CASE REPORT

Early scleromyxedema with granulomatous histology mimicking generalized granuloma annulare: a diagnostic hurdle

Naajeda Mohamed Jiffry[1], **Dimuthu Edussuriya**[1], **Madhava Hettiarachchi**[1]

[1]District General Hospital, Nuwara Eliya, Sri Lanka.

Correspondence: Naajeda Mohamed Jiffry, naajidahjiffry@gmail.com

Abstract

Scleromyxedema is a rare primary cutaneous mucinosis characterized by generalized waxy papules, dermal mucin deposition, fibroblast proliferation, and fibrosis, frequently associated with monoclonal gammopathy. Granuloma annulare, in contrast, is a granulomatous dermatosis that may present with annular papules and plaques and is typically self-limiting. Diagnostic differentiation between these entities relies heavily on clinicopathologic correlation; however, overlap patterns may pose significant diagnostic challenges. We report a 77-year-old woman with multiple comorbidities presenting with a four-month history of mildly pruritic, erythematous, waxy papules arranged in linear arrays over the neck, trunk, forearms, and thighs. Initial clinical assessment favored generalized granuloma annulare. Histopathological examination demonstrated granulomatous inflammation in the papillary dermis without significant fibroblast proliferation or mucin deposition, suggestive of granuloma annulare.

The patient initially responded to topical corticosteroids and narrowband ultraviolet B phototherapy, but later experienced disease recurrence with scleroderma and swallowing difficulty, prompting reconsideration of a granulomatous variant of scleromyxedema. Further investigations, including serum protein electrophoresis and immunofixation, were initiated to evaluate for monoclonal gammopathy. This case highlights the diagnostic complexity arising from histopathological overlap between generalized granuloma annulare and granulomatous variants of scleromyxedema. Recognition of atypical clinical progression and treatment resistance is essential to avoid delayed diagnosis of scleromyxedema, a condition with potential systemic implications requiring early systemic therapy.

Keywords: scleromyxedema; clinicopathologic correlation; granuloma annulare; cutaneous mucinosis; granulomatous variant

Conflicts of Interest: None declared

Funding: None

Copyright: This is an open-access article under the terms of the Creative Commons Attribution Non-Commercial 4.0 International (CC BY-NC 4.0), which permits non-commercial use and distribution in any medium, provided the original work is properly cited, and no modifications or adaptations are made.

© 2026 The Authors. Sri Lanka Journal of Dermatology is the official publication of the Sri Lanka College of Dermatology and Aesthetic Medicine

Received: 01 April 2026 Revised: 29 April 2026 Accepted: 01 May 2026

How to cite this article: Jiffry NM, Edussuriya D, Hettiarachchi M. Early scleromyxedema with granulomatous histology mimicking generalized granuloma annulare: a diagnostic hurdle. Sri Lanka J Dermatol. 2026;25(1):101-104. doi: https://doi.org/10.4038/sljd.v25i1.401

Introduction

Scleromyxedema is a rare, chronic, primary cutaneous mucinosis characterized by a generalized, papular, and sclerodermoid cutaneous eruption that usually occurs in association with monoclonal gammopathy. It usually affects middle-aged adults with no race or sex predominance.[1] Affected patients develop numerous waxy, firm plaques and papules involving the hands, forearms, head, neck, upper trunk, and thighs. Papules are usually arranged in a notable linear array, and the surrounding skin is usually shiny and indurated. With progression of the lesions, erythematous plaques may present with sclerotic features (sclerodactyly, decreased motility of the hands and mouth, and skin stiffening).[2] Extracutaneous manifestations are possible, with involvement of the cardiovascular (congestive heart failure, myocardial ischemia, heart block), gastrointestinal (dysphagia), pulmonary (dyspnea), musculoskeletal, renal (acute renal failure), or nervous systems (peripheral neuropathy, carpal tunnel syndrome, dermato-neuro syndrome).[1,2]

The pathogenesis of this condition is unknown, but the main hypothesis centers around circulating cytokines (interleukin 1 (IL-1), tumor necrosis factor (TNF)-alpha, transforming growth factor (TGF)-beta) that are known to stimulate fibroblast proliferation and glycosaminoglycan synthesis in the skin.[2]

On the other hand, generalized granuloma annulare, an often self-limiting condition, which accounts for 15% of cases of granuloma annulare, occurring more frequently in adults with a female predominance, usually presents with widespread skin-colored or erythematous plaques and papules, with annular plaques occurring in two-thirds of patients.[3] The trunk and extremities are typical sites of presentation. Potential associations include diabetes mellitus, dyslipidemia, and exposure to certain drugs. Similar to scleromyxedema, the cause of granuloma annulare is unknown, but a variety of potential triggering factors have been reported, including drug exposure, viral infections, malignancies, and vaccinations, among others. Familial cases have been witnessed, and whether genetics influences susceptibility is uncertain.

Mainstay of diagnosis in both cases is based on histopathology; granuloma annulare showcases an interstitial or palisading pattern of lymphohistiocytic infiltrate and a necrobiotic degeneration of collagen; scleromyxedema is characterized by a triad of features including increased fibroblast proliferation, mucin deposition, and fibrosis.[2,3,4]

The pivotal point of our case report centers around one singular finding, which is that an interstitial, granuloma annulare-like pattern has been described in cutaneous biopsy specimens in patients with scleromyxedema, occurring in approximately 25% of cases.[2,5]

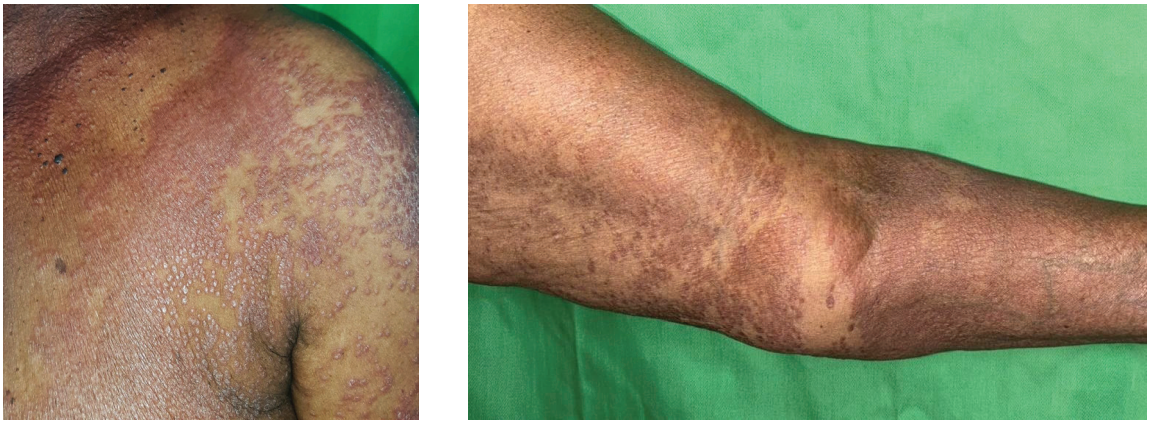
Case Presentation

This report describes a 77-year-old woman, a known patient with an eight-year history of Type 2 Diabetes Mellitus, Hypertension, and Bronchial Asthma. She presented to us with four-month history of mildly pruritic erythematous, papular, waxy, closely packed lesions in linear arrays, involving her neck, upper back, chest, forearms, and thighs (Figure 1A, B). No significant skin thickening was noted with facial involvement initially. She demonstrated no further neurological, rheumatological, gastrointestinal, or cardiovascular symptoms.

On further evaluation, she had a normal blood count, TSH, and metabolic panel, with raised ESR of 40 mm/hr. LDH levels were normal, and the blood picture was unremarkable. Histopathology revealed granulomatous inflammation in the upper dermis with focal areas of necrobiosis. No significant fibroblastic proliferation or intervening mucin was seen, consistent with generalized GA.

Diagnosis and Management: Clinically, we settled on the probable diagnosis of a generalized granuloma annulare, and our initial management focused on local corticosteroid therapy and narrowband ultraviolet B (NB-UVB) phototherapy twice weekly. After having undergone 30 sessions, she demonstrated some clearance of most of her lesions, with subsiding of the surrounding erythema with residual hyperpigmentation. Given her positive response, she was continued on this treatment plan for 30 more sessions, until she developed a flare-up of her condition with findings of scleroderma involving her face and fingers, as well as a systemic complaint of dysphagia.

Based on the new development of scleroderma with difficulty in swallowing and poor response to NB-UVB, a rarer histological variant of interstitial granuloma annulare-like scleromyxedema was considered as a probable diagnosis, and we have begun re-evaluating her for this condition. This was initially not considered, given the lack of clinical sclerodermoid features and the absence of significant fibroblast proliferation and mucin deposition on histopathology. Consequently, repeat skin biopsy showed mucin deposition and fibrosis of the dermis, in addition to the interstitial granulomatous-like pattern, and arrangements are underway for a serum/urine protein electrophoresis (SPEP) and immunofixation to evaluate for an associated monoclonal gammopathy, which would help solidify a diagnosis of granulomatous variant of scleromyxedema, and thereby initiate necessary management (Figure 2).



A B

Figure 1. Erythematous, papular, waxy lesions closely packed in linear arrays over the (A) chest and (B) upper limb.

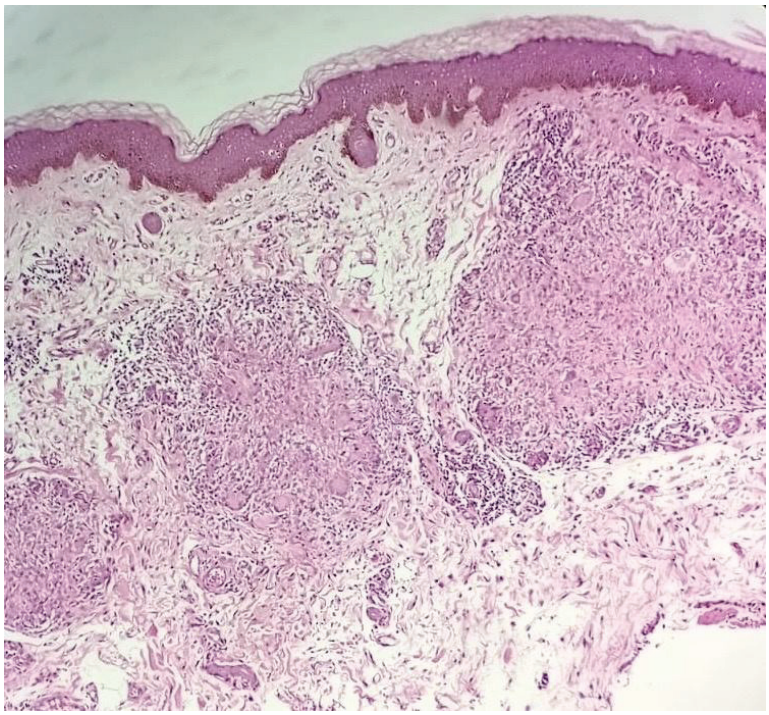


Figure 2. Papillary dermis reveals focal areas of necrobiosis with a palisade of histiocytes and giant cells with associated mucinosis and dermal fibrosis (H&E, ×10).

Discussion

The diagnosis of scleromyxedema is based on established clinicopathologic criteria, which include generalized papular and sclerodermoid eruptions, the characteristic microscopic triad of mucin deposition, fibroblast proliferation, and fibrosis (or less commonly an interstitial granuloma annulare–like pattern as seen in our case), the presence of monoclonal gammopathy, and the absence of thyroid disease.[2,4]

Granulomatous variants of scleromyxedema are uncommon but have been described in the literature, where the histological pattern may resemble granuloma annulare and pose a potential diagnostic pitfall.[1,5] Histopathology alone may be insufficient to distinguish these entities, particularly when scleromyxedema presents with an interstitial granuloma annulare-like pattern. Careful clinico-pathologic correlation and appropriate systemic evaluation, including screening for monoclonal gammopathy, are therefore essential. The preferred initial therapy is systemic treatment with intravenous immunoglobulin (IVIG).[1] IVIG efficacy stems from its neutralization of circulating autoantibodies by anti-idiotype antibodies and inhibiting fibrosis via cytokine modulation.[2]

Conclusion

This case underscores the importance of maintaining a high index of suspicion when evaluating generalized papular eruptions with overlapping clinical and histopathological features. Although granuloma annulare is typically benign and self-limiting, the presence of waxy papules arranged in linear arrays, incomplete therapeutic response, and disease recurrence should prompt reconsideration of alternative diagnoses such as granulomatous variants of scleromyxedema. Early recognition is crucial, as scleromyxedema carries potential systemic morbidity and requires fundamentally different management strategies, including systemic immunomodulatory therapy such as intravenous immunoglobulin.

Ethics statement

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical images.

Authors' contribution

NMJ and DKE collected clinical data and drafted the manuscript. MH analyzed the histopathological findings. All authors reviewed and approved the final manuscript.

References

1. Rongioletti F, Merlo G, Cinotti E, Fausti V, Cozzani E, Cribier B, et al. Scleromyxedema: a multicenter study of characteristics, comorbidities, course, and therapy in 30 patients. J Am Acad Dermatol. 2013;69(1):66–72. doi: 10.1016/j.jaad.2013.01.007.
2. Rongioletti F. Scleromyxedema. In: UpToDate [Internet]. Waltham (MA): UpToDate Inc; 2025 [updated 2025; cited 2026 Apr 29]. Available from: https://www.uptodate.com/contents/scleromyxedema.
3. Brodell RT. Granuloma annulare: epidemiology, clinical manifestations, and diagnosis. In: UpToDate [Internet]. Waltham (MA): UpToDate Inc; 2025 [updated 2025 Jan 28; cited 2026 Apr 29]. Available from: https://www.uptodate.com/contents/granuloma-annulare-epidemiology-clinical-manifestations-and-diagnosis.
4. Rongioletti F, Merlo G, Carli C, Cribier B, Metze D, Calonje E, et al. Histopathologic characteristics of scleromyxedema: a study of a series of 34 cases. J Am Acad Dermatol. 2016;74(6):1194–200. doi: 10.1016/j.jaad.2015.12.021.
5. Stetsenko GY, Vary JC, Olerud JE, Argenyi ZB. Unusual granulomatous variant of scleromyxedema. J Am Acad Dermatol. 2008;59(2):346–9. doi: 10.1016/j.jaad.2008.04.017.