O_27 DOI: https://doi.org/10.5114/reum/219194

From Raynaud's phenomenon to digital gangrene: progressive vasculopathy in mixed connective tissue disease

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Key words: MCTD, Raynaud's phenomenon, necrosis, surgical debridement

Introduction: The Raynaud's phenomenon (RP) is often an initial symptom of mixed connective tissue disease (MCTD), and its progression to skin necrosis and gangrene remains rare and life-threatening. This report presents a case of severe microvascular angiopathy in MCTD leading to phalangeal necrosis requiring vasodilator therapy and surgical intervention.

Case description: A 53-year-old patient with MCTD was admitted to the Rheumatology Department in Lodz for disease activity assessment and treatment modification. Diagnosed in 2020, the patient initially presented with mild skin fibrosis and severe RP without necrosis. Treatment included methylprednisolone (16 mg, tapering), methotrexate (25 mg s.c.), and pentoxifylline (600 mg).

In August 2025, the patient experienced a significant worsening of skin ulcers on both hands, with dry necrosis of the distal phalanges. On admission, inflammatory markers were moderately elevated, along with anaemia of chronic disease, thrombocytosis, and cyanotic, indurated skin on the hands, feet, and face. The patient exhibited features typical of systemic sclerosis and massive, hard oedema in the lower limbs, as well as stable pulmonary emphysema and dysphagia due to esophagitis. No other organ manifestations were noted.

Prostaglandin E1 infusions were initiated for five days, improving blood supply to the distal limbs. A calcium channel blocker was added, and targeted intravenous antibiotics were administered for infected ulcers on the right hand. The patient was discharged in satisfactory condition.

Four weeks later, the patient returned for another prostaglandin cycle. Significant improvement in the skin on the face and feet was observed, along with healing of the left hand ulcers. However, the right hand's necrosis deepened, a bacterial infection reactivated, and an abscess developed. Prostaglandin infusions continued, and surgical debridement of the right hand was performed, resulting in finger amputations.

The patient's general condition improved, inflammatory markers decreased, and a follow-up a month later showed significant skin improvement, no swelling, enhanced well-being, and normal healing of amputation wounds. Prostaglandin treatment will continue for another three months, with close monitoring of wound healing.

Conclusions: This case shows that angiopathy in MCTD may progress from RP to gangrene, and that critical digital ischemia requires multidisciplinary management.