Development of biopsy-proven giant cell arteritis in a patient with dermatomyositis on methotrexate: comment on the article by Monti *et al*.

Sirs,

We read with interest the vasculitis year-in-review article by Monti *et al*. (1) highlighting the benefit of tocilizumab in patients with giant cell arteritis (GCA). Herein we report an illustrative case highlighting the lack of efficacy of long-term methotrexate in preventing the development of GCA in a patient with dermatomyositis.

In 1995, a 57-year old Caucasian female presented with heliotrope rash (Fig. 1A) as well as violaceous erythema of her trunk, upper chest (Fig. 1B), upper back and arms and Gottron's papules. Clinical examination and electromyogram identified proximal myopathy and deltoid biopsy confirmed findings consistent with dermatomyositis. She was initiated on prednisone and methotrexate with subsequent normalisation of her muscle enzymes and resolution of cutaneous lesions and muscle weakness. She weaned off steroids in 12 months and remained in clinical remission on 10 mg weekly methotrexate.

She presented in 2018 still on methotrexate, at the age of 80 years, with several months of malaise, jaw claudication, new-onset frontotemporal headaches, and stiffness of the neck and shoulder girdle without objective weakness. Creatine kinase and aldolase were normal. Erythrocyte sedimentation rate was elevated at 48 mm/hr and C-reactive protein at 13.4 mg/L. Scalp tenderness and prominent temporal arteries were noted bilaterally. Biopsy of the temporal artery revealed features consistent with GCA (Fig. 1D). Angiography of the chest was negative for large-vessel vasculitis or occult malignancy. Prednisone 60 mg daily was initiated, resulting in prompt resolution of symptoms and normalisation of inflammatory markers. Methotrexate was continued for chronic maintenance of her dermatomyositis.

The reports of GCA developing in patients with other pre-existing autoimmune diseases are rare. Coexistent GCA has been noted with systemic sclerosis (2), rheumatoid arthritis (3, 4) and systemic lupus erythematosus (5). Kennedy and Mitchinson (6) described histologic findings of myocarditis and skeletal myositis in an autopsy case of a 57-year-old female with GCA, but these features were incidentally found and clinically asymptomatic prior to the patients demise. To our knowledge, this is the first report of a patient with a history of dermatomyositis subsequently developing biopsy-proven GCA.

Development of GCA in a patient with dermatomyositis on chronic maintenance with methotrexate is of importance for several reasons. First, approximately 50% of patients with GCA present with polymyalgia rheumatica (PMR) symptoms. As such, it is essential to clinically differentiate between the features of an inflammatory myositis, such as dermatomyositis, and PMR, with the former demonstrating weakness and the latter stiffness without overt weakness. Proximal muscle stiffness with intact strength and normal muscle enzymes suggested in this case that symptoms were not due to active dermatomyositis. Second, reports have shown that patients with other

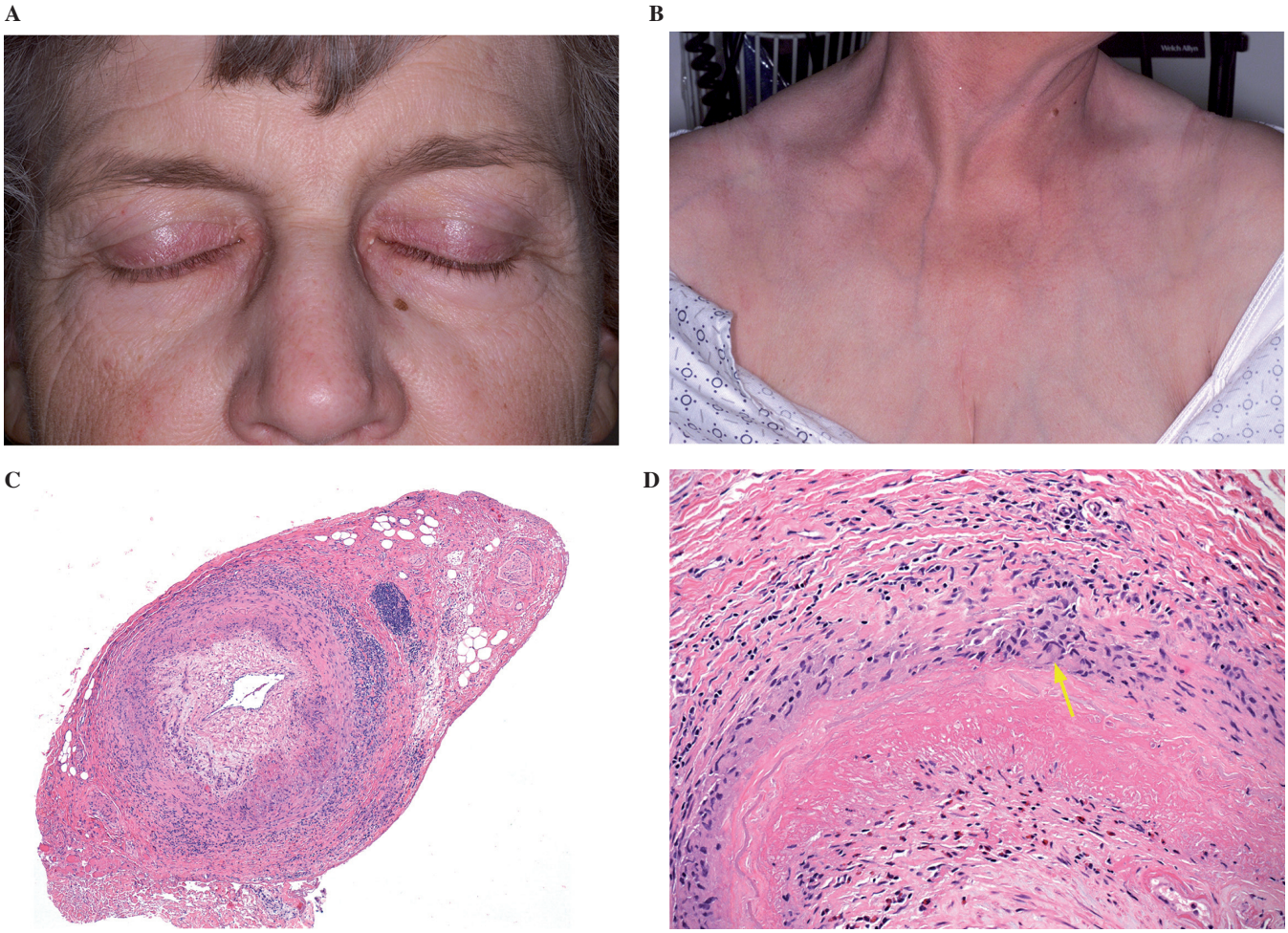

Fig. 1. **A**: Violaceous erythema of the eyelids (heliotrope), and (**B**) hyperpigmentation of the neck and upper chest (V neck) around the time of dermatomyositis diagnosis. **C**: Temporal artery biopsy demonstrating transmural granulomatous inflammation (H&E, x40 magnification) with presence of giant cells (H&E, x200 magnification) (**D**, arrow).

autoimmune diseases, such as our patient, can develop GCA despite ongoing treatment with immunosuppressive medications such as leflunomide (4), etanercept (3), adalimumab (4), and methotrexate (3). This corroborates clinical trial data failing to show marked benefit of these agents in the management of GCA (7). One should not exclude GCA from their differential diagnosis in patients with suggestive features even if they are currently on disease modifying agents; especially if their clinical symptoms evolve, or are atypical for their primary autoimmune process.

Tocilizumab, a monoclonal antibody targeting interleukin-6, is the first medication to exhibit definitive benefit in the treatment of both newly-diagnosed and relapsing GCA(8). Tocilizumab has also shown preliminary benefit in a small series of patients with refractory polymyositis (9) and also a patient with recalcitrant dermatomyositis (10) and is currently being evaluated in a phase 2 clinical trial for the treatment of these conditions (ClinicalTrials.gov Identifier NCT02043548). Therefore, tocilizumab may represent a viable monotherapy for patients with GCA and inflammatory myositis and is a potential option for our patient if symptoms return on steroid taper.

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