Multifactorial Dermatitis in an Elderly Patient with Chronic Actinic Dermatitis: A Case Report

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Citation : Sunardi H, Sutedja G. Multifactorial Dermatitis in an Elderly Patient with Chronic Actinic Dermatitis: A Case Report. Medicinus. 2025 February; 14(2): 168-173.
Keywords: Chronic actinic dermatitis; elderly; Photodermatosis; UV exposure
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Online First : February 2025

Abstract

Background : Chronic actinic dermatitis (CAD) is a rare, persistent photodermatosis triggered by UV and visible light, primarily affecting elderly individuals. With multifactorial etiologies, including genetic predisposition, environmental exposure, and comorbidities, CAD significantly impacts quality of life. This case report presents an elderly farmer with CAD, emphasizing the complexities of diagnosis and management in individuals exposed to high levels of sunlight due to occupational factors.

Methods : A 70-year-old male farmer presented with a two-week history of pruritus and burning sensations on his face, exacerbated by sun exposure. He had a history of seborrheic dermatitis and hypertension. Physical examination revealed erythematous, hyperpigmented plaques on sun-exposed areas, with macular erythema, erosion, and lichenification. The working diagnosis was CAD, with actinic prurigo and cutaneous T-cell lymphoma as differentials. Management included methylprednisolone, cetirizine, and a compounded cream containing clobetasol propionate and gentamicin. Preventive measures, such as the use of moisturizers, sunblock, and UV avoidance, were also emphasized. The prognosis was favorable for life and function but uncertain for complete remission due to CAD's chronic nature.

Conclusions : This case underscores the importance of an integrated approach combining pharmacological treatment and preventive strategies to manage CAD effectively. Tailored interventions addressing occupational and environmental risk factors are vital. Diagnostic limitations highlight the necessity for follow-up and the development of enhanced diagnostic tools. CAD management requires multidisciplinary collaboration to optimize patient outcomes.

Introduction

Chronic actinic dermatitis (CAD) is a rare and persistent inflammatory skin condition characterized by an abnormal sensitivity to ultraviolet (UV) and visible light, often manifesting as eczematous lesions in sun-exposed areas.1 It is most frequently observed in elderly individuals and is associated with significant morbidity, impacting their quality of life. Multifactorial in nature, CAD may result from a complex interplay of genetic predisposition, environmental exposure, and underlying comorbidities such as seborrheic dermatitis or other photosensitive disorders.[2]

In agricultural populations, such as farmers, chronic exposure to sunlight is a

critical contributing factor to the development and exacerbation of CAD.[3] The condition can present diagnostic challenges due to overlapping features with other dermatological disorders, including actinic prurigo and cutaneous T-cell lymphoma, necessitating careful clinical evaluation and differentiation.[2]

This case report discusses an elderly male farmer presenting with multifactorial dermatitis primarily manifesting as chronic actinic dermatitis. The report highlights the clinical presentation, diagnostic approach, and comprehensive management, including pharmacological and non-pharmacological strategies, while addressing the patient's unique environmental and occupational risk factors. The aim is to provide insights into the complexities of managing CAD in elderly patients with multifactorial dermatological conditions.

Case Description

Mr. E, a 70-year-old male born on October 5, 1952, worked as a farm laborer and resided in Pakancilan. He was a Muslim of Sundanese ethnicity and was married. The patient presented to the dermatology and venereology clinic with a chief complaint of itching and a burning sensation on his face that had persisted for two weeks. The symptoms initially appeared on the nape of his neck and subsequently spread to his face and arms. The itching reportedly worsened with sun exposure.

The patient had a history of seborrheic dermatitis, which was previously treated at the dermatology clinic of RSUD Ciawi with improvement. He also had a history of hypertension and had been treated at the emergency department of RSUD Ciawi for headaches accompanied by itching and peeling skin. No similar complaints were reported among his family members. The patient mentioned that he had received medication from a general practitioner in the past but was unaware of the specific medications prescribed.

As a farmer, the patient frequently engaged in outdoor activities. His home environment was well-maintained, with daily cleaning, and he maintained good social relationships with both his family and neighbors. On physical examination, he appeared moderately ill. His consciousness level was compos mentis with a Glasgow Coma Scale (GCS) score of 15 (E4M6V5). He had an elevated blood pressure of 160/100 mmHg, a heart rate of 90 beats per minute, regular and adequately filled, a respiratory rate of 20 breaths per minute, and a body temperature of 36.6°C.

The skin examination revealed multiple lesions localized to the face and left elbow, distributed regionally. The lesions were irregular in shape, erythematous, and hyperpigmented. They appeared as plaques with undefined borders and a dry surface. The primary efflorescence

observed was macular erythema, while secondary changes included erosion and lichenification.

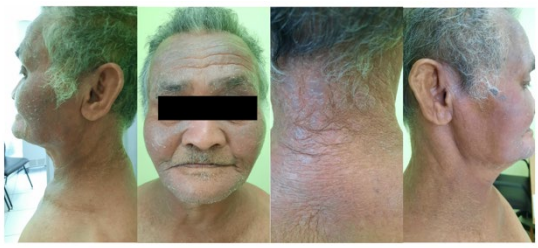

Figure 1. Physical examination of the face.

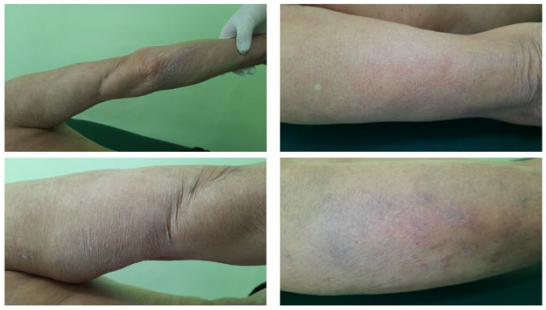

Figure 2. Physical examination of the extremity.

The working diagnosis for this patient was chronic actinic dermatitis. Differential diagnoses considered included actinic prurigo and cutaneous T-cell lymphoma. Treatment was initiated, including methylprednisolone (2x8 mg), cetirizine (10 mg), and a compounded cream containing clobetasol propionate and gentamicin. Non-pharmacological interventions included educating the patient about his condition, advising the use of moisturizers after bathing, and providing guidance on the correct use of medications. The patient was also advised to avoid scratching, maintain good hygiene, and minimize exposure to sunlight by using sunblock.

The patient's clinical condition was scheduled for monitoring to evaluate symptomatic improvement. The prognosis was considered good for life (ad vitam) and function (ad functionam), but uncertain to poor for complete recovery (ad sanationam).

Discussion

Chronic actinic dermatitis (CAD) is a chronic immune-mediated photodermatosis, predominantly affecting males aged 50 to 60, with an estimated prevalence of 0.5–2% in dermatology referrals. It arises from abnormal photosensitivity to UV light, predominantly UVB, with occasional sensitivity to UVA and visible light.[2] The pathogenesis involves an immunologically mediated reaction, resulting in eczematous inflammation on sun-exposed areas, such as the face, neck, and forearms, sparing skin folds and creases. Clinically, CAD presents as pruritic, lichenified plaques with erythema and hyperpigmentation, resembling chronic eczema, significantly impairing quality of life.[4] Diagnosis relies on phototesting to assess photosensitivity and patch testing to exclude contact allergies.[5] Management emphasizes strict photoprotection, with topical corticosteroids and emollients serving as primary therapies, while refractory cases may require systemic immunosuppressants like corticosteroids,

azathioprine, or cyclosporin. Emerging therapies, including mycophenolate mofetil (MMF), have demonstrated efficacy in improving symptoms without major adverse effects. CAD's impact extends beyond physical symptoms; persistent pruritus often disrupts daily functioning and psychological well-being.[5]

Strengths and limitations in the approach to the case

The management of the patient's condition demonstrated several strengths, including a meticulous clinical evaluation and an extensive history-taking process. By incorporating the patient's occupational, lifestyle, and environmental factors, an accurate working diagnosis of chronic actinic dermatitis was established. The treatment strategy was comprehensive, integrating both pharmacological interventions—such as anti-inflammatory agents, antipruritic medications, and infection control—and non-pharmacological measures, emphasizing lifestyle adjustments and preventive education, particularly regarding photoprotection and the use of sunblock.

Nonetheless, notable limitations were present. The absence of confirmatory diagnostic tools, such as photopatch testing or histopathological examination, restricted the precision of the diagnosis and the ability to definitively exclude alternative conditions like cutaneous T-cell lymphoma.[6] Furthermore, the absence of extended follow-up data limited the assessment of therapeutic efficacy and the potential for sustained remission. The patient's limited knowledge of prior treatments also hindered a comprehensive understanding of previous management and potential medication-related sensitivities.[7]

Discussion of the relevant medical literature

Chronic actinic dermatitis (CAD) is a complex photodermatosis triggered by hypersensitivity to ultraviolet (UV) light, commonly seen in older individuals with extensive UV exposure, particularly in outdoor occupations such as farming. The characteristic manifestations of CAD—erythematous, lichenified plaques predominantly on UV-exposed areas—closely aligned with the clinical presentation in this case.[8] The literature underscores the critical role of cumulative UV exposure and individual predispositions in the etiopathogenesis of CAD.

Evidence-based management of CAD encompasses the use of potent topical corticosteroids, systemic antihistamines, and stringent photoprotection protocols. The therapeutic regimen employed, which included methylprednisolone and clobetasol propionate cream, reflects standard clinical practice for mitigating inflammation and immune-mediated skin responses.[9] Adjunctive non-pharmacological measures, such as

emollients and rigorous avoidance of sun exposure, are pivotal for sustainable disease control. Patient adherence to photoprotective strategies, as supported by studies, is a key determinant of long-term outcomes.[10–12]

Differential diagnoses, including actinic prurigo and cutaneous T-cell lymphoma, were judiciously considered. Actinic prurigo, which often presents with similar clinical features, typically exhibits a familial predisposition and requires distinct therapeutic strategies.[13] Conversely, cutaneous T-cell lymphoma, although rare, necessitates histological confirmation due to its overlapping clinical presentation with CAD.

The rationale for the conclusions

The diagnosis of chronic actinic dermatitis was substantiated by the patient's clinical presentation, occupational background, and favorable response to initial therapy. The use of systemic corticosteroids and antihistamines effectively addressed inflammation and pruritus, while topical clobetasol propionate provided targeted treatment for localized lesions.[14] Gentamicin served to mitigate the risk of secondary bacterial infections.[15] Preventive education on UV avoidance and the application of sunblock fortified the overall management plan.[16]

The prognosis was assessed as favorable for life and functionality due to the absence of systemic involvement and the efficacy of initial symptom management. However, the uncertain prognosis for complete remission underscores the chronic, recurrent nature of CAD, which is heavily influenced by ongoing UV exposure and patient adherence to preventive measures.[2,13]

The primary "take-away" lessons

This case highlights the necessity of a multidisciplinary approach in the management of chronic actinic dermatitis, particularly in elderly patients with significant UV exposure. A comprehensive patient history and educational intervention are as crucial as pharmacological management in achieving disease control. Photoprotection remains a cornerstone of therapy, underscoring the importance of preventive strategies in mitigating disease progression and enhancing the patient's quality of life. Diagnostic limitations emphasize the need for ongoing follow-up to evaluate treatment efficacy and manage recurrent disease effectively.

Conclusion

This case report highlights chronic actinic dermatitis as a multifactorial condition requiring a multidisciplinary approach. The integration of patient history, thorough clinical examination, and targeted treatment resulted in symptomatic improvement and effective disease control.

The findings emphasize the importance of photoprotection, preventive education, and tailored pharmacological therapy in managing chronic photodermatoses, particularly in occupational settings with high UV exposure. Future research should prioritize the development of diagnostic tools and long-term follow-up strategies to enhance patient outcomes and establish standardized care protocols.

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