Giant cell arteritis and systemic sclerosis: a rare overlap syndrome

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Abstract

Systemic sclerosis (SSc) is a connective tissue disease which is characterized by endothelial dysfunction, inflammation and fibrosis. Although scleroderma is often presented as an overlap syndrome with other autoimmune rheumatic diseases, the development of large vessel vasculitis in patients with SSc is considered extremely rare, since only three case reports have thus far been reported in English literature. Herein, we report a 65-year-old woman with a long-standing history of systemic sclerosis who developed giant cell arteritis, eight years after initial diagnosis.

Introduction

Overlap syndromes describe the incidence of two or more autoimmune diseases in a single patient. Patients with systemic sclerosis (SSc) often present clinical features commonly seen in other connective tissue diseases, such as systemic lupus erythematosus, polymyositis, dermatomyositis or rheumatoid arthritis. However, the co-existence of SSc and primary vasculitis is thought to be very uncommon. Our patient developed symptoms and signs typical of giant cell arteritis (GCA), such as headache, tenderness of the temporal artery, erythema of the temple, jaw claudication, myalgia, fever, fatigue, weight loss and night sweats. The diagnosis of GCA is most likely based on the presence of temporal artery involvement, a localized morphea on the left arm, ulceration of the tongue, and presence of temporal artery biopsy findings showing inflammatory cell infiltration.

Case Report

The patient was admitted in December 2005 because of exertional dyspnea, Raynaud’s phenomenon, localized morphea on the left arm and symptoms of gastroesophageal reflux disease for 10 months. High resolution computed tomography (HRCT) of the thorax revealed bilateral basal ground glass opacities, while pulmonary capillaroscopy showed lower esophageal sphincter dysfunction and grade 2 esophagitis. Biopsy of the tongue showed normal findings, whereas ESR and C3/C4 complement levels were normal.

On the other hand, the pathogenesis of GCA reflects a dysregulation of immune system that affects predominantly large or medium-sized arteries, such as the temporal artery and its branches, the thoracic aorta and branches of the external carotid arteries. Histologic findings show that arteries are mainly infiltrated by T lymphocytes and macrophages, whilst the characteristic giant cells are found only in 50% of temporal artery biopsies. Activated by unidentified causes monocytes infiltrate the media or the internal elastic membrane of the arteries and consequently, the recruitment of macrophages and lymphocytes leads to the progression of inflammation and tissue injury. Remodeling of blood vessels results to narrowing and finally, occlusion of the affected arteries.

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Discussion

Although large artery involvement in SSc is unexpected, since disease pathogenesis is characterized by microangiopathy and fibrosis, current reports support that macrovascular disease and accelerated atherosclerosis may be present in a significant proportion of patients. Apart from that, macroangiopathy
may be associated with the extent of skin involvement in SSc and certain autoantibodies such as anti-topoisomerase I (Scl-70). However, the presence of typical GCA in this patient may suggest a rare overlap syndrome since the pathogenetic mechanisms of these diseases differ considerably.

The use of glucocorticoids is considered to be the gold standard in treatment of GCA. Especially patients at high risk of visual loss or other macrovascular complications should start therapy with prednisone or equivalent as soon as possible. However, glucocorticoids in high doses have been associated with an increase at risk of renal crisis in SSc. There are several studies indicating that more than one-half of patients with scleroderma renal crisis had an exposure to moderate or high doses of glucocorticoids. To eliminate the possibility of renal involvement or other adverse reactions by the use of glucocorticoids, it has been suggested methotrexate to be moderately effective as a glucocorticoid-sparing agent. Other agents, such as cyclophosphamide or tocilizumab (monoclonal antibody against IL-6R), have been introduced as possible alternatives, but their definite effectiveness is yet to be proven. It is worth mentioning that one clinical trial proved anti-TNF agents to be unable to induce remission. Due to the fact that our patient had no evidence of renal involvement in the previous years, she was introduced under standard treatment with methylprednisolone and no adverse complications have been developed so far.

**Conclusions**

The presence of suggestive symptoms, which can not be attributed to the primary disease, and/or abnormal physical signs in an elderly patient with diffuse SSC should alert the clinician to consider the possibility of large vessel involvement. Thus, the required screening for confirmation of GCA’s diagnosis is recommended in highly suspected patients with other connective tissue diseases.

**References**