Erosive pustular dermatosis of the scalp

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Abstract

Erosive pustular dermatosis of the scalp (EPDS) is a rare inflammatory condition commonly associated with antecedent iatrogenic insult. EPDS may be diagnostically challenging owing to a lack of pathognomonic histologic findings and cutaneous manifestations that overlap with alternative dermatologic conditions. Therefore, EPDS may be more common than previously recognized. We present a 60-year-old woman with a four-year history of non-healing scalp erosions, progressive skin atrophy, and scarring alopecia despite intravenous antibiotics and intraoperative debridement who improved with systemic glucocorticoids. Our report emphasizes the importance of early recognition of EPDS when delayed wound healing and erosive disease occur in the setting of iatrogenic injury to the scalp. Timely treatment with systemic anti-inflammatory agents is paramount to prevent cicatricial alopecia and mitigate further scalp insult in EPDS.

Keywords: erosive pustular dermatosis, erosions, cicatricial alopecia, scalp, delayed wound healing, iatrogenic injury, systemic glucocorticoids

To the Editor:

Erosive pustular dermatosis of the scalp (EPDS) is a rare inflammatory condition characterized by recurring erosions and crusts on atrophied skin that most commonly presents in the elderly [1]. The diagnosis is made clinically based on supportive findings and exclusion of alternative disorders. Contrary to the name of the disease, intact pustules are often rare or absent entirely in EPDS. Most cases are asymptomatic, though a minority of patients may experience pruritus, pain, or burning [1]. Although the pathogenesis is unclear, antecedent scalp injury frequently precedes the onset of scalp lesions. We report a case of EPDS responsive to systemic glucocorticoids in a patient presenting with delayed wound healing, persistent erosions, and sterile cultures following iatrogenic scalp injury.

A 60-year-old woman presented with a four-year history of non-healing scalp erosions with progressive skin atrophy and scarring alopecia. Her medical history was significant for recurrent meningioma treated with gamma knife radiotherapy and multiple surgical resections. The patient's clinical course was complicated by postoperative infection and chronic osteomyelitis of the skull. The scalp wounds would not heal despite intravenous antibiotics, intraoperative debridement, and corticosteroid cream. A dermatology consult was requested to determine the underlying etiology and ensure there was no ongoing infection before a plastic surgeon proceeded with cranial reconstruction. Examination of the scalp was significant for large crusted erosive plaques with scaling and areas of complete alopecia (**Figure 1**). The patient appeared non-toxic and did not exhibit purulent drainage or streaking erythema. Lesions were painful and pruritic. Bacterial, anaerobic, fungal, and acid-fast cultures were negative. Treatment was commenced based on a clinical suspicion for EPDS and the patient demonstrated vast improvement with a 6-week prednisone taper, topical mometasone, and xeroform dressings (**Figure 2**).

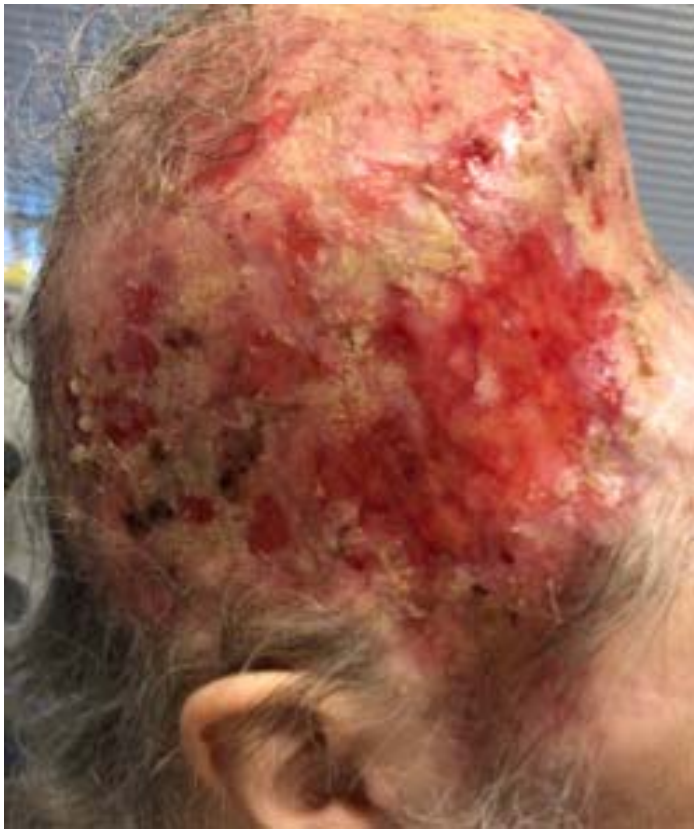

Figure 1*: Patient's scalp at time of presentation with non-healing crusted erosive plaques, skin atrophy, and scarring alopecia.*

Erosive pustular dermatosis of the scalp has been associated with iatrogenic insult from surgical procedures, skin grafting, laser treatment, ultraviolet light exposure, radiation therapy, and cryotherapy. The timing between trauma and the onset of EPDS has been weeks to years [1-3]. It is hypothesized that damage results in skin atrophy, thereby delaying wound healing and promoting persistent erosions. Long-standing disease may progress to cicatricial alopecia as adjacent areas of the scalp become affected [3,4]. There are no pathognomonic histologic features and diagnosis relies on correlation with history and physical examination.

Histopathology may reveal sterile pustules, epidermal ulceration or atrophy, reduced or absent hair follicles, and a nonspecific mixed inflammatory infiltrate [1,3]. Biopsy is essential to exclude alternative diagnoses, including squamous cell carcinoma and cicatricial pemphigoid. Erosive pustular dermatosis of the scalp lesions are typically responsive to anti-inflammatory agents, such as high potency topical corticosteroids or topical calcineurin inhibitors. In refractory disease, short-term systemic glucocorticoids may be beneficial [3,4]. Alternatively, antibiotics that inhibit neutrophil recruitment such as dapsone and tetracycline have demonstrated benefit in EPDS [5]. However, evidence-based treatment recommendations are limited owing to a lack of randomized controlled trials.

Although classically considered a rare condition, recent evidence suggests that EPDS is more common that previously recognized [4]. This may be attributed to a lack of pathognomonic histologic findings and misdiagnosis because of overlapping cutaneous manifestations in alternative dermatoses. The present case highlights the need for a high index of clinical suspicion for EPDS when delayed wound healing and erosive disease occur in the setting of injury to the scalp. Initially, persistent infection was the presumed diagnosis given the patient's history of chronic osteomyelitis of the skull postoperatively. However, her history of local scalp trauma, sterile cultures, lack of improvement with antibiotics, and marked response to systemic glucocorticoids support the diagnosis of EPDS. Early recognition and timely treatment with anti-inflammatory agents are critical to prevent progressive disease, permanent

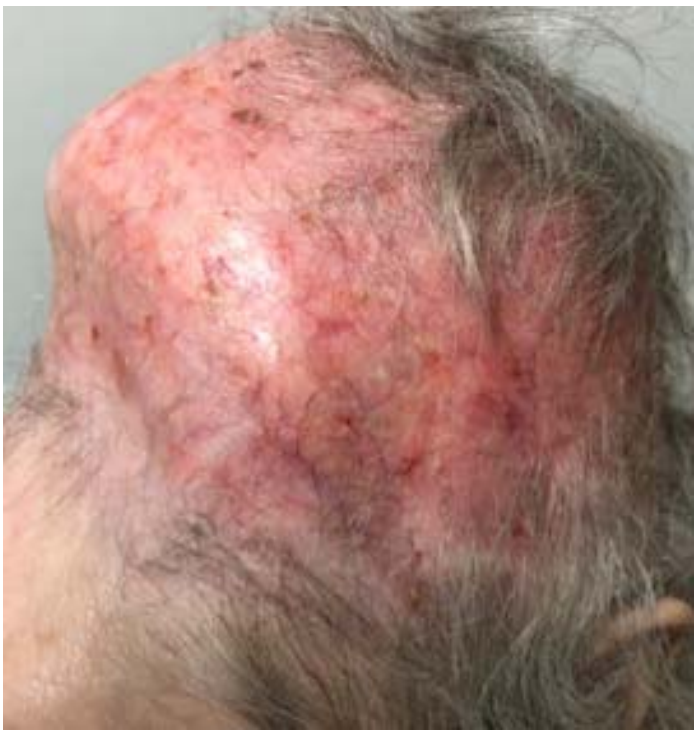

Figure 2*: Marked clinical improvement of patient's scalp after systemic glucocorticoid treatment course.*

scarring alopecia, and unnecessary treatment that may exacerbate EPDS through further scalp insult.

Clinicians should consider EPDS when delayed wound healing and persistent erosions occur following iatrogenic scalp injury. Importantly, EPDS may be more common than previously recognized. Underdiagnosis is attributed to a lack of pathognomonic histologic findings and cutaneous manifestations that overlap with those in alternative dermatologic conditions, including bacterial infection, squamous cell carcinoma, and cicatricial pemphigoid. Our report emphasizes the importance of early recognition and timely treatment with anti-inflammatory agents to prevent permanent cicatricial alopecia and avoid invasive therapeutic regimens that may worsen EPDS.

Potential conflicts of interest

The authors declare no conflicts of interests.

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