A Case Report of Eosinophilic Fasciitis

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Introduction: Eosinophilic fasciitis is characterized by a progressive and symmetrical induration and thickening of the skin and soft tissues of the limbs and trunk. We describe the case of a patient diagnosed with eosinophilic fasciitis, without evidence of tissue eosinophil infiltration.

Case report: The patient, a 31-year-old female, presented with symmetrical non-pitting edema in both upper and lower extremities (Fig. A). A complete blood count revealed hypereosinophilia, with an eosinophil percentage of 38.2% and eosinophil count of 3848/μL. Hypergammaglobulinemia was noted at 2093.9 mg/dL. As treatment, prednisone was administered 30 mg twice daily for one week, which resulted in resolution of eosinophilia. The dose of prednisone was tapered to 15 mg twice daily for the following month, during which the swelling in both the upper and lower extremities progressed from the distal to proximal regions. Magnetic resonance imaging (MRI) indicated diffuse symmetric thickening and enhancement of both deep investing and intermuscular fascia in the thighs (Fig B). A skin biopsy (Fig. C) from the right thigh revealed thickened collagen within the deep dermis, whereas the fascia and thigh muscle biopsy (Fig D, E) demonstrated chronic inflammation with fibrosis and lymphoplasmacytic infiltration. Systemic sclerosis was discounted due to the negative nailfold capillary test, lack of hand involvement, and the presence of chronic inflammation in the fascia and muscle. Given the prior steroid treatment, the absence of eosinophils in the tissue samples was expected. The diagnosis of eosinophilic fasciitis was based on the clinical manifestation, the fascial inflammation noted on MRI, and biopsy findings. The patient exhibited mild improvement in symptoms after receiving reslizumab treatment, and an MRI follow-up was scheduled.

Conclusion: When early treatment with steroids is initiated and evidence of eosinophils in tissue is absent, diagnosing eosinophilic fasciitis is challenging; however, a diagnosis can still be established, considering the distinctive clinical features, and excluding other potential diagnoses.

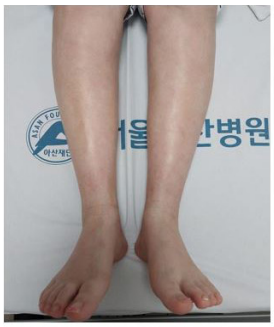

Figure A: Lower extremity edema

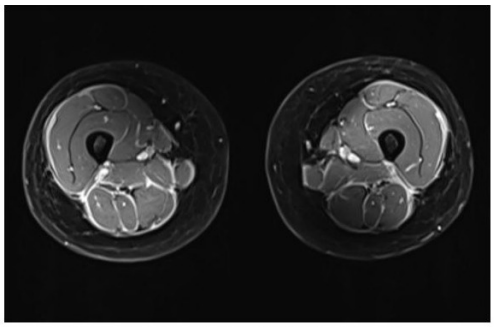

Figure B: Thigh MR, T1-weighted gadolinium enhanced
Fascial enhancement in deep investing fascia, intermuscular fascia

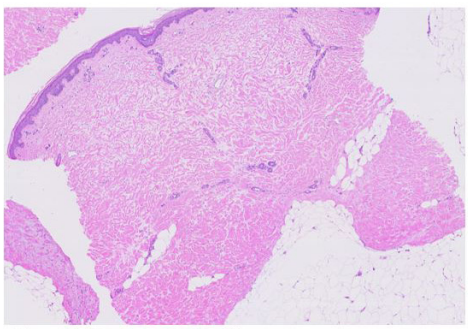

Figure C: Skin biopsy, H&E stain
Collagen deposit in deep dermis

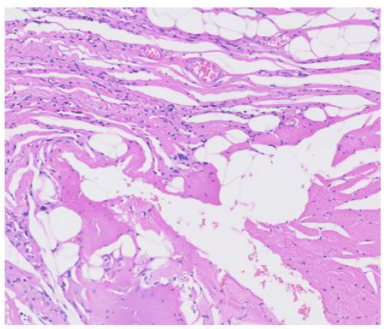

Figure D: Muscle biopsy, H&E stain
Muscle atrophy and lymphoplasmacytic infiltration

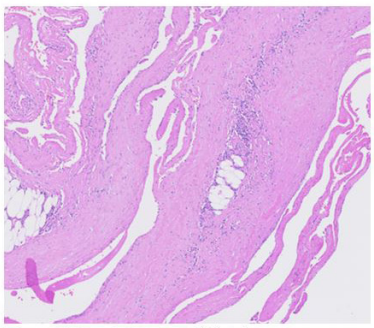

Figure E: Fascia biopsy, H&E stain
Lymphoplasmacytic infiltration, chronic inflammation