

Groove sign: Heeding clue to eosinophilic fasciitis

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Figure 1. Groove sign (white arrows): Linear depressions along the course of the veins on the forearm, better visualized with the forearm elevated.

A 34-year-old male farmer presented with polyarthralgia involving the small and large joints of the upper and lower limbs with early morning stiffness lasting 20-30 min for the past 2 months. He complained of bounding of skin involving the limbs and trunk along with difficulty in rising from a sitting posture for the last 1 month. He had no history of fever, Raynaud's phenomenon, dyspepsia, dyspnea, symptoms of sicca, or pentazocine abuse. Examination revealed pitting edema of the legs and skin thickening in the arms and legs up to the elbow and knee joints, respectively, with trunk involvement. Skin thickening was absent on the face and digits. Both forearms exhibited linear depression along the superficial veins, which was more prominent upon elevation of the arms, suggestive of groove sign (Figure 1). Laboratory test results revealed peripheral eosinophilia (E=12%)

on differential leucocyte count, with a total leukocyte count of 9000 cells/mm³. Skin biopsy revealed mild eosinophilic infiltrate of the vessels with few macrophages infiltrating the fascia, suggestive of eosinophilic fasciitis (EF). He was treated with prednisolone (40 mg/day) and methotrexate (15 mg/week). After 1 month of treatment, he showed improvements in joints pain, muscle weakness, and skin thickening.

In 1974, Schulman described the first case of EF (also known as Shulman Syndrome), which closely mimicked scleroderma (1). EF is a rare fibrosing condition of fascia characterized by skin indurations caused by predominant eosinophilic infiltration, peripheral eosinophilia, edema, and progressive muscle weakness involving the extremities. Groove sign is a classical and characteristic feature of EF and can be observed as a depression along superficial veins, best visualized when the limbs are elevated. Limb elevation results in decreased peripheral venous pressure, and the superficial skin is tethered inward, accentuating the depressions along the course of the veins, which is caused by sparing of epidermis and upper-dermis layers by a fibrotic process. EF is often misdiagnosed, leading to delays in management. Identification of the groove sign, which is characteristic of EF, can help establish diagnosis (2).

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