Multiple Eruptive Dermatofibromas in a Patient With Sarcoidosis

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PRACTICE **POINTS**

- Sarcoidosis can present with multiple cutaneous morphologies and dermatologists should have a low threshold to perform skin biopsy to confirm sarcoidal granulomatous inflammation.
- Dermatofibromas can occur in greater numbers in patients with immune dysregulation such as human immunodeficiency virus and systemic lupus erythematosus.

To the Editor:

Dermatofibromas, the most common fibrohistiocytic tumors of the skin, are typically solitary lesions. Clustering of and multiple dermatofibromas (multiple eruptive dermatofibromas [MEDFs]) are relatively less common. The association between MEDF and systemic immunoaltered disease states such as systemic lupus erythematosus (SLE) or human immunodeficiency virus infection has been described and led to speculation that MEDF might be a result of an abnormal immune response. We report a patient with sarcoidosis who developed multiple large dermatofibromas, some clustered, on the neck, left shoulder, and back.

A 61-year-old woman with a history of mild pulmonary sarcoidosis confirmed by transbronchial biopsies presented to our clinic with a 2-year history of hyperpigmented papules on the trunk and extremities with subjective enlargement and increased erythema of a papule on the left shoulder over the last 6 months. She had associated pain and pruritus in the area. She was not on any systemic medications for sarcoidosis at the time. Physical examination revealed 2 large, firm, hyperpigmented nodules on the left shoulder, one with overlying erythema and mild scale (Figure 1). There also were

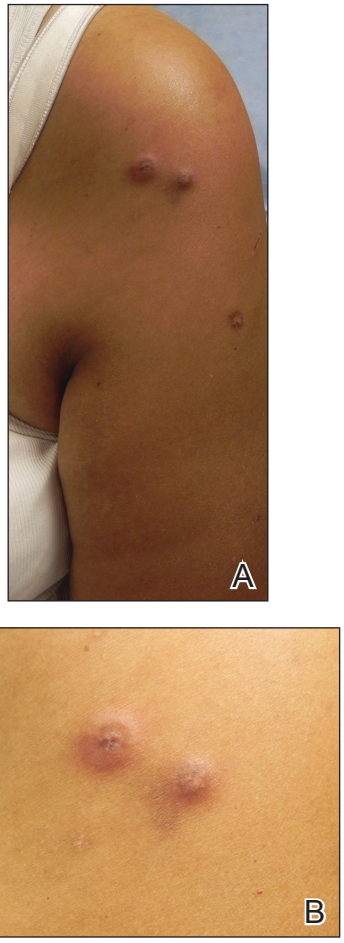

Figure 1. Two large, firm, hyperpigmented nodules on the left shoulder, one with overlying erythema and mild scale (A and B).

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multiple scattered hyperpigmented papules on the back, chest, and right arm that dimpled when compressed. A biopsy was obtained because of clinical concern for cutaneous sarcoidosis. Histopathologic evaluation of the largest nodule demonstrated epidermal hyperplasia with effacement of the rete ridges and a proliferation of spindle cells that wrapped around collagen fibers in the dermis, consistent with a dermatofibroma (Figure 2).

Dermatofibromas are common fibrohistiocytic neoplasms in the skin that typically present as a solitary lesion. A clustering of dermatofibromas, MEDFs, is relatively less common, representing only 0.3% of all dermatofibromas.[1,2] Histopathologically, similar to solitary dermatofibromas,[3] MEDF has classically been defined as more than 15 lesions, though another definition includes the appearance of several dermatofibromas over a relatively short period of time.[2]

Multiple eruptive dermatofibromas have been described in association with several underlying diseases. A strong association between MEDFs and immune dysregulation appears to exist, with 69% of reported cases of MEDF associated with an underlying disease, 83% of which were related to dysregulated immunity. Systemic lupus erythematosus was the most common underlying disease associated with MEDF, representing 25% of published cases.[3] Multiple eruptive dermatofibromas also have been linked to other autoimmune disorders such as myasthenia gravis,[4,5] Hashimoto thyroiditis,[4] diabetes mellitus,[6] Sjögren syndrome,[7,8] dermatomyositis,[9] and Graves-Basedow disease.[10]

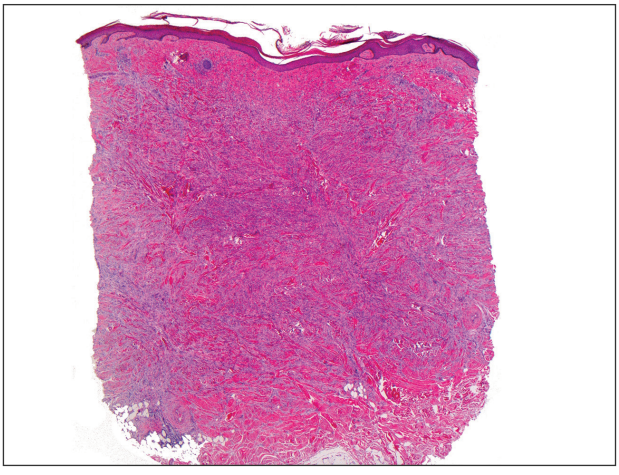

Figure 2. Punch biopsy from the papule on the shoulder demonstrated hyperkeratosis, blunting of the rete ridges, and an increase in fibroblast proliferation throughout the dermis without infiltration into the fat (H&E, original magnification ×40).

Multiple eruptive dermatofibromas also have been linked to immunosuppression, including human immunodeficiency virus[11]; malignancy[12,13]; and immunosuppressive or immunomodulatory drugs such as corticosteroids,[14] cyclophosphamide,[5] methotrexate,[9] efalizumab,[15] and interferon alfa.[12] The degree of immunosuppression, however, does not seem to correlate to the number of MEDFs.[3] In addition, MEDFs have been reported in pregnancy and a variety of other systemic disorders including atopic dermatitis,[1,16,17] hypertriglyceridemia,[8] and pulmonary hypertension.[18] We report a case of MEDF in a patient with sarcoidosis who was not treated with immunosuppressive medication. A report of sarcoidosis and MEDF was previously published, but the patient had been treated for many years with prednisone.[19] Most reports of SLE-associated MEDF occurred in the setting of steroid use.

Although the etiology of dermatofibromas is unclear, the link between MEDFs and altered immunity has led to speculation that dermatofibromas could be a manifestation of defective autoimmune inflammatory regulation. This hypothesis has been supported by the observation that the lesions are often associated with cells that express class II MHC molecules and also bear morphologic similarity to dermal antigen-presenting cells.[20] Reports of familial cases of MEDF suggest that there could be a genetic predisposition.[1]

The association of MEDFs and underlying immune disorders is important for clinicians to know for appropriate evaluation of potential systemic associations, including sarcoidosis. In addition, biopsy should be considered to confirm the diagnosis with large or atypical lesions to exclude other potential diagnoses. Given the protean nature of sarcoidosis, skin biopsy often is indicated to identify whether cutaneous findings are granulomatous sarcoid-related manifestations. The association of MEDFs with sarcoidosis requires further evaluation but might provide keys to understanding the pathophysiology of these lesions.

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