

# Groove Sign in Eosinophilic Fasciitis

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A 62-year-old woman had development of firm, indurated plaques on her legs following vigorous massage therapy. Her legs had a peau d'orange texture and exhibited a groove sign bilaterally (Figure). Investigations revealed peripheral eosinophilia, an elevated erythrocyte sedimentation rate, and skin biopsy findings compatible with eosinophilic fasciitis (EF).

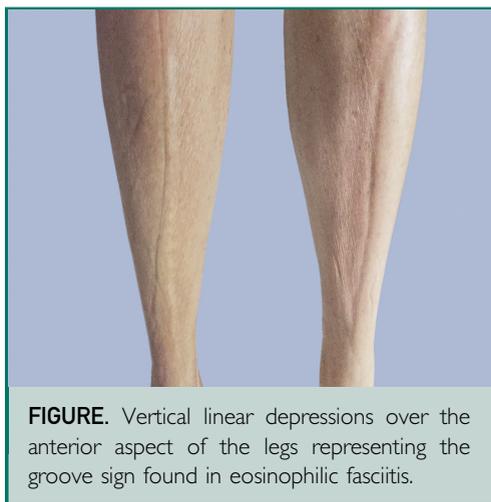
The patient was prescribed a regimen of prednisone at 40 mg/d, hydroxychloroquine at 400 mg/d, and methotrexate at 20 mg weekly. Because her disease persisted, her medication regimen was switched to mycophenolate mofetil, 1 g twice daily. Eventually, she responded to high-dose intravenous immunoglobulin (2 g/kg per month).

Described by Shulman<sup>1</sup> in 1984, EF is a rare scleroderma-like disorder characterized by inflammation, edema, and induration of the fascia. An initial edematous phase typically follows exercise or trauma and is replaced by progressive, symmetric sclerosis of the extremities. Although the trunk may be involved, the hands and face are often spared.

Associated symptoms include inflammatory arthritis, joint contractures, compression neuropathies, and compartment syndromes. Laboratory studies reveal peripheral eosinophilia, hypergammaglobulinemia, elevated erythrocyte sedimentation rate, and antinuclear antibodies.<sup>2</sup> The degree of eosinophilia does not correlate with disease progression.

Eosinophilic fasciitis is characterized histopathologically by sclerosis of the dermis, subcutaneous fat, and fascia, with scattered lymphocytes admixed with eosinophils. Magnetic resonance imaging reveals fascial thickening.<sup>3</sup> The differential diagnosis of EF includes morphea, limited and diffuse cutaneous systemic sclerosis, eosinophilia-myalgia syndrome, toxic oil syndrome, and other fibrosing disorders (eg, nephrogenic systemic fibrosis, scleromyxedema, and scleredema).

The groove sign, or vertical linear depressions along superficial veins, is a characteristic finding of EF made prominent by limb elevation.



**FIGURE.** Vertical linear depressions over the anterior aspect of the legs representing the groove sign found in eosinophilic fasciitis.

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## REFERENCES

- Shulman LE. Diffuse fasciitis with hypergammaglobulinemia and eosinophilia: a new syndrome? *J Rheumatol*. 1984;11(5):569-570.
- Fett N, Arthur M. Eosinophilic fasciitis: current concepts. *Clin Dermatol*. 2018;36(4):487-497.
- Moulton SJ, Kransdorf MJ, Ginsburg WW, Abril A, Persellin S. Eosinophilic fasciitis: spectrum of MRI findings. *AJR Am J Roentgenol*. 2005;184(3):975-978.