Case Report

Management of Reticular Erythematous Mucinosis in a Middle-Aged Female: A Case Report

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Abstract
This case report details the clinical journey of a 48-year-old female diagnosed with Reticular Erythematous Mucinosis, a rare dermatological condition characterized by persistent erythematous plaques. Highlighting the complexities of diagnosis and the effectiveness of a tailored therapeutic approach, this report underscores the necessity for meticulous clinical and pathological evaluation in dermatology, particularly for conditions with overlapping features with other dermatoses.

Keywords: antimalarials, chronic dermatosis, erythematous plaques, personalized dermatological treatment, Reticular Erythematous Mucinosis, topical calcineurin inhibitors

Introduction

Reticular Erythematous Mucinosis (REM) is a distinct chronic dermatological condition primarily presenting with erythematous plaques affecting the chest and back and more rarely on the abdomen, face and upper limbs (Steigleder et al., 1974; Cinotti et al., 2015; Kenny et al, 2021). The criteria for REM were revised in 1974, and the debate continues as to whether REM and plaque-like cutaneous mucinosis represent different clinical manifestations of the same disease (Steigleder et al., 1974; Thareja et al., 2012; Ocanha-Xavier et al., 2021). Typically, REM appears as a diffuse reticular erythema consisting of macules or papules, which may be asymptomatic or cause pruritus, primarily affecting the trunks of middle-aged women. Some less common areas of involvement include the face, legs, arms, and abdomen

(Rongioletti et al., 2013; Dick et al., 2019; Miura & Yamamoto, 2022).

The exact cause of REM remains unknown, although familial cases suggest a genetic predisposition. Additionally, various factors such as ultraviolet (UV) light, immune system disturbances and viral infections are believed to contribute to the development of REM (Tenea & Campaini, 2023; Atci et al., 2017). This condition has been associated with autoimmune diseases like lupus erythematosus, hyperthyroidism, Hashimoto's disease, diabetes mellitus, thrombocytopenic purpura, tumors, myopathy, pregnancy, and polyneuropathy (Garber et al., 2017; Wollina et al., 2021). There are also questionable links between REM and viral infections, as well as Borrelia infection (Ziemer et al., 2009; Rongioletti et al., 2013). Hormonal changes during menstruation, radiotherapy, and exposure to heat have been reported as potential exacerbating factors (Anderson et al., 2006; Ocanha-Xavier et al., 2021; Miura & Yamamoto, 2022).

Due to its rarity and the nonspecific nature of its presentations, REM can often be confused with other more common dermatoses, thus challenging its management (Magaña et al., 2022, Daruish et al., 2024). This case provides an in-depth analysis of the diagnostic process and therapeutic management, offering insights into the nuanced approach required for such dermatological conditions.

Patient Profile

Gender/Age: Female, aged 48 years. The patient has a history of chronic iron-deficiency anemia, which is being actively managed through the use of iron supplements to maintain adequate iron levels and prevent related complications.

In 2008, she underwent a total thyroidectomy after being diagnosed with thyroid cancer. Following the surgery, she received therapeutic iodine treatment (likely radioactive iodine therapy) to address any remaining thyroid tissue and reduce the risk of cancer recurrence.

As a result of the thyroidectomy, she has been diagnosed with hypothyroidism, a condition where the thyroid gland no longer produces sufficient thyroid hormones. This is being managed with appropriate thyroid hormone replacement therapy to ensure normal metabolic function and prevent symptoms associated with low thyroid levels.

Clinical Presentation: The patient initially presented in September 2023 with complaints of persistent, itchy erythematous patches on her left forearm. These patches were noted to exacerbate during her premenstrual period and were resistant to conventional topical treatments including corticosteroids.

Diagnostic Evaluation

Dermatological Examination

The patient presented with erythematous plaques (red, inflamed patches) located on the lower and anterior surfaces of the left forearm, which were suggestive of a dermatological condition requiring further evaluation (Image 1).

Laboratory Tests

A complete blood count (CBC) was performed, revealing mild anemia. However, the patient's biochemical and immunological profiles were largely within normal limits, effectively ruling out the possibility of systemic autoimmune disorders such as rheumatoid arthritis or systemic lupus erythematosus.

Skin Biopsy

A skin biopsy was conducted to investigate the underlying pathology of the lesions. The results showed mild perivascular lymphocytic infiltration (increased lymphocytes around the blood vessels) and mucin deposition (a substance produced by certain cells), both of which are characteristic of remitting erythematous mucinosis (REM). These findings, though indicative of REM, are also commonly seen in other autoimmune conditions, such as lupus erythematosus.

Differential Diagnosis: The differential diagnosis, which includes conditions that share similar clinical and histopathological features, included:

1. Cutaneous lupus erythematosus: A form of lupus that affects the skin, causing lesions and inflammation.

2. Dermatomyositis: An inflammatory disease that causes muscle weakness and skin rashes.
3. Jessner's lymphocytic infiltrate: A benign condition characterized by the accumulation of lymphocytes in the skin.
4. Lichen myxedematosus: A rare skin condition involving mucin deposits and thickened skin.

Therapeutic Intervention:

Initial Treatment

The patient was initially prescribed high-potency topical corticosteroids to reduce inflammation and erythema. In addition, a trial of antimalarial therapy (Hydroxychloroquine) was initiated, selected for its immunomodulatory effects, which help in regulating the immune system and reducing inflammation associated with autoimmune skin conditions.

Image 1: (a) Clinical presentation at the first visit. Unilateral infiltrated erythematous-violaceous papules in a reticular pattern on the anterior part of the left forearm, biopsy site. **(b)** Infiltrated erythematous papules and plaques on the left forearm at the first visit.

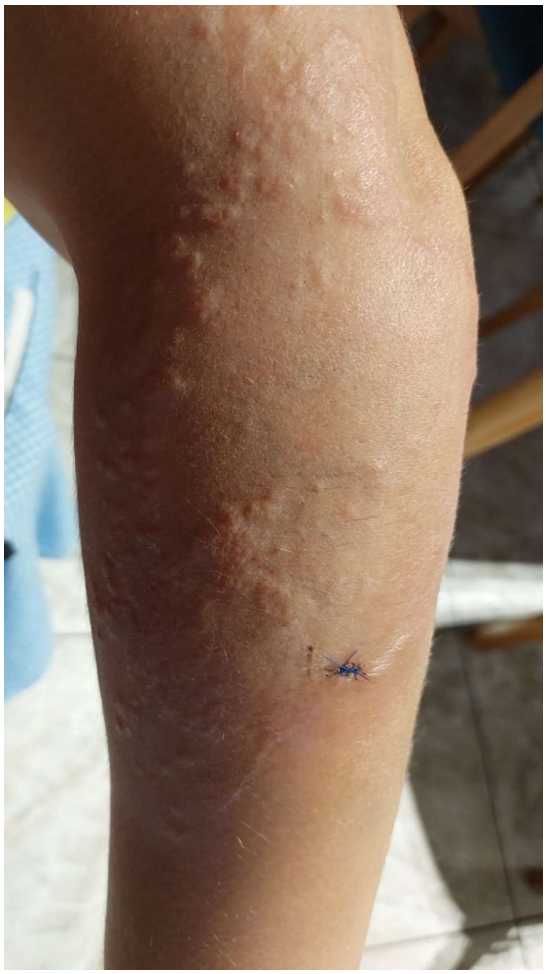


Image 2: Three weeks of follow-up after the use of photoprotection and topical 0.05% clobetasol propionate twice daily.

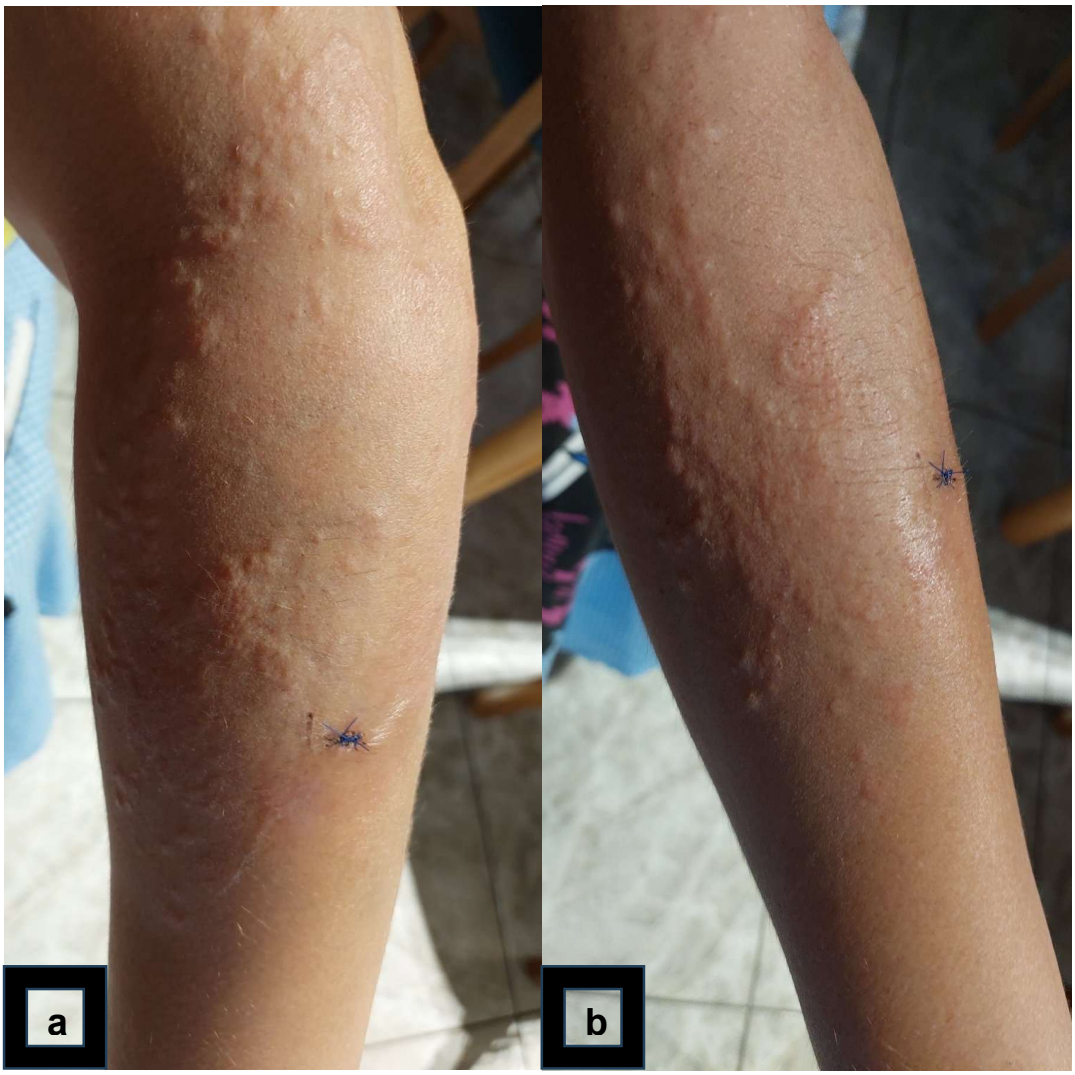
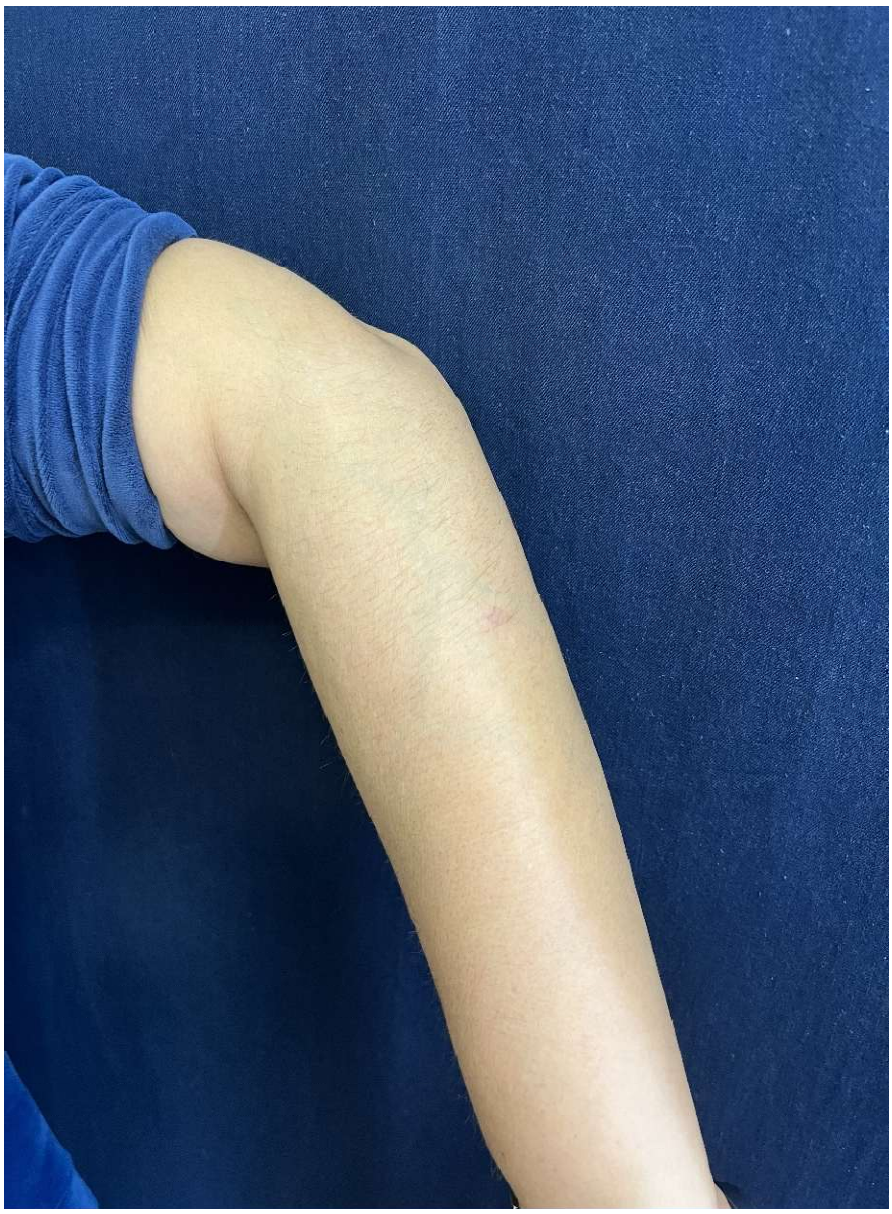


Image 3: Complete clinical remission after six months of follow-up and treatment with hydroxychloroquine.



Follow-Up Regimen

After observing a partial response to the initial treatments, the regimen was adjusted in October 2023 (Image 2). The patient was started on topical calcineurin inhibitors, a class of medications used to reduce inflammation while minimizing the risks and side effects associated with prolonged corticosteroid use.

Outcome and Follow-Up

By December 2023, there was significant improvement in the patient's condition, with a marked reduction in erythema (redness) and resolution of pruritus (itching) (Image 3). The lesions had notably improved, and no new skin lesions had appeared by the time of the last follow-up in February 2024. The patient's condition remained stable, and regular follow-up visits were scheduled to monitor for any potential flares or recurrence of symptoms and to make necessary adjustments to the treatment plan.

Discussion

The overlap of REM with other dermatological conditions creates substantial challenges in both accurate diagnosis and effective management (Rongioletti & Rebora, 2001; Rongioletti et al., 2013). REM shares common clinical and histopathological features with a variety of chronic erythematous dermatoses - conditions characterized by persistent redness and inflammation of the skin. As a result, distinguishing REM from other similar disorders requires a thorough and systematic approach (Gasior-Chrzan & Husebekk, 2004; Almohssen et al., 2019). This case underscores the critical importance of including REM in the differential diagnosis when assessing patients with chronic erythematous skin conditions. It also highlights the value of integrating clinical observations with histopathological findings - such as biopsy results and the presence of specific patterns of mucin deposition and lymphocytic infiltration - to provide a more precise diagnosis. By combining these elements, clinicians can optimize treatment strategies, leading to better outcomes for patients and minimizing the risk of misdiagnosis or ineffective treatment plans.

Conclusion: Effective management of REM requires an adaptable, evidence-based approach. This case contributes to the dermatological literature by detailing the successful diagnosis and management of a rare condition, highlighting the importance of tailored therapeutic strategies in achieving disease control and patient satisfaction.

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