CASE REPORT

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Spectrum and Clinical Patterns of Hand Dermatoses: A Case Report

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Abstract

Hand dermatoses comprise a heterogeneous group of dermatological conditions affecting the hands, often resulting from frequent exposure to environmental irritants, allergens, and occupational factors. These conditions commonly include irritant and allergic contact dermatitis, dyshidrotic eczema, psoriasis, and fungal infections, and are characterized by overlapping clinical features such as erythema, scaling, fissuring, hyperkeratosis, and vesiculation, making diagnosis challenging. We report a case of a 32-year-old female who presented with a four-month history of persistent bilateral hand lesions that initially began as dryness and erythema and progressively evolved into scaling, painful fissures, and vesicular eruptions, particularly following exposure to water and detergents. Clinical examination revealed mixed morphological patterns involving dorsal, palmar, and interdigital regions. Based on clinical findings, a provisional diagnosis of chronic hand dermatosis with mixed morphology predominantly irritant contact dermatitis with a dyshidrotic component was made. Differential diagnoses included allergic contact dermatitis, palmoplantar psoriasis, and dermatophytosis; however, potassium hydroxide examination was negative for fungal elements. The patient was managed with topical corticosteroids, emollients, and oral antihistamines, along with counseling on avoidance of irritants and use of protective measures. Significant improvement was observed over a four-week follow-up period, although mild relapses persisted, reflecting the chronic and recurrent nature of the condition. This case highlights the diverse clinical spectrum and diagnostic complexity of hand dermatoses and emphasizes the importance of a systematic approach combining clinical evaluation, identification of triggering factors, and both therapeutic and preventive strategies for optimal management.

Keywords: Hand dermatoses; Contact dermatitis; Dyshidrotic eczema; Occupational exposure; Case report; Skin disorders

Introduction

Hand dermatoses, a highly heterogeneous group of skin diseases affecting the hands (2), constitute an important cause of dermatological consultations worldwide, with an exact number not being available. The hands are especially prone to various dermatological conditions such as irritant contact dermatitis, allergic contact dermatitis, atopic dermatitis, psoriasis, fungal infections and dyshidrotic eczema owing to their frequent contact with environmental irritants, allergens and occupational factors (2;3). Contact dermatitis continues to be the most common etiology from them, particularly in individuals in occupations with regular exposure to chemicals or wet work (4).

Clinically, hand dermatoses may present with a varying degree of erythema, scaling, vesiculation and fissuring, hyperkeratosis and lichenification having overlapping features that pose diagnostic challenges5.

Chronic and recurrent forms are often associated with major functional impairment, discomfort, and poor quality of life especially in cases with palmoplantar or interdigital lesions[6]. Moreover, the recent changes in sanitary practices with hand washing and sanitizer application have also been contributing to the increased prevalence of irritant hand dermatitis (7).

For accurate diagnosis, a detailed clinical history should be taken, including occupational exposure (8), personal or family history of atopy and aggravating factors (9, 10) together with careful physical examination. In a limited number of occasions, other examinations like patch tests, dermoscopy or microbiological studies will be needed to establish the different etiology (9). It is important to identify and manage such cases early to avoid chronicity and complications. This case report discusses the variety of hand dermatoses, and their clinical patterns as seen in one patient, demonstrates its diagnostic complexity, and reaffirms a systematic evaluation approach that involves a multidisciplinary effort towards diagnosis and management (10).

Case presentation

A 32-year-old female patient reported to the dermatology outpatient department with a complaint of persistent lesions over both hands for the last 4 months. The initial presentation was mild dryness and erythema of the dorsal surfaces of the hands that eventually progressed to involve the palms and interdigital webs. The patient subsequently developed itching, scaling, painful fissuring and vesicular eruptions, particularly after exposure to water and detergents. The symptoms were recurrent and improved partially and transiently with over the counter topical medications.The patient was a housewife who had regularly worked with cleaning agents, soaps and detergents without wearing protective gloves. No similar lesions had been previously reported on the rest of the body and there was no previous diagnosis of psoriasis or fungal infections. However, she had a personal history of atopy manifesting as allergic rhinitis. Family history was unremarkable as to dermatological diseases. Clinical examination revealed multiple morphological patterns in bilateral hands. The dorsal surfaces showed erythema, scaling and patches of lichenification; the palmar aspects were hyperkeratosic with deep fissuring. The interdigital spaces showed signs of maceration and mild erythema. There were few vesicular lesions on the lateral sides of the fingers, consistent with a dyshidrotic component. No nails changes, such as pitting or onycholysis. There were no lesions elsewhere on the body.

Figure 1: Irritant contact dermatitis

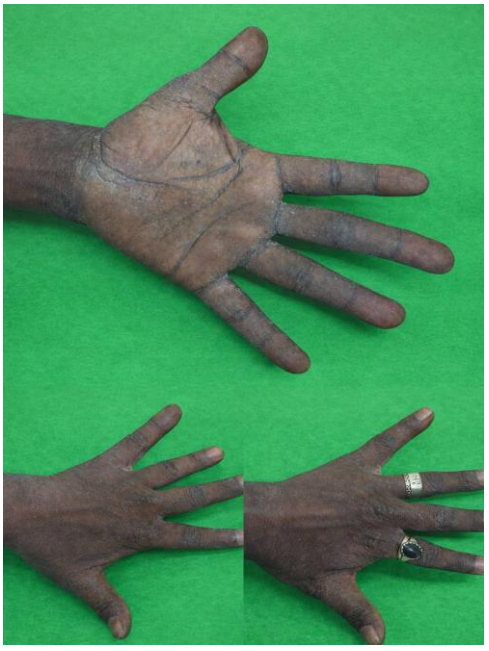

Figure 2: Allergic contact dermatitis to cement

The clinical findings suggested a provisional diagnosis of chronic hand dermatosis with mixed morphology, most likely irritant contact dermatitis with features of dyshidrotic eczema (1,2). Other diagnoses considered were allergic contact dermatitis, palmoplantar psoriasis, and dermatophytosis (3). For further assessment of the condition, potassium hydroxide (KOH) mount from skin scrapings was done and found negative for fungal elements. A patch test was recommended to exclude allergic contact dermatitis; however, the patient deferred this for logistical reasons.

Management included high-potency topical corticosteroids for limited periods of application, emollients to restore the skin barrier, and oral antihistamines for symptomatic control (4). She was advised at length about avoidance of insults, application of protective gloves while working with wet items and a strict regimen of moisturization. The mean score for erythema, scaling and fissuring was significantly improved over a follow-up period of 4 weeks with reduction in pruritus. Nonetheless, mild dryness and occasional flare-ups remained, revealing the chronicity and relapsing nature of the disease (5). This case illustrates the heterogeneous clinical spectrum of hand dermatoses on the same patient and reasserts the importance of identifying mixed sonography patterns, triggering factors, and adopting both pharmacological and preventive measures as part of an integral treatment (6).

Discussion

Hand dermatoses are a frequently encountered but diagnostically challenging group of dermatological diseases, owing to their heterogeneous clinical presentation and diverse etiologic factors (1). One of the primary differential diagnoses in patients with a chronic hand dermatitis is that of eczema verrucosa, which is characterized by mixed morphological patterns consisting of erythema, scaling, fissuring/hyperkeratosis and vesiculation frequently seen in palmar surface involvement (2). This overlap can complicate the distinction between irritant contact dermatitis, allergic contact dermatitis, and endogenous eczema and therefore requires an in-depth clinical assessment. Chronic irritant contact dermatitis is one of the most common causes of hand dermatoses, especially among persons who have repeated exposure to wet work, detergents and chemical agents, as in this patient (3). Consecutive breakage of the skin barrier leads to enhanced transepidermal water loss and easier penetration of irritants, inflammation and chronic changes of the skin as lichenification and fissuring (4). The patient's exposure as a homemaker along with repeated contact with cleaning agents further favors an irritant etiology.

In this case the presence of vesicular lesions coursing along the lateral aspects of the fingers also suggests a dyshidrotic (pompholyx) component that commonly occurs in those with atopic predisposition and may coexist with contact dermatitis (5). The patient's history of allergic rhinitis suggests an atopic background, a known risk factor for chronic and recurrent hand eczema (6). The interaction of external irritants and internal sensitivity in dermatoses portrays the essential pathophysiology. Such a large differential diagnosis with respect to such cases is allergic contact dermatitis, palmoplantar psoriasis, and dermatophytosis (7). While patch testing is the gold standard for confirming allergic sensitizers, it was not performed in this case and represents a limitation to making a definitive diagnosis (8). Likewise, the lack of fungal components on KOH evaluation helped rule out dermatophytosis. Clinical features including lack of well-demarcated plaques and nail changes rendered psoriasis less likely.

The hands typically have a challenging treatment due to the need for both symptom management and prevention of recurrence (9). Topical corticosteroids are still the mainstay of therapy to decrease inflammation, while emollients also play an essential role in restoring skin barrier function (10). Education of patients on avoiding irritants and protective measures (eg, wearing gloves during wet work) is also essential to achieving long-term disease control (11). In this particular patient, the judicious use of appropriate therapy coupled with behavioral changes led to marked clinical improvement, albeit with mild relapsing courses consistent with the chronic's relapsing nature.

This case highlights the spectrum and overlapped clinical patterns of hand dermatoses in a single patient. Accurate diagnosis and effective management of this condition require a detailed history, meticulous clinical examination, and judicious use of diagnostic modalities. The rise of NCDs coupled with the number of individuals affected by these diseases highlights a need for early intervention and preventive strategies that can substantially reduce disease burden and improve quality of life (12).

Summary

In displaying multiple different morphological patterns such as erythema, scaling, fissuring, hyperkeratosis and vesiculation in one patient this case report illustrates the heterogeneous clinical presentation of hand dermatosis. The pathophysiologic factors that contribute to development of the long-standing recalcitrant nature of this complaint are multiple and involve a combination of repeated exposure to irritants and a predisposition to atopy. This case highlights the challenges in establishing a diagnosis with overlapping clinical features of irritant contact dermatitis and dyshidrotic eczema, requiring an extensive clinical assessment along with other differential diagnoses. Entering balance with topical corticosteroids and emollients, as well as avoidance of triggers, led to notable clinical improvement, but slight relapses continued.

Conclusion

Hand dermatoses are commonly encountered yet target a range of different clinical presentations with overlapping features, making the diagnosis challenging. The case provides insight into the importance of recognizing contributory factors (occupational exposure and atopic background) influencing diagnosis and management. The early diagnosis may help control symptoms and decrease recurrences when proper therapeutic measures are instituted along with preventive education. An organized and personalized approach is essential for enhancing the patients' results and quality of life in chronic hand dermatoses.

Declaration

Consent: Written informed consent was obtained from the patient. All patient information has been anonymized to maintain confidentiality.

Conflict of Interest: Nil

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