulate in lymphatic drainage areas, triggering inflammatory responses.

In this case, the gluteal deposits corresponded with the patient's history of injection. Imaging confirmed the presence of multiple soft tissue nodules. Reactive

lymphadenopathy likely resulted from inflammation and sepsis, not direct silicone infiltration. Imaging alone does not confirm silicone migration into lymph nodes; such findings require histopathological correlation (Ebrahim et al., 2014).

Ultrasound is useful for detecting silicone via the "snowstorm" artefact, but it lacks anatomic detail (Wilkie, 1977). CT can detect silicone as dense nodules relative to fat, although it cannot differentiate granulomatous tissue from other pathologies. MRI is the most sensitive modality for assessing soft tissue involvement and distinguishing silicone from surrounding structures (Luo et al., 2011; Gifuni et al., 2023). Specialized MRI sequences can even distinguish free silicone from other injected materials such as paraffin or fat.

This case illustrates that even years after injection, severe complications such as systemic infection may arise. Early identification via imaging and prompt clinical management are critical.

Conclusion

Illegal silicone injections carry substantial risks, including chronic inflammatory responses, systemic infections, and tissue damage. This case of silicone-related sepsis in a transgender man highlights the importance of imaging, especially MRI, in diagnosing and managing such complications. The widespread

use of unregulated silicone for cosmetic purposes underscores the need for public health initiatives and clinical awareness to prevent these avoidable outcomes.

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