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Eruption of solitary reticulohistiocytoma after intense pulsed light burn

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INTRODUCTION

Solitary reticulohistiocytoma (RH), also known as a *solitary epithelioid histiocytoma* (not to be confused with an *epithelioid fibrous histiocytoma*), is a rare benign non—Langerhans cell histiocytic lesion. The etiology of solitary RH is largely unknown; however, it is suggested that the lesions may result from an unknown inflammatory process that leads to localization of cytokine-induced histiocytes.[1]

Since RH was first described in 1950 by Zak,[2] several cases have documented the diverse clinical presentations of RH. The most common presentation is of a yellow or reddish-brown painless, cutaneous papule with a diameter less than 1 cm.[1] A study of 44 cases reported that these lesions tend to occur at several sites including the head and neck, trunk, arms, and legs,[1] although facial involvement is rare in solitary RH and more common in multicentric reticulohistiocytosis. Rare locations include the penis,[3] orbit,[4] and eyelid.[5] In contrast to multicentric reticulohistiocytosis, which lies in the same spectrum of disease, solitary RH has not been associated with systemic disease or malignancy.[6]

Before this publication, only some solitary RH cases have occurred in the setting of possible trauma.[7] Here we report a rare case of solitary RH in a healthy 32-year-old man that developed in the same location of a superficial, second-degree burn sustained from intense pulsed light (IPL) treatment.

Abbreviations used:

IPL: intense pulsed light
RH: reticulohistiocytoma

CASE REPORT

A 32-year-old white man with a medical history significant for type 1 diabetes and acne rosacea presented with a 7-mm reddish-brown papule on the left temple along the hairline that appeared and suddenly grew over several weeks. The lesion was asymptomatic with no associated pain, pruritus, ulceration, or bleeding. Of note, the patient

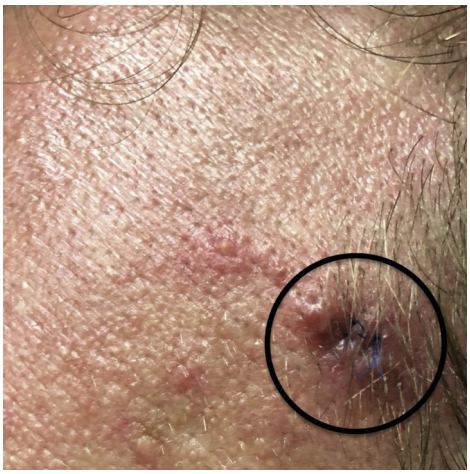

Fig 1. Solitary reticulohistiocytoma. Postbiopsy clinical image. The erythematous, inflammatory papules surrounding the biopsy site were more transient in nature and followed the course of typical acneiform lesions. Thus, they were not suspected to be involved in the histiocytic disease process.

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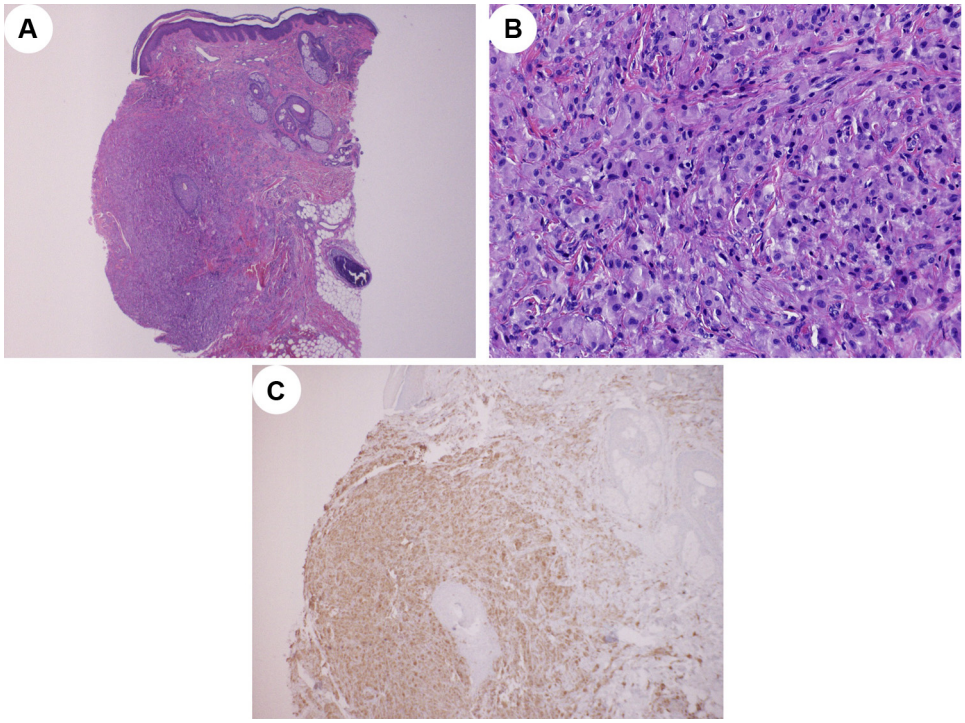

Fig 2. Histopathologic examination of a solitary reticulohistiocytoma. **A**, Low-power view of inflammatory infiltrate within the dermis. **B**, Epithelioid histiocytes with a finely granular cytoplasm that is pale pink (amphophilic) and multinucleated cells in a background of mixed lymphocytes. **C**, Positive CD68 staining of histiocyte cytoplasm. CD1a staining was negative, and S-100 stained positively among dendritic cells only (*not shown*). (**A** and **B**, Hematoxylin-eosin stain; original magnifications: **A**, ×20; **B** and **C**, ×200.)

previously initiated IPL therapy (optic, 12 J/cm^2; radiofrequency, 20 J/cm^3) for treatment of rosacea (500-670 nm for vascular lesions)[8] 3 weeks before the appearance of the lesion. During this session, he sustained several second-degree burns, most prominently in the area where the lesion eventually appeared. The initial clinical differential diagnosis included a follicular cyst, hemangioma, dermatofibroma, seborrheic keratosis, basal cell carcinoma, and amelanotic melanoma.

The area was initially treated with one 0.5-mL injection of intralesional Kenalog 10 and oral Doryx (doxycycline hyclate delayed-release), 120 mg/d for 1 month, based on the suspicion that the lesion was an acne cyst. After treatment, the papule reduced in size by approximately 80%, but did not completely clear, and the lesion recurred within a month. Trial incision and drainage with an 11 blade yielded no drainage of keratinaceous material. During the same visit, a 4-mm nonexcisional punch biopsy was performed to rule out a neoplastic process (Fig 1).

Histopathologic examination found a monomorphous infiltrate of epithelioid cells throughout the dermis among a background of a mixed lymphocytic infiltrate (Fig 2, *A*). Higher power examination found mono- and multinucleated histiocytes with abundant, finely granular, and amphophilic cytoplasm that displayed a characteristic ground-glass appearance (Fig 2, *B*). Immunohistochemical studies found lesional cells staining positive for CD68 and negative for CD1a and S-100 (Fig 2, *C*). Overall, these features supported a final diagnosis of solitary RH. In our case, the patient elected for additional treatment with 0.5-mL intralesional Kenalog 10 and oral Acticlate (doxycline hyclate USP), 75 mg/d, and the lesion remitted within several days.

DISCUSSION

Our case demonstrates the emergence of a solitary RH in a healthy 32-year-old man within 3 weeks of second-degree burning from IPL treatment of acne rosacea. Solitary RHs are rare, with only a few case series and reports in the literature. The pathophysiology remains largely unknown, but most have considered it as a nonneoplastic reaction to an unknown inflammatory stimulus. Although a few cases are reported in association with a possible traumatic etiology,[7] none are reported after light or laser therapy. Given the close temporal association with initiation of IPL treatment and the location of the

lesion within the site of a prior burn, it is possible that the appearance of a solitary RH was stimulated by thermal injury.

IPL is a noninvasive treatment modality used to treat an increasingly wide range of dermatologic diseases, including melasma, hypertrichosis, acne vulgaris, rosacea, and vascular lesions. The therapy involves the generation of high-intensity light pulses at multiple wavelengths in the 500- to 1200-nm range.[8] This light energy is absorbed by chromophores (hemoglobin, melanin, or water) within the skin and converted into heat energy that causes destruction of the targeted area. The therapy is usually well tolerated but can commonly cause mild side effects including erythema, burning, and blistering.[8] These complications are typically transient, resolving within several days. Rarely, the neighboring melanocytes and dermal tissue are damaged, resulting in pigmentary changes or scarring that may be permanent. To our knowledge, this is the first reported case of a dermal histiocytic infiltrate likely stimulated by trauma from IPL. As opposed to previously reported cases,[1] our case demonstrates a folliculocentric, vertical growth pattern without overlying epidermal changes and with extension to the subcutaneous fat. Thus, trauma-induced cases of solitary RH may show noncharacteristic histologic growth patterns.

RHs can be difficult to diagnose given their rarity and nonspecific clinical appearance. The clinical differential diagnosis for a solitary dermal papule is broad and may include entities such as basal cell carcinoma, hemangioma, dermatofibroma, pyogenic granuloma, and amelanotic malignant melanoma. Thus, even though RHs are considered benign, precise diagnosis may be helpful to rule out other, more serious conditions. In fact, there are cases reported of solitary RHs clinically mimicking basal cell carcinoma[9] and amelanotic malignant melanoma.[10] It is important for clinicians to be aware of the diagnosis of RH to avoid overtreatment for other diagnostic considerations.

Treatment of solitary RH lesions is generally unnecessary, as they will often resolve spontaneously over several months. If desired for diagnostic or cosmetic purposes, they can be treated definitively with complete surgical excision. If the lesion is incompletely excised, the growth may subsequently return.

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