Case Report

Crest Syndrome with Anticentromere Antibody Positive with Distal Digital Infarction

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ABSTRACT

Crest syndrome, a subset of patients with scleroderma, is an acronym for Calcinosis, Raynaud phenomenon, Oesophageal dysmotility, sclerodactyly, and telangiectasia. Anticentreomere antibodies (ACA) are found in approximately 50-90% of limited scleroderma patients in general. Distal digital infarction with CREST in a patient with ACA positive is extremely rare. Only two cases have been reported till date. *(The Ind. Pract. 2005; 58(11):171-179)*

KEY WORDS

Crest, Anti-centromere antibody, distal digital infarction.

INTRODUCTION

CREST is a form of systemic sclerosis (scleroderma) which is characterized by calcinosis (calcium deposits), usually in the fingers; Raynaud's syndrome; loss of muscle control of the oesophagus, which can cause difficulty in swallowing; sclerodactyly, a tapering deformity of the bones of the fingers; and telangiectasia, small red spots on the skin of the fingers, face, or inside of the mouth. It takes only two of the five CREST symptoms for a diagnosis of CREST (either "pure" or "plus") to be made. For example, a patient with Calcinosis and Raynaud's would have CREST (which for precision may also be written as CREST, but it is CREST nonetheless) when CREST symptoms appear along with another form of Scleroderma, it is referred to as plus CREST, or example, "Limited Scleroderma plus CREST". "Pure" CREST is diagnosed when patients have two or more symptoms of crest but they do not meet the criteria for either limited or diffuse scleroderma. Several classification schemes for scleoderma have been presented and remain in use. The American College of Rheumatology (ACR; formerly, the American Rheumatology Association) criteria for classification of scleroderma requires either 1 major criterion (proximal cutaneous scleroderma) or 2 of 3 minor criteria (scleroderma is defined as symmetric thickening, tightening, or induration of skin proximal to metacarpophalangeal or metatarsophalangeal

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joints. Satisfaction of 1 major or 2 minor criteria offers a sensitivity of 97% and a specificity of more than 98% compared to other patients with connective tissue disease.

Here, we are presenting a case of CREST with limited cutaneous sclerosis with ACA positive with distal digitial infarction.

CASE REPORT

A 35 year old female, a housewife presented to the surgical unit in our tertiary hospital with history of blackening of right middle finger before 20 days, followed by history of amputation of right middle finger from the proximal interphalangeal joint done in a secondary care unit. The amputation was done for dry gangrene secondary to digital infarction. Patient had a history of recurrent blackening of right fingertips. It however in its previous episodes used to subside with some oral therapy taken in the past. History for Raynaud's phenomenon in both upper limbs was positive. She also complained of burning sensation in both upper limbs more so on exposure to cold. There was no history of similar complaint in both lower limbs, no dysphagia, no joint pain, no blurring of vision, no breathlessness, no chest pain and no pedal oedema.

Family history for similar complaints with negative. She was a mother of 4 healthy children with no history of perinatal complications. Her menstrual history was unremarkable.

On general examination, patient had right middle finger gangrene, amputed at PIP joint, and blackening of pulp of all fingertips of the right hand. Patient was having typically tapering conical fingers, base proximally and tip distally, a condition also known as sclerodactyly. Vital signs were within normal limits and systemic examination was unremarkable. All peripheral pulsations were normal.

The patient was transferred to medical ward to investigate for systemic disease. Haemogram, liver and renal function tests, glucose tolerance, chest X ray and ECG were normal. An antinuclear antibody study was sent and patient turned out to be positive (level was 1.9 against cutoff of 1). An Anti-ds-DNA was sent which was negative. An ANA profile, including anti-centromere antibody was sent, in which anti-centromere antibodies were detected positive. A Barium swallow was carried out which was normal. A clinical diagnosis of CREST with limited cutaneous sclerosis and distal digital infarction was kept, since two of the five criteria for CREST, namely, Raynaud's syndrome and Sclerodactyly was present. Patient was subjected to bilateral upper limb arterial Doppler which was normal. Thyroid functions were performed, which were normal as thyroid function defects may mimic the skin manifestations of CREST. Patient was put on aggressive antiplatelet therapy and the phosphodieterase inhibitor, cilostazole. Nifedipine was started in the dose of 45 mg per day was given with marginal improvement in Raynaud's phenomenon. Patient was advised to wear gloves and stockings to cover her extremities from cold. Opioid agonists were given to counter the severe burning pain of digital infarction. Patient showed marginal improvement after a week and was discharged with explanation regarding her ailment.

DISCUSSION

Limited scleroderma is associated with the presence of ANA. Anti-centromere antibodies are found in approximately 50-90% of limited scleroderma patients in general. The specificity of this test is 95%.[1]

ACA appears to identify a subset of systemic sclerosis patients who have less major organ involvement[2] but who are at increased risk of severe digitial ischaemia.[3] There have been very few reports of patients with digital infarction and ACA who do not fulfil the criteria for either CREST syndrome (calcinosis, Raynaud's phenomenon, oesophageal dysmotility sclerodactyly, telangiectasias) or systemic sclerosis according to the ACR criteria.[4] The few that are reported are nearly invariably seen in patients with pre-existing Raynaud's phenomenon. A literature search to date revealed only one case of ACA associated with digitial infarction, but that was in the absence of Raynaud's phenomenom or a connective tissue disease.[5] This was a 61-yr-

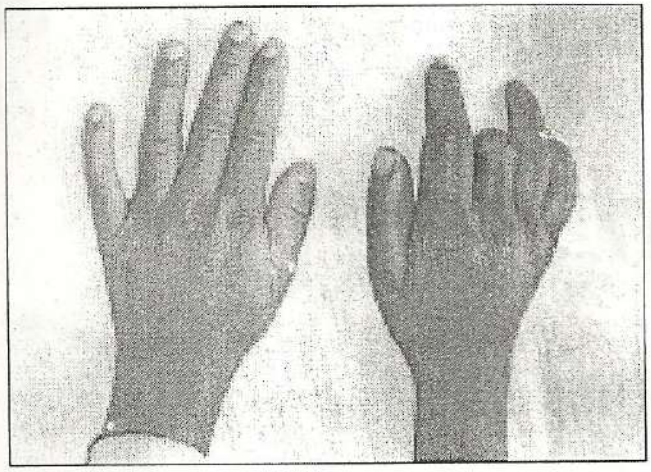

Fig. 1
Distal digitial infarction in right middle finger with limited cutaneous sclerosis

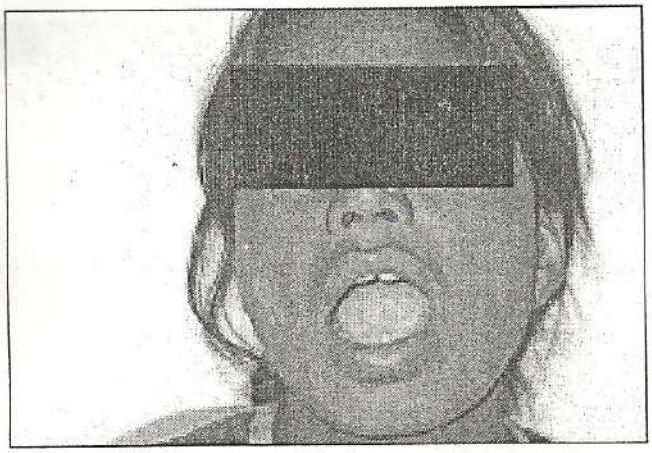

Fig. 2
Face of the same patient showing normal mouth opening unlike systemic sclerosis

old female smoker who suffered from a leg claudication syndrome and hypertension, who responded poorly to treatment. Another case was reported in 2000 in British society of Rheumatology Journal.[6] Our patient had never smoked, was anti-centromere antibody positive, did not fulfil ACR criteria for crest and also responded poorly to treatment. Poor response to therapy and eventual amputation is a feature of the reported cases of ACA associated with digital ischaemia in patients with systemic sclerosis irrespective of the presence of Raynaud's phenomenon, age and smoking habit.[7] Previous authors have suggested there is a spectrum of clinical disease ranging from mild Raynaud's phenomenon through to the CREST syndrome,and that ACA may serve as a marker for those patients likely to progress.[8] There is little evidence for a direct role of ACA in the pathogenesis of digitial infarction, although Takahashi et al[9] suggest that it may be toxic to endothelial cells. There are no longitudinal studies examining the prognostic significance of ACA in the absence of systemic sclerosis, but anecdotal evidence suggests that ACA may precede the onset of the CREST syndrome by many years.[10] The prevalence of ACA in female blood donors has been reported as 0.08%, whereas the reported prevalence in patients with idiopathic Raynaud's syndrome is 31%.[11]

Our case illustrates the need to test for ACA when investigating a patient with digital ischaemia as it may provide useful information for the future management and prognosis.

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