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Case Report

Severe Raynaud in a young female with Mixed Connective Tissue Disorder (MCTD)

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Abstract

Raynaud phenomenon is clinically manifested by sharply demarcated colour changes of the skin of the digits due to abnormal vasoconstriction of digital arteries and cutaneous arterioles. Raynaud can be primary or secondary. Here we present a young female patient who presented with Raynaud, inflammatory type of small joint pain and proximal muscle weakness. She was diagnosed to have mixed connective tissue disease after extensive evaluation.

Keywords

Raynaud phenomenon, mixed connective tissue disease, autoimmune rheumatic disease

Introduction

Mixed connective tissue disease is a syndrome with overlapping clinical features of systemic lupus erythematosus, systemic sclerosis, and polymyositis/ dermatomyositis along with a positive anti-U1RNP antibody (1). Clinical features include synovitis, myositis, finger swelling, Raynaud phenomenon and Acro sclerosis. Diagnosis criteria described by Alarcon-Segovia include positive anti-U1RNP antibodies (titer > 1:1600) in combination with three or more clinical features mentioned above. Mixed connective tissue disease occurs more in women than men. According to the population-based study in Norway, prevalence of mixed connective tissue disease is very low (2).

Case presentation

A 32-year-old housewife, mother of two children from kalutara presented with bilateral discoloration of hand after exposure to cold water. She described the triphasic colour change of pale then blue ultimately dark pink. She had asymmetrical inflammatory type of joint pain associated with early morning stiffness for more than thirty minutes duration. She had finger swelling, gangrene and ulcer on the dorsal aspect of the 2nd and 3rd fingernail bed **(figure 01**) thickening of skin proximal to metacarpophalangeal joint, speckled leukoderma and features of proximal muscle weakness. She had no associated dysphagia, exertional dyspnea, and loose stools. She had a similar past presentation but was not extensively evaluated.

She had no constitutional symptoms and features suggestive of other autoimmune connective tissue diseases. She was clinically euthyroid. Her family history was not significant.

Examination findings reveled afebrile, not pale and had speckled leukoderma **(figure 2**). She had tenderness over the fingertips for passive stretch, active synovitis of proximal joints and distal finger pulp resorption. All the peripheral pulses were present including the bilateral radial pulse. Rest of the systemic examination was normal. All the investigation are shown in **table 01.** She fulfilled the criteria for MCTD. She was managed by multidisciplinary team. Intravenous heparin bolus and methyl prednisolone every other day was given for three days. Nifedipine was given for Raynaud. Nailfold capillary scopy confirmed the diagnosis.

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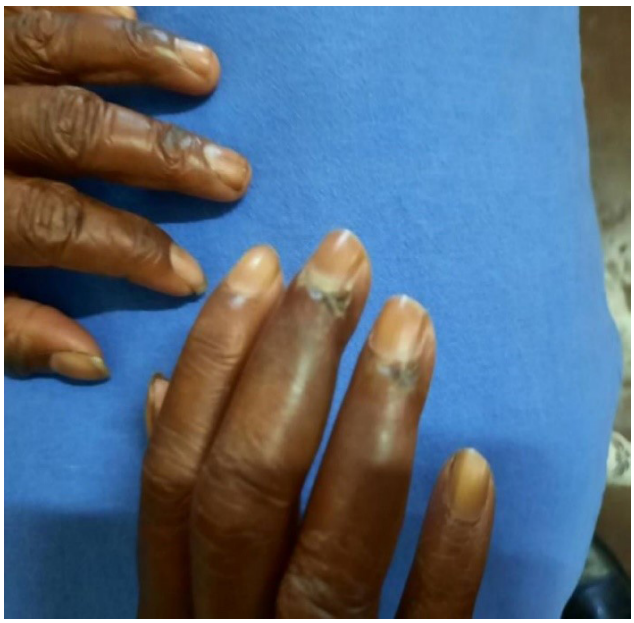

Figure 01- Severe Raynaud with gangrene of 3rd and 4th fingernail bed.

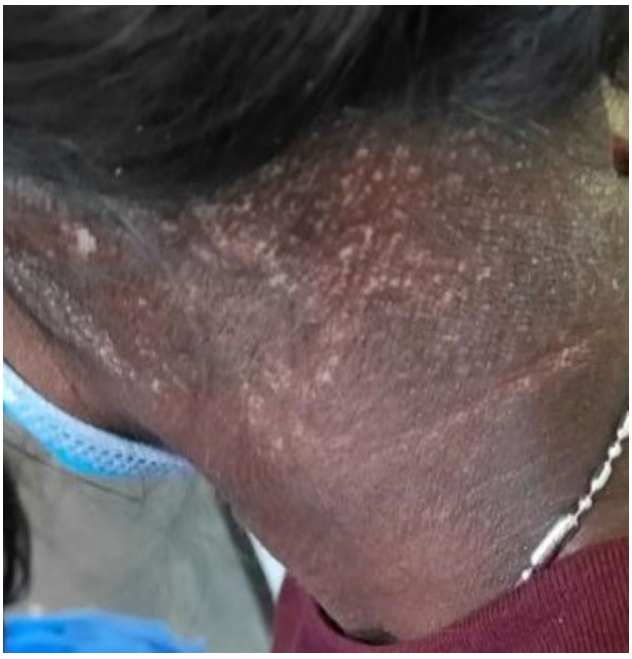

Figure 02 – Speckled leukoderma below the hair line

Table 1: Summary of Investigation Findings

WBC	8.64 (4 – 1110^9/L)
Hemoglobin	10.7 1 (2 – 15 g/dl)
Platelets	286 (150 – 410 10^9/L)
ESR	17 mm in 1st hour
CRP	20 (Less than 5 mg/L)
CPK	300 (20 – 200 IU/L)
Creatinine	70 (49 – 90 micromole/L)
Upper GI endoscopy	No luminal narrowing, peristaltic movements noticed.
Muscle biopsy	Features are compatible with inflammatory myositis
CT Angiogram upper limb	Features compatible for raynaud.
Electromyogram	Screening for myopathy/myositis negative
ANA	Positive – 1/1000
Anti- DS/DNA	Negative
U1RNP	Positive
Scl 70	Negative
Anti Jo	Negative
SSA, SSB	Negative
Chest X ray P/A	Normal
X ray hand	Periarticular osteopenia

Discussion

Raynaud's phenomenon (RP) is an episodic vasospastic disorder causing vascular compromise of digits following exposure to cold and/or emotional stressors. Majority of the individuals have primary Raynaud (80 -90%) than Secondary. It usually develops over the age of fourty years due to underlying autoimmune rheumatological conditions, drugs, occupational exposure, hematological malignancy, and vascular compression caused by cervical rib. Complex interaction between genetic, neural, vascular, and intravascular factors plays a great role in the pathogenesis of Raynaud (3).

Endothelial dysfunction, imbalance between the production of vasoconstrictors and vasodilators, reduced efficacy of vasodilators, defect in thermoregulation, central autonomous involvement mainly relocation of alpha 2a – adrenergic receptors and increased viscosity caused by activation of white cells and platelets in certain hematological malignancy contribute to the pathogenesis of Raynaud (3).

Reversible attacks, absence of gangrene, normal ESR, nailfold capillary scope and ANA favours primary Raynaud. Dilated capillaries, distortion of normal nail fold architecture, haemorrage loss of capillaries ('Drop outs') and extensive avascular areas due to impaired neo angiogenesis are seen in MCTD (3). Infrared thermography helps to differentiate primary from secondary by measuring surface temperature (4).

Management aspects of Raynaud includes lifestyle measures, removal of underlying precipitating causes, pharmacological management, procedural therapies,

and surgery. Lifestyle measures include stop smoking and avoidance cold exposure. Calcium channel blockers are the first line treatment. A meta-analysis concluded that PDE5 inhibitors have 'significant but moderate efficacy in Raynaud phenomenon' (4). Intravenous prostacyclin is well established in very severe Raynaud with digital ulceration (4). Bosentan is used for the prevention of recurrent digital ulcers (4). Surgical options for refractory Raynaud include digital sympathectomy and rarely proximal sympathectomy. Sympathectomy provides symptomatic benefit by disturbing the efferent autonomic pain pathways and attenuating the vasoconstriction. Botulinum toxin injection provides improvement in hand function (4).

Raynaud phenomenon was the first and the dominant symptom of MCTD. It remains constant over time as a result it was included as a major criterion (5). U1RNP antibody positivity contributes directly to the development of digital vasculopathy. There is no specific recommendations for treatment of Raynaud in MCTD (5). Positive anti RNP have better long-term survival than anti-scl-70 or anti-RNA polymerase 3 positivity showed in Australian cohort study (6).

Conclusion

Mixed connective tissue disease should be suspected when patient presents with Raynaud, synovitis, finger swelling, myositis and Acro sclerosis. Control the Raynaud in mixed connective tissue disease is similar to systemic sclerosis. Though mixed connective tissue disease is rare, but its prognosis better compared to systemic sclerosis alone.

References

1. Case Report Mixed connective tissue disease with secondary immune thrombocytopenic purpura - A case report. 2020;7(2):96–9.
2. Gunnarsson R, Molberg Ø, Gilboe I, Gran JT. The prevalence and incidence of mixed connective tissue disease : a national multicentre survey of Norwegian patients. 2011;(Icd):1047–51.
3. A AAH, B MH. Raynaud ' s phenomenon. 2020;20(6).
4. Herrick AL. Evidence-based management of Raynaud ' s phenomenon. 2017;317–29.
5. Grader-beck T, Wigley FM. Raynaud ' s Phenomenon in Mixed Connective Tissue Disease. 2005;31:465–81.
6. Fairley J, Id O, Id O, Major GA, Id O, Article O, et al. Clinical characteristics and survival in systemic sclerosis-mixed connective tissue disease and systemic sclerosis-overlap syndrome. :0–3.