Dermpath Quiz

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An 82-year-old white man presented with several months' history of a well-defined lesion on the crown of the scalp within a surgical scar [Figure 1]. The lesion was unresponsive to antibiotic therapy. Physical examination revealed foci of crusts, pustules, and erythematous patches. Medical history was otherwise unremarkable.

A shave biopsy was performed from the skin of the scalp. Histological sections demonstrated a superficial crust with focal bacterial colonization of staphylococci. The underlying dermis revealed a polymorphous infiltrate composed of lymphocytes, neutrophils, eosinophils, and plasma cells [Figures 2 and 3]. Special stains for other fungal and bacterial organisms were negative. Immunohistochemical studies confirmed the polymorphous nature of the inflammatory infiltrate with no evidence of light chain restriction in the plasma cell population.

The lesion most likely represents:

A. Tinea capitis
B. Cicatricial pemphigoid
C. Folliculitis decalvans
D. Erosive pustular dermatosis
E. Dissecting cellulitis of the scalp

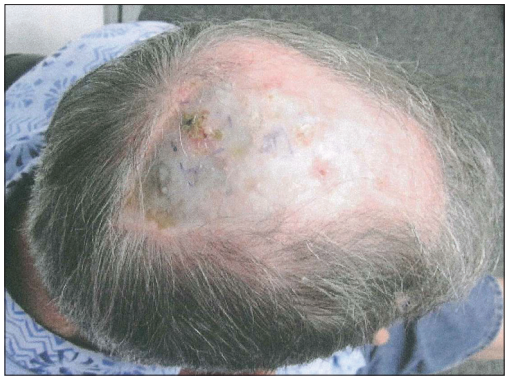

Figure 1: Multiple crusts and pustules in the scalp

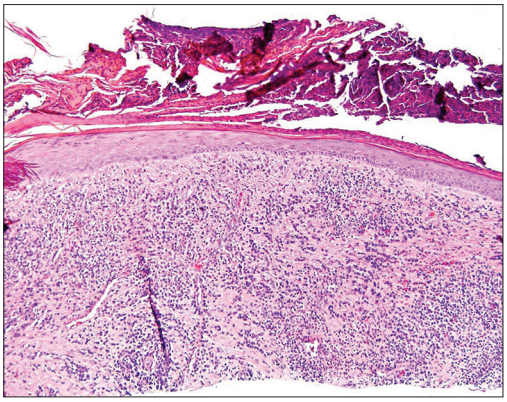

Figure 2: Superficial crust and underlying dermis with polymorphous infiltrate. H and E, ×100

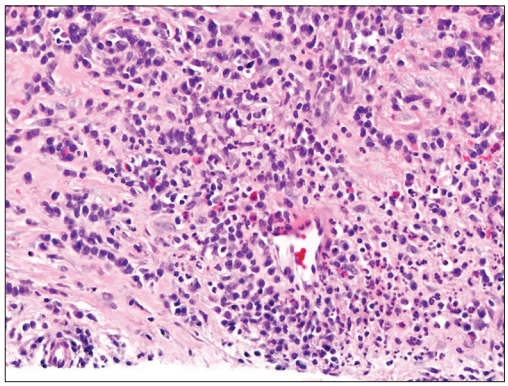

Figure 3: Polymorphous dermal infiltrate, composed of lymphocytes, neutrophils, eosinophils and plasma cells. H and E, ×400

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ANSWER

D. Erosive pustular dermatosis

DISCUSSION

Erosive pustular dermatosis of the scalp was first described by Pye, Peachey, and Burton in 1979.[1] It is predominantly seen on the sun-damaged scalps of older patients and clinically presents with thick yellow crusts covering shallow erosions, often in sites of prior surgery. The condition is often misdiagnosed leading to chronic morbidity.[2] It appears to be a reaction to prior trauma or atrophy, as it commonly follows surgery, radiation, cryotherapy, skin grafting, laser treatment, photodynamic therapy, imiquimod treatment, or herpetic infection of the skin. Although staphylococci are often present, the lesions do not respond to antibiotic therapy alone, suggesting that the condition represents a hypersensitivity response to bacteria and other stimuli rather than representing a simple infection. Erosive pustular dermatosis has been associated with autoimmune disorders including autoimmune hepatitis, rheumatoid arthritis, and Hashimoto thyroiditis.[1,3] Pustular dermatosis of the leg, developing from venous alterations and skin atrophy in the legs, is presumably a similar condition that may be grouped under the same category.[2] A case of erosive pustular dermatosis of the scalp in association with Klippel-Feil syndrome was described in a 6-month-old girl.[4] Erosive pustular scalp dermatosis-like eruptions have also been described after gefitinib and minoxidil therapy.

Histopathologically, erosive pustular dermatosis presents with erosions, crusts and a mixed inflammatory infiltrate. Both neutrophils and eosinophils are commonly seen. Pustules may be sterile, but it is not uncommon to find staphylococcal colonization. Although staphylococci are commonly present histologically, the condition does not respond to anti-staphylococcal therapy, suggesting they are not primarily involved in the pathogenesis of the condition.

The differential diagnosis of the erosive pustular dermatosis is broad. It includes fungal and bacterial infections, pemphigus vulgaris and foliaceus, cicatricial pemphigoid, subcorneal pustular dermatosis, and folliculitis decalvans. Direct immunofluorescence studies may be required to confirm the absence of immunoglobulin deposition. Folliculitis decalvans presents with crops of pustules that result in epilation. Subcorneal pustular dermatosis typically presents in middle-aged women and involve the flexural sites of the trunk and proximal extremities. Pustules in subcorneal pustular dermatosis are noted at the edge of the expanding patch, and some patients demonstrate Immunoglobulin A deposition.

Erosive pustular dermatosis of the scalp usually responds well to potent topical corticosteroids. Other less commonly used therapeutic modalities include oral zinc sulfate, isotretinoin, dapsone, calcipotriol and tacrolimus ointment, and photodynamic therapy. Erosive pustular dermatosis should be treated to prevent further scarring and disfigurement, as well as secondary neoplasia. A case of squamous cell carcinoma has been described in the lesion of erosive pustular dermatosis of the scalp.[5]

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