SHORT COMMUNICATIONS

Distinguishing Features: Linear Rashing is Not Always Koebnerization

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INTRODUCTION

Both cutaneous sarcoidosis and psoriasis can present with thick white scaling in a linear array. Distinguishing these conditions will alter the treatment plan.

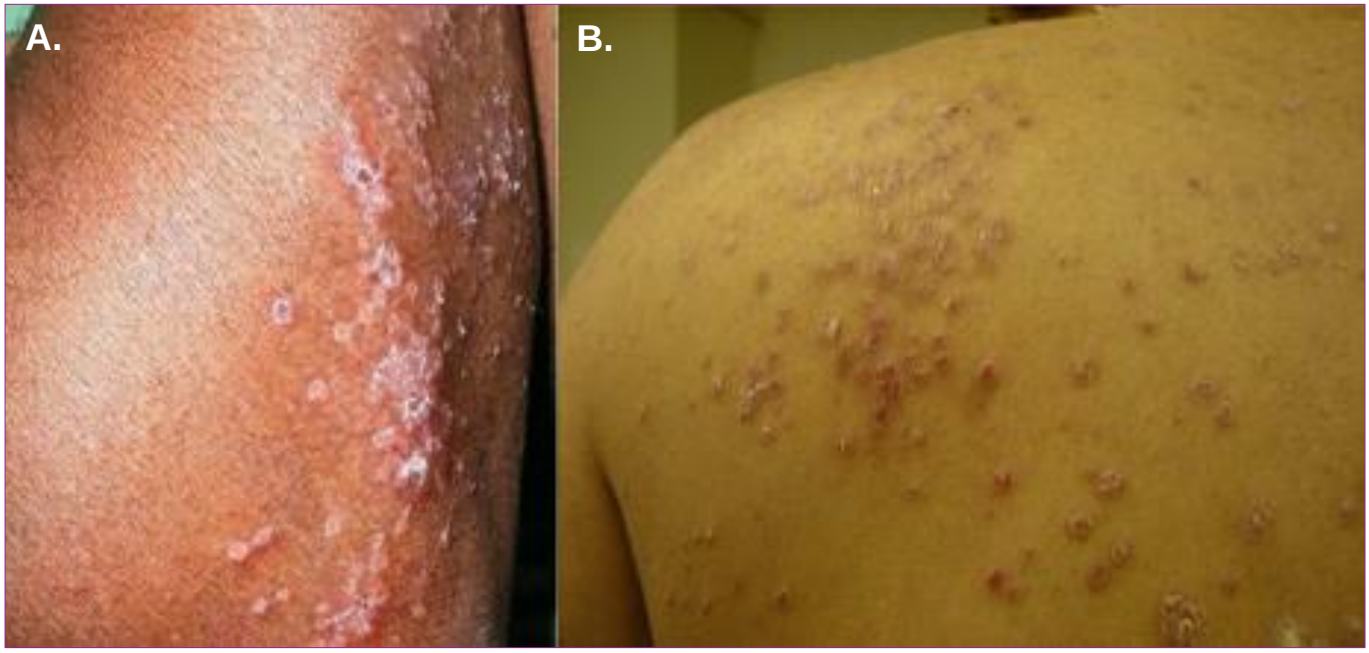
DISTINGUISHING FEATURES

Sarcoidosis is a chronic inflammatory, multi-system disease of unknown etiology. Cutaneous involvement occurs in 25% of patients. Immunopathologically, it is characterized by a macrophage/TH1/TH17 cell-mediated, non-caseating,granulomatous inflammatory process.cutaneous sarcoidosis has a predilection for scars associated with trauma, tattoos, piercings, acne, and herpes zoster. Scar sarcoidosis produces thick, indurated, erythematous to violaceous dermal papules or nodules, and assumes the shape of linear scars. The classical presentation are well-healed flat scars that suddenly elevate, however, this can occur as early as a few months to as long as 59 years after an injury (Figure 1).[1] When a cutaneous site is susceptible to infections, tumors, and immune disorders because of dysregulated local neuromodulator signaling, it can be termed an immunocompromised district.[2] There may be vascular, neural, or biochemical features inherent in scars that represent fertile ground for sarcoidal granulomas to develop.

Psoriasis is a chronic autoimmune disorder associated with activated T cells that drive a hyperplastic, inflammatory, proliferative response through elaboration of TH1/TH17 cytokines, stimulating keratinocyte to produce micaceous scaling and salmon coloration. In 25% of patients, psoriasis arises in a scratch or wound, producing raised, red linear, scaling plaques termed koebnerization (Figure 2).[3] This occurs within 7 to 14 days after injury. When psoriatic lesions clear, there are often no visible scars.

Linear sarcoidosis is not the result of koebnerization as has been suggested. [4,5,6] Koebnerization occurs within days or weeks as a result of inflammation induced by trauma. Sarcoidosis occurs many months to decades after trauma in uninflamed, completely healed scars. Table 1 summarizes the features that distinguish

Figure 1. (A) Linear sarcoidosis suddenly arising in a previously well-healed scar. (B) Linear psoriasis arising on the left posterior shoulder due to excoriation of pruritic patches. (*Used with permission from the International Journal of Dermatology, volume 52. Issue 10, pages 1282-1284)*



linear cutaneous sarcoidosis from linear psoriasis.

EVALUATION

Routine histological examination distinguishes cutaneous sarcoidosis from psoriasis. Sarcoidosis demonstrates islands of naked epithelioid granulomas surrounding lymphocytes and scattered multinucleated giant cells. Patients with new onset cutaneous sarcoidosis should undergo diagnostic testing (ocular examination, chest x-ray, pulmonary function tests, Kveim tests, serum ACE levels, and liver function tests) to rule out systemic involvement.

Psoriasis is largely a clinical diagnosis based on the nature and distribution of the scaling plaques. Histopathology demonstrates acanthosis, hyperkeratosis, neutrophilic spongiform pustules, and parakeratosis in the absence of serum.

TREATMENT

Cosmetically disfiguring, symptomatic, ulcerating, or progressively worsening cutaneous sarcoidosis is treated with intralesional corticosteroid therapy as first-line treatment. If local therapy fails, systemic glucocorticoids, antimalarial agents, and methotrexate are often effective. Anti-TNF biologic agents and thalidomide can be used in refractory cases (Table 1).

For limited plaque psoriasis arising in a scar, topical corticosteroids and emollients are first-line therapy. Alternatives include tar, topical retinoids, topical vitamin D, and anthralin. For facial or intertriginous areas, calcineurin inhibitors are useful corticosteroid sparing agents. Intralesional steroids, systemic agents (Table 1), and phototherapy are recommended for moderate to severe psoriasis.

Table 1: Features Distinguishing Linear Cutaneous Sarcoidosis from Linear (Koebnerized) Psoriasis

	Psoriasis	Sarcoidosis
Pathophysiology (General)	TH1/TH17 cell-mediated inflammatory process in the region of the dermal-epidermal junction	Macrophage/TH1/TH17 cell-mediated, non-caseating, granulomatous infiltrate in the dermis that extends into the subcutaneous fat
Pathophysiology of appearance in trauma related events	Koebnerization, an isomorphic response	Immunocompromised district, an isotonic response
Time of onset of linear lesions relative to trauma	Within 7 to 14 days after injury	Delayed appearance 6 months to 59 years after injury
Lesion types	Well-demarcated, raised, red plaques with white scaling centralized in a scar	Thick, indurated, erythematous to violaceous dermal macules, papules, and solid or annular plaques affecting a single color in a tattoo and/or suddenly appearing in well-healed scars
Pathology	Epidermal hyperproliferation and abnormal differentiation of epidermal keratinocytes with chronic inflammation	Noncaseating, chronic granulomas affecting multiple organs, including the skin
Possible associated systemic involvement	Psoriatic arthritis with joint pain and metabolic syndrome	Systemic multi-organ involvement
Treatment	Topical/intralesional corticosteroids (5-10mg/cc), phototherapy, calcineurin inhibitors, and systemic agents including retinoids, methotrexate, cyclosporine, apremilast, and biologic immune modifying agents	Intralesional corticosteroids (5-10mg/cc), systemic glucocorticoids, antimalarial agents (hydroxychloroquine and chloroquine), methotrexate, anti TNF agents, and thalidomide

CONCLUSION

Cutaneous sarcoidosis and psoriasis can present with linear scaled patches. Mechanical trauma (Koebnerization) occurs in psoriasis, whereas, the linear lesions of sarcoidosis appear in well-healed scars (immunocompromised district). The distinct pathophysiologic basis of these conditions is associated with clinical and histopathologic distinguishing features.

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