A unique case of Sea Blue Histiocyte-like infiltration in a patient with Cutaneous Lupus Erythematosus

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Introduction

- Sea blue histiocytes (SBH) have been defined as macrophages containing numerous large granules in their cytoplasms, which stain blue with Giemsa.¹

- In this abstract, we report an unusual case of cutaneous lupus erythematosus (CLE) with infiltration by numerous histiocytes resembling SBH within lesions otherwise characteristic for CLE.

Case Description

- A 66 year old female presented with several months history of multiple skin lesions on different body sites.
- On physical examination, tender brown scaly plaques and subcutaneous nodules were appreciated on the upper and lower extremities, chest, and back. There was also scarring alopecia noted on the scalp.
- Serum testing was positive for anti-Smith/RNP, and low serum complement levels.
- Histologic examination of a skin biopsy from an active scalp lesion revealed interface dermatitis, with vacuolar degeneration of the basal layer, and multiple dyskeratotic keratinocytes.
- Periodic acid-Schiff (PAS) staining highlighted diffuse basement membrane thickening, consistent with CLE.
- There was also prominent infiltration of the dermis and subcutis by enlarged, bland-appearing histiocytes with abundant bluish-gray-staining multi-vacuolated cytoplasm, which stained blue with Giemsa, similar to SBH; however, both Alcian blue and colloidal iron stains highlighted prominent dermal mucin, as well as the intracytoplasmic material within the histiocytes, demonstrating that the substance within the histiocytes was mucin.

Discussion

- SBH have been reported primarily in inherited disorders of lipid metabolism.¹
- There have been rare reported cases of secondary sea blue histiocytosis in dermatologic diseases, including a patient with mycosis fungoides who had SBH demonstrated in the skin after treatment.²
- To our knowledge, this is the first reported case of a patient with CLE who had an associated SBH-like infiltration.

Images

- Fig. 1. H&E . Interface dermatitis showing vacuolar degeneration of the basilar layer
- Fig. 2. H&E. Prominent infiltration of the subcutaneous fat by multi-vacuolated and granular-appearing histiocytes
- Fig. 3. Colloidal iron staining. Positive staining of the material within histiocytes is consistent with mucin-filled cytoplasm

References