Cicatricial Alopecia after a Surgical Procedure

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Question

A 61-year-old female patient underwent a face-lifting surgery, and after 2 days, she developed blisters and scaly skin lesions at the suture site. Approximately 30 days after the procedure, she had pustules and extensive crust on the frontal-parietal region with drainage of purulent discharge. During follow-up with her plastic surgeon she was treated with several antibiotics and antifungals, both orally and intravenously, guided by culture (*Staphylococcus aureus*, *Candida krusei*, and *Escherichia coli*) and gram-negative bacilli and yeasts from the discharge; however, the condition remained unresolved. She underwent 30 sessions in a hyperbaric chamber, with partial improvement, which was followed by relapse of the lesions. After 1 year, she was referred to the dermatology department, presenting with cicatricial alopecia in the frontal-

temporal region, bilaterally, with presence of crusts and ulcerations (Fig. 1). A biopsy of the region showed a sub-corneal pustule, edema in the dermo-epidermal junction, and an interstitial lymphohistiocytic infiltrate affecting the superficial and medial dermis (Fig. 2). Direct immunofluorescence and periodic acid-Schiff staining were negative. She was instructed to discontinue the use of antibiotics and to initiate high-potency topical corticosteroids (clobetasol propionate), without significant changes. Based on her clinical condition, tacrolimus 0.1% and prednisone 1 mg/kg/day for 2 weeks were prescribed, with subsequent tapering off, as well as dressings of hydrocolloid patches twice weekly. The eroded areas remitted within 2 months but with an extensive area of cicatricial alopecia persisting in the bilateral frontal-parietal region.

What is your diagnosis?

Color version available online

Fig. 1. Area of cicatricial alopecia in the frontal-temporal region, bilaterally, with presence of crusts and ulcerations.

Color version available online

Fig. 2. Vertical section. Subcorneal pustule, edema in the dermo-epidermal junction, and interstitial lymphohistiocytic infiltrate affecting the superficial and medial dermis.

Answer

Erosive pustular dermatosis (EPD) of the scalp is a rare form of cicatricial alopecia first described by Burton [1] in 1977 and clinically characterized by a chronic eruption of scalp pustules, erosions, and crusts that lead to scarring alopecia and slowly progresses to involve the adjacent scalp areas. The course is typically chronic and poorly responsive to treatments [2]. A beefy red coloration is characteristic [3].

It generally occurs in elderly patients but may also affect younger patients and, although rarely, children. White patients and women are affected most commonly [3–5].

Its etiology is unknown, although some triggering factors are implicated, such as prolonged exposure to ultraviolet radiation, local trauma, phototherapy, cryotherapy, radiotherapy [6], and treatment with laser [7]. It is proposed that the physical trauma would stimulate the production of autoantibodies against skin structures, resulting in a secondary inflammatory reaction [8]. In the present report, the face-lifting surgery was possibly the triggering event. The association with autoimmune diseases – rheumatoid arthritis, autoimmune hepatitis, Hashimoto's thyroiditis, and Takayasu's arteritis – is also reported [9].

Positive cultures suggest secondary colonization, corroborated by the patient's treatment failure with antifungal and antibiotic drugs [9]. Histopathology is unspecific but critical to rule out differential diagnoses. The epidermis may be normal, with hyperkeratosis and parakeratosis, rash or atrophy, and with subcorneal pustules [4, 9]. The dermis may contain a mixed chronic inflammatory infiltrate of lymphocytes, neutrophils, and plasmacytes, mainly in the upper dermis [9]. In late stages, dermal fibrosis and atrophy of hair follicles with loss of elastic tissue may be present [4, 9].

There is an extensive list of differential diagnosis, such as bacterial or fungal infection, pustular psoriasis, pemphigus foliaceus, dermatitis artefacta, folliculitis decalvans, cicatricial pemphigoid, and pyoderma gangrenosum (PG) [9, 10].

PG is the most similar situation after ruling out infection, and it is considered a neutrophilic dermatosis. In almost 50% of the cases, it has been found to be associated with a systemic disease such as inflammatory bowel disease, myeloproliferative disorders, collagen vascular diseases, arthritis, and malignancy. PG usually manifests as single or multiple painful lesions distributed mainly over the legs, especially in the pretibial region. Lesions

can also be present on other body sites such as the head and neck, trunk, and hands [11].

EPD and PG are 2 entities of difficult clinical diagnosis, unknown etiology, and nonspecific histology. In the present report, associated systemic diseases were excluded and histopathology, although nonspecific, showed a mixed chronic inflammatory infiltrate.

The literature reports several treatments, but none of them is a gold standard for EPD. The topical use of tacrolimus, calcipotriol [12], and oral treatments with nimesulide, acitretin, isotretinoin, and zinc sulfate are reported [4, 7, 13, 14]. There are reports of the use of topical and systemic corticoids and dapsone [4, 13].

Although EPD is a rare condition, it is important to diagnose and treat correctly to prevent irreversible damages such as permanent hair loss.

Statement of Ethics

Patient consent has been obtained.

Disclosure Statement

The authors declare that they have no conflicts of interest to disclose.

Keywords

Alopecia · Cicatricial alopecia · Frontal lifting · Trauma

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