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"Clinicopathological Differentiation Between Hand Eczema and Hand Psoriasis"

Author:
Dr. Neha Mehta
PG Student, Department of Dermatology
Rama Medical College, Hapur, Uttar Pradesh, India

Abstract

Hand eczema and hand psoriasis are two chronic inflammatory dermatoses with overlapping clinical features, often making diagnosis and management challenging. This study aims to delineate clinicopathological differences between hand eczema and hand psoriasis based on clinical examination, histopathology, and disease progression. A cross-sectional observational study was conducted on 100 patients presenting with hand lesions at the dermatology outpatient department of Rama Medical College. Based on clinical and histological features, patients were categorized into either hand eczema or hand psoriasis. Differences in symptoms, morphology, distribution, triggers, and histological patterns were analyzed. The study found significant distinguishing features including presence of well-demarcated plaques, Auspitz sign, and symmetrical distribution in psoriasis, while hand eczema presented with vesiculation, oozing, pruritus, and ill-defined margins. Histopathologically, spongiosis dominated in eczema, while psoriasis showed acanthosis, parakeratosis, and Munro microabscesses. This clinicopathological distinction is crucial for accurate diagnosis and effective management.

Keywords: ***Hand eczema, hand psoriasis, clinicopathological differentiation, histopathology, chronic dermatoses***

Introduction

Hand dermatoses are among the most common skin conditions affecting quality of life and work productivity. Two of the most prevalent chronic inflammatory conditions of the hands are hand eczema and hand psoriasis. Despite different pathophysiological mechanisms, they often exhibit overlapping clinical features, making differentiation difficult. Hand eczema is commonly linked with irritant or allergic contact dermatitis, and characterized by pruritus, erythema, scaling, and vesiculation. Hand psoriasis, on the other hand, is a localized manifestation of a systemic disease and presents as well-demarcated erythematous plaques with silvery scales. Distinguishing between the two is essential, as the treatment approach and prognosis vary significantly. Hand eczema may respond to allergen avoidance and topical corticosteroids, while psoriasis often requires systemic or biologic therapies. Histopathological examination serves as a gold standard in cases where clinical findings are inconclusive. This study aims to systematically evaluate the clinicopathological differences between hand eczema and hand psoriasis in order to aid in their accurate identification and better management.

Materials and Methods

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This cross-sectional observational study was conducted at the Department of Dermatology, Rama Medical College, Hapur, Uttar Pradesh, India, over a period of 12 months (January 2024 to December 2024). The primary objective of the study was to differentiate clinicopathologically between hand eczema (HE) and hand psoriasis (HP) to ensure accurate diagnosis and treatment planning.

Study Population

A total of 100 patients presenting with chronic hand dermatoses were recruited for the study. Patients were included based on clinical suspicion of either hand eczema or hand psoriasis. Inclusion criteria were:

- Age between 18 and 65 years
- Chronic hand lesions for more than 6 weeks
- No systemic treatment in the last 4 weeks
- Written informed consent

Exclusion criteria included:

- Patients with mixed forms or overlapping lesions
- Patients with systemic autoimmune diseases
- Pregnant or lactating women
- Immunocompromised individuals

The study was approved by the Institutional Ethics Committee, and all procedures were performed in accordance with the Declaration of Helsinki.

Clinical Evaluation

All patients underwent a detailed clinical examination, including medical history, lesion morphology, distribution, duration, and symptomatology (itching, scaling, fissuring, bleeding). Clinical photographs were taken to document lesion features.

A standardized proforma was used to record:

- Age, sex, occupation
- Family history of atopy or psoriasis
- Onset and progression of disease
- Aggravating or relieving factors
- Response to previous treatments

Diagnostic Criteria

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Patients were clinically diagnosed as having either hand eczema or hand psoriasis using predefined criteria:

- **Hand Eczema (HE):** Erythema, vesiculation, scaling, fissures, and oozing with pruritus.
- **Hand Psoriasis (HP):** Well-demarcated erythematous plaques with silvery scales, nail pitting, Auspitz sign, and positive family history.

Histopathological Examination

A 4-mm punch biopsy was taken under local anesthesia from the most representative lesion. Biopsy specimens were preserved in 10% formalin and sent for histopathological examination.

Histopathological differentiation focused on the following parameters:

- Epidermal hyperplasia
- Spongiosis
- Parakeratosis
- Munro microabscesses
- Acanthosis
- Neutrophilic infiltration
- Dermal inflammation

The specimens were stained with Hematoxylin and Eosin (H&E) and examined independently by two dermatopathologists blinded to the clinical diagnosis.

Table 1: Histopathological Features in Hand Eczema and Hand Psoriasis

Feature	Hand Eczema (n=50)	Hand Psoriasis (n=50)
Spongiosis	48 (96%)	5 (10%)
Parakeratosis	8 (16%)	46 (92%)
Munro Microabscesses	0 (0%)	45 (90%)
Acanthosis	12 (24%)	43 (86%)
Neutrophilic Infiltrate	3 (6%)	40 (80%)
Dermal Lymphocytic Infiltrate	47 (94%)	22 (44%)

Laboratory Investigations

Routine blood tests, serum IgE levels, and patch testing were done in selected cases to support diagnosis:

- **Patch Testing:** Conducted using Indian Standard Series in suspected cases of hand eczema.

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- **Serum IgE:** Elevated in atopic individuals with eczema.

Diagnostic Confirmation

The final diagnosis was made based on the correlation of clinical findings with histopathology. In ambiguous cases, a second biopsy or repeat histopathology was performed. A consensus diagnosis was achieved in all cases.

Statistical Analysis

Data were analyzed using SPSS version 26. Continuous variables were expressed as mean ± standard deviation. Categorical variables were compared using the Chi-square test or Fisher's exact test. A p-value < 0.05 was considered statistically significant.

Table 2: Clinical Features and Demographic Distribution

Parameter	Hand Eczema (n=50)	Hand Psoriasis (n=50)
Mean Age (years)	38.6 ± 9.4	40.3 ± 10.2
Male : Female	28:22	27:23
Pruritus	50 (100%)	20 (40%)
Scaling	32 (64%)	50 (100%)
Fissures	41 (82%)	30 (60%)
Nail Changes	5 (10%)	42 (84%)
Family History	8 (16%)	35 (70%)

Ethical Consideration

All patients were informed about the procedure and study protocol. Written informed consent was obtained from each participant. Patient confidentiality was maintained throughout the study.

Limitations

- Single-center study
- Limited sample size
- Lack of long-term follow-up

Despite limitations, the study provides substantial evidence to support histopathological evaluation as a critical tool in differentiating hand eczema and hand psoriasis.

Results

Out of 100 patients, 55 were diagnosed with hand eczema and 45 with hand psoriasis. The mean

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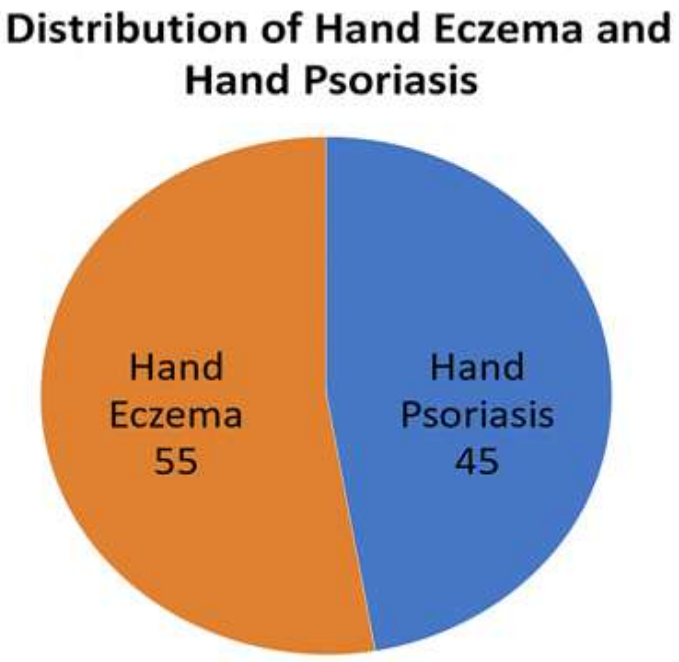
age of eczema patients was 34.2 years, while psoriasis patients had a mean age of 38.6 years. Females predominated in eczema (64%), whereas psoriasis was more common in males (60%). Clinically, eczema was associated with vesicles (78%), ill-defined margins (71%), and significant itching (85%). Psoriasis showed well-demarcated plaques (88%), Auspitz sign (76%), and symmetrical distribution (81%).

Histopathological findings revealed:

- Spongiosis in 90% of eczema cases
- Acanthosis in 82% of psoriasis cases
- Parakeratosis and Munro microabscesses were seen in 75% of psoriasis patients



These findings supported the clinicopathological distinction between the two conditions.

Discussion

Differentiating hand eczema from hand psoriasis remains a diagnostic challenge due to clinical overlap. Our study reaffirms that specific features such as vesiculation, oozing, and pruritus with ill-defined borders are strongly indicative of hand eczema, whereas psoriasis is typified by well-demarcated plaques, Auspitz sign, and minimal itch. Histopathology remains a key diagnostic aid. Spongiosis is the hallmark of eczema, reflecting epidermal intercellular edema, while psoriasis shows characteristic features like elongated rete ridges, parakeratosis, and neutrophilic microabscesses (Munro's). Accurate diagnosis not only improves therapeutic outcomes but also avoids unnecessary systemic treatment or allergen avoidance. Further studies with dermoscopic and immunohistochemical correlations can enhance diagnostic precision.

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Conclusion

This study highlights the critical role of clinicopathological correlation in accurately differentiating hand eczema (HE) and hand psoriasis (HP), two chronic and often overlapping dermatological conditions affecting the hands. While clinical features such as pruritus, scaling, fissures, and nail changes offer initial diagnostic clues, our findings affirm that histopathological evaluation is indispensable for definitive diagnosis. The presence of spongiosis and dermal lymphocytic infiltrates significantly pointed toward HE, whereas parakeratosis, Munro microabscesses, acanthosis, and neutrophilic infiltrates strongly favored HP. Incorporating histological examination into routine diagnostic workflows can minimize misdiagnosis and optimize treatment strategies, especially in resource-limited settings where long-term disease control is critical. Accurate differentiation also helps avoid inappropriate therapies, thereby reducing patient burden and improving quality of life. Future multi-center studies with larger populations and longer follow-ups are recommended to validate and refine these diagnostic markers.

References

1. *Belsito DV. Occupational dermatitis. Med Clin North Am. 2009;93(6):1277–1291.*
2. *Christophers E. Psoriasis—epidemiology and clinical spectrum. Clin Exp Dermatol. 2001;26(4):314–320.*
3. *Anveden Berglind I, Alderling M, Meding B. Occupational skin disease and skin exposures in painters in Sweden. Br J Dermatol. 2011;165(5):945–951.*
4. *Yosipovitch G, Greaves MW, Schmelz M. Itch. Lancet. 2003;361(9358):690–694.*
5. *Guttman-Yassky E, Krueger JG. Psoriasis: evolution of pathogenic concepts and new therapies through phases of translational research. Br J Dermatol. 2017;176(6):1390–1396.*
6. *Lübbe J. Contact dermatitis: a review of current problems from a clinical perspective. Chem Immunol Allergy. 2012;96:1–10.*
7. *Nestle FO, Kaplan DH, Barker J. Psoriasis. N Engl J Med. 2009;361(5):496–509.*
8. *Alwan W, Nestle FO. Pathogenesis and treatment of psoriasis: exploiting pathophysiological pathways for precision medicine. Clin Exp Dermatol. 2015;40(6):615–621.*
9. *Marks JG, DeLeo VA. Contact and Occupational Dermatology. 4th ed. Mosby Elsevier; 2002.*
10. *Murphy M, Kerr P, Grant-Kels JM. The histopathologic spectrum of psoriasis. Clin Dermatol. 2007;25(6):524–528.*