

Association of severe Raynaud's phenomenon with psoriasis – a rare manifestation

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Abstract

Raynaud's phenomenon defines the clinical consequence of recurrent vasospasm of the small arteries, arterioles, and arteriovenous shunts of the fingers and toes provoked by cold and emotional stress. Other acral parts, such as the nose, lips, ears, and penis, may also be affected. Despite several similarities between the pathogenesis of psoriasis and autoimmune diseases, it was surprising to find low frequencies of disease associations. We present a case of a 19-year-old boy with familial chronic plaque psoriasis who developed severe Raynaud's syndrome with penile involvement.

Key words: psoriasis, Raynaud's phenomenon

Introduction

Raynaud's phenomenon is a vascular disorder characterized by intermittent vasospastic attacks, resulting in triple-phase color changes, pain, and discomfort in the affected areas¹. It typically affects the fingers and toes, but involvement of other body parts like the tip of the nose, pinna of the ears, lips, and penis is uncommon and occurs in severe cases with the underlying systemic disorder.

Raynaud's phenomenon can be classified into primary and secondary forms, with the latter being associated with underlying etiologies, including connective tissue diseases. The association between Raynaud's phenomenon and psoriasis remains unclear but has been found to be associated with autoantibodies to U1 and U2 small nuclear ribonucleoproteins².

Herein, we report a rare case of severe Raynaud's syndrome with penile involvement in a young male with chronic plaque psoriasis. He also has a family history of psoriasis affecting several family members over generations.

Case report

A 19-year-old male, a result of a twin pregnancy, has had chronic plaque psoriasis since age ten. Despite using topical steroids and antiproliferative agents, his condition worsened with severe skin lesions, joint pain, nail involvement, fever, weight loss, and hematuria. Medical investigations, including renal biopsies, were normal except for dysmorphic red cells in the urine. He continues to experience hematuria and has developed proteinuria, requiring nephrology follow-up.

Additionally, the patient complained of painful bluish discoloration of both toes and fingers upon exposure to cold temperatures. A similar, although milder, involvement was observed in the tip of the nose, ears, and penis, accompanied by reddish discoloration and a burning pain. These symptoms have gradually worsened over time. He also complained of impotence during these episodes. The patient's history and examination were consistent with Raynaud's phenomenon, but no identifiable underlying etiological cause was found despite extensive investigations, including laboratory tests for autoimmune and infectious diseases. He has shown a slow response to conventional treatment options for Raynaud's phenomenon. Unfortunately, the use of biologics was not possible due to cost and unavailability.

Discussion

Psoriasis, an immune-inflammatory skin disease, affects 2-3% of the population and can be associated with psoriatic arthritis, uveitis, enthesopathy, and increased cardiovascular morbidity. The incidence of psoriasis with systemic autoimmune rheumatic diseases is rare. Genetic factors and environmental triggers contribute to the pathogenesis. Molecular mimicry is a potential factor.

The IL-23-IL-17 axis plays a pathophysiologic role in

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autoinflammatory diseases, as demonstrated by the efficacy of antibodies targeting IL-23/IL-12 p40 and IL-17 in treating psoriasis and systemic autoimmune diseases.

The association between Raynaud's phenomenon and psoriasis is unclear, but autoantibodies to U1 and U2 small nuclear ribonucleoproteins are linked to immune dysregulation and endothelial dysfunction.

Raynaud's phenomenon commonly affects digits; involvement of other body parts is rare and typically occurs in cases associated with underlying diseases. Penile involvement in our patient is an unusual manifestation, emphasizing the need to consider systemic associations. No specific treatment guidelines exist for penile Raynaud's phenomenon;

management focuses on relief and prevention of complications. Further research is needed to better understand the underlying mechanisms and establish optimal management strategies for such cases.

References

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