

A woman with firm plaques on the buttocks and thighs



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INTRODUCTION

Sarcoidosis is a granulomatous disorder of unknown etiology that is capable of affecting multiple organ systems. Cutaneous manifestations of sarcoidosis are present in one-fourth of cases and commonly are the findings of disease. These findings can include macules, papules, nodules, plaques, subcutaneous nodules, ichthyosis, and lupus pernio.¹ In patients with systemic sarcoidosis, the presence of foreign bodies in granulomatous cutaneous lesions is not uncommon and can drive the formation of the above cutaneous findings. This occurrence may be related to an alteration in the immune system's capacity to handle foreign material, leading to the initiation of granuloma formation.² We present a case of cutaneous sarcoid associated with silicone injections.

CASE REPORT

A 52-year-old African-American woman presented with an 8-year history of firm plaques on her buttocks and thighs, which recently began to ulcerate. The lesions were localized to areas of silicone augmentation injections performed by an unlicensed practitioner 20 years before presentation. Medical history indicated pulmonary and cardiac sarcoidosis diagnosed 20 years before presentation. Associated symptoms included arthralgias, dyspnea, and an irregular heartbeat. The patient did not have a history of cutaneous sarcoidosis, including no evidence of sarcoidal involvement in her tattoos.

Examination found multiple 3- to 6-cm dark brown to violaceous indurated plaques with focal ulceration located diffusely on the buttocks and

lateral thigh (Fig 1). Laboratory evaluation found elevated angiotensin-converting enzyme (97 U/L; reference range, 8-52 U/L). Complete blood count and liver function results were within normal limits. Pulmonary function testing found chronic restrictive airway disease. Punch biopsy from the buttock found dermal granulomas composed of epithelioid histiocytes and scattered multinucleated giant cells (Fig 2). Foreign material remnants in the form of empty vacuoles were seen in the intervening dermis. Periodic acid–Schiff stain and acid-fast bacilli stains were negative for microorganisms. The clinical presentation and histologic findings confirmed the diagnosis of cutaneous sarcoidosis.

DISCUSSION

The pathophysiology of sarcoidosis is caused by hyperactivity of the cell-mediated immune system. After antigen presentation by monocytes, upregulation of T helper 1–mediated CD4⁺ T cells leads to reciprocal monocyte activation and initiates the formation of epithelioid granulomas in the dermis—a classic finding in sarcoidosis.¹ Histologically, sarcoidosis is a diagnosis of exclusion after infectious etiologies and foreign body reactions have been ruled out.

The appearance of sarcoidal granulomas in the skin may be idiopathic or triggered by inoculation of foreign material, whether it be incidental (minor trauma) or intentional (cosmetic filler injection or tattoo ink).² Although many types of injectable cosmetic fillers pose a risk of foreign body granuloma formation in patients without sarcoidosis, the incidence of true sarcoidosis secondary to filler

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Fig 1. Clinical view of violaceous indurated plaques with focal ulceration involving the buttocks.

materials is unknown. However, the presence of foreign bodies in granulomatous skin lesions of patients with sarcoidosis is not a rare event and may contribute to this incidence.³ Silicone has been proposed to induce formation of sarcoidal granulomas via a macrophage-mediated foreign body reaction, in which silicone serves as an immunologic adjuvant to enhance the antigen-specific immune response.⁴ This phenomenon is known as *autoimmune/inflammatory syndrome* induced by adjuvants, abbreviated as ASIA.⁴ Gluteal sarcoid lesions occurring after cosmetic silicone injections are rare. Silicone-induced sarcoid granulomas may occur at any time after the procedure, with reports ranging from 3 weeks to 23 years.⁵ Additional serious reactions to silicone injections have occurred (including chronic cellulitis, deforming nodules, migration, and embolization of material to distant body parts or organs), which are often unpredictable and uncorrectable.⁵⁻⁷

Treatment of cutaneous sarcoid is challenging and often unsuccessful. Corticosteroids (intralesional and systemic), minocycline, methotrexate, and tumor necrosis factor- α inhibitors are all part of the commonly reported treatment options.¹ Excision of foreign body material is a viable treatment choice for silicone-induced cutaneous sarcoid but may not be feasible because of location and amount of silicone injected.⁸ This case highlights classic cutaneous pathophysiology triggered by the unregulated use

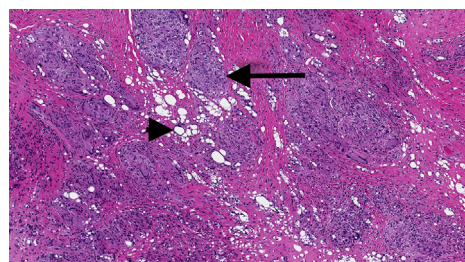


Fig 2. Punch biopsy of buttock shows dermal sarcoid granulomas (arrow) and foreign deposits (arrowhead). (Hematoxylin-eosin stain; original magnification: $\times 20$.)

of injectable silicone for cosmetic enhancement. It is prudent to educate sarcoid patients of the adverse effects associated with cosmetic fillers to prevent lifelong comorbidities.

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