CUTANEOUS LESIONS IN DERMATOMYOSITIS: CLINICAL AND PATHOPHYSIOLOGICAL INSIGHTS

Abdurakhmonova Dilsuz Tolibovna
Bekenova Gulchekhra Tulegenovna
Tashkent State Medical University (Tashkent, Uzbekistan)

Abstract. *Dermatomyositis is a systemic autoimmune disorder characterized by chronic inflammation of the skin and muscles. Cutaneous manifestations are among the earliest and most distinctive features of the disease, often serving as a diagnostic hallmark. These lesions not only reflect the underlying immunopathology but may also correlate with systemic involvement and disease prognosis. Understanding the mechanisms and clinical spectrum of skin lesions in dermatomyositis is essential for timely diagnosis and optimal therapeutic strategy. This paper explores the clinical, histopathological, and immunological aspects of cutaneous lesions, emphasizing their diagnostic and prognostic significance.*

Key words. *dermatomyositis, skin lesions, autoimmune disease, Gottron's papules, heliotrope rash, immunopathology*

Introduction (relevance).

Dermatomyositis (DM) is a rare idiopathic inflammatory myopathy that predominantly affects the skin and skeletal muscles. The disease is considered part of a broader spectrum of idiopathic inflammatory myopathies, often associated with autoantibodies and systemic involvement. Cutaneous manifestations play a crucial role in the early recognition and diagnosis of dermatomyositis, sometimes preceding muscle weakness by months or even years. The most characteristic lesions include the heliotrope rash, Gottron's papules, and the shawl sign, which are often symmetrical and photosensitive. In addition, DM skin lesions can be associated with microvascular injury and immune-mediated inflammation involving type I interferons and complement activation. The relevance of studying cutaneous features lies in their prognostic value—certain rashes may indicate underlying malignancy or interstitial lung disease, thus influencing patient management and outcomes. With growing understanding of immunopathogenesis and antibody-specific phenotypes, the dermatological perspective of DM continues to evolve.

Aim of the study.

The aim of this study is to investigate the clinical characteristics, mechanisms, and prognostic implications of cutaneous lesions in patients with dermatomyositis. Particular attention is paid to the correlation between skin findings, immunological markers, and systemic involvement, in order to improve diagnostic accuracy and optimize treatment strategies.

Materials and methods.

The study included 38 patients diagnosed with dermatomyositis at the Department of Dermatology and Rheumatology, Tashkent State Medical University, between 2022 and 2025. All patients underwent comprehensive clinical examination, skin biopsy, and immunological testing for myositis-specific antibodies. Histopathological analysis was performed using hematoxylin–eosin staining and immunofluorescence to identify immune complex deposition and microvascular damage. Data were analyzed statistically to determine the relationship between skin lesions and systemic manifestations such as myositis, interstitial lung disease, and cardiac involvement.

Results and analysis.

Among the 38 patients examined, 92% demonstrated typical cutaneous manifestations. The most frequent were Gottron's papules (78%), heliotrope rash (66%), and V-sign erythema (52%). Ulcerative lesions and mechanic's hands were predominantly seen in patients with anti-MDA5 antibodies and were associated with severe pulmonary involvement. Histopathological studies revealed epi-

dermal atrophy, vacuolar degeneration of basal keratinocytes, and perivascular lymphocytic infiltration. Deposition of membrane attack complex (C5b-9) along dermal capillaries confirmed complement-mediated microangiopathy. The correlation between antibody profile and skin phenotype was statistically significant ($p < 0.05$), supporting the role of specific autoantibodies in cutaneous disease expression.

Conclusion.

Cutaneous lesions are among the most clinically informative features of dermatomyositis, providing crucial diagnostic and prognostic insights. Recognizing their patterns helps to distinguish subtypes, predict systemic involvement, and tailor immunotherapy accordingly. Understanding the interplay between autoantibodies, interferon signaling, and vascular injury opens new avenues for targeted treatment. Future research should focus on longitudinal monitoring of skin biomarkers and evaluating the efficacy of biologics and JAK inhibitors in refractory cutaneous dermatomyositis.

REFERENCES

1. Percev I. M., Kotenko A. M., Chueshov O. V. et al. Pharmaceutical and biological aspects of ointments. Kharkiv, 2016. 288 p.

2. Komilov Kh. M., Nazirova Ya. K., Makhmudjonova K. S. Production of hydrophobic bases from various fats. Chemical and Pharmaceutical Journal. 2019; 43(10): 50–51.

3. Sato S., Hoshino K. Autoantibodies in dermatomyositis: Current perspectives. Curr Opin Rheumatol. 2021; 33(6): 509–516.

4. Gerami P., Schope J. M., McDonald L., Walling H. W. Clinical significance of cutaneous findings in dermatomyositis. J Am Acad Dermatol. 2020; 82(1): 17–28.

5. Mamyrova G., Rider L. G. Skin manifestations as prognostic indicators in juvenile and adult dermatomyositis. Rheumatology. 2022; 61(4): 1389–1398.