A Case Report of Post COVID19 Giant Cell Arteritis and Polymyalgia Rheumatica With Visual Loss

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ABSTRACT: COVID-19 shares some features of giant-cell arteritis, in which the diagnosis needs a high suspicion for prompt investigation and therapy. When the diseases coexist this might lead to diagnosis delay with grave consequences. We reported a case of a post-COVID-19 giant cell arteritis and polymyalgia rheumatica with visual loss. We treated the patient with pulse methylprednisolone 1 gm daily for 3 consecutive days followed by 60 mg prednisolone for 4 weeks until normalization of ESR, and then, gradual withdrawal. Oral Paracetamol, vitamin-D3, and calcium carbonate were added to the treatment regimen. The headache continued, so, we started perineural injection therapy (PIT) once daily, for 6 sessions, at which the headache was completely resolved after the third injection. The vision was regained completely after the sixth injection.

KEYWORDS: Giant-cell arteritis, post-COVID-19, polymyalgia rheumatica, perineural injection

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Introduction

Giant-cell arteritis (GCA) overlaps polymyalgia rheumatic (PMR) in about 21%,[1] and usually among those ⩾50 years. Polymyalgia rheumatica should be considered in patients with acute onset of bilateral upper extremity pain worsening with or after rest. It is prudent to early recognize giant-cell arteritis and initiate glucocorticoid therapy to avoid ischemic optic neuropathy and permanent loss of vision.[2]

COVID-19 is known for its immune dysregulation. Interleukins were found to have a strong association with rheumatic diseases during the COVID-19 pandemic. For instance, interleukin-6 and interleukin-17 showed association with giant-cell arteritis and arthritis among those infected with COVID-19.[3]

COVID-19 patients with large vessel vasculitis showed a higher rate of fatality and hospitalization and Tocilizumab and glucocorticoids were shown to improve the outcomes.[4] Systemic vasculitis was the fourth most common rheumatic disease among patients hospitalized for COVID-19, with poor and irreversible clinical outcomes due to delay in diagnosis of AAV during the COVID-19 pandemic.[5] Many researchers reported COVID-19 triggering systemic vasculitis, polymyalgia rheumatica, and giant-cell arteritis, with variable and largely unmodifiable risk factors.[6-8] We reported a case of GCA associated with PMR in a patient with COVID-19.

Case Presentation

A 61-years old female with type 2 diabetes mellitus, hypertension (BP 180/100 mmHg), dyslipidemia (cholesterol 289 mg/dl, triglycerides 195 mg/dl), and hypothyroidism presented with recent onset left temporal continuous headache; the history started 45 days before. The patient gave a history of hospitalization 2 months ago, for 10 days because of PCR-confirmed COVID-19 infection. On examination, the patient looked ill; the vital signs were within normal. She had bilateral shoulder and limb-girdle stiffness, jaw claudication, and weight loss. In addition, she had a visual loss of the left eye and blurring of vision in the right eye, for which she was prescribed topical treatment by an ophthalmologist. Temporal artery biopsy showed

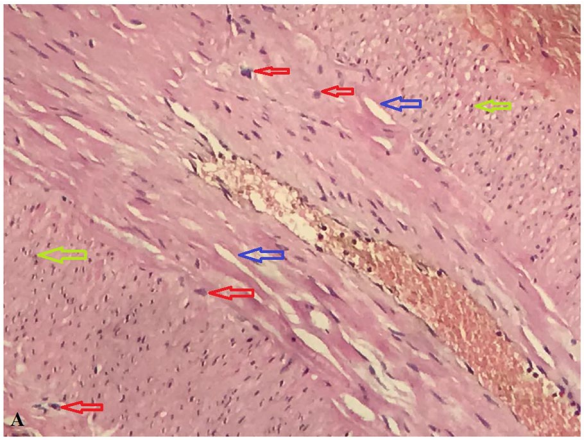

Figure 1. Temporal artery biopsy of GCA with Hematoxylin-eosin preparation shows irregular intimal thickening with area of luminal blockage with recanalization, with scarce lymphocytes in intima and media. Consistent with old lesion of giant cell arteritis, typical transmural mononuclear cell infiltration (green arrow), internal elastic lamina breakdown and intimal hyperplasia (blue arrow), and giant cells (red arrows).

recanalization after inflammation (Figure 1). Investigations were: ESR = 73 mm, CRP = 60 mg/l, WBCs = 18.400×10^9 cell/l with 92% neutrophils, hemoglobin = 11.3 gm/l, platelets = 288 000 c/mcl, rheumatoid factor (RF), and antinuclear antibodies (ANA) were negative. IgG antibodies for covid-19, Epstein-Barr (EBV) were detected, while bacteriological screening was negative. Echocardiography, MRA, CT Angiogram for aorta and its major branches were normal, which excluded aortitis.

As the patient fulfilled The American College of Rheumatology 1990 criteria for the classification of giant cell arteritis,[9] diagnoses were settled as giant cell arteritis with polymyalgia rheumatica.

The patient was on Telmisartan 40 mg daily, Verapamil 80 mg daily, Metformin 500 mg/8 hourly, Rusovastatin 10 mg once daily, and Levothyroxine 50 mg once daily.

Treatment

We added to the regimen pulse methylprednisolone 1 gm daily for 3 consecutive days followed by 60 mg prednisolone for 4 weeks until normalization of ESR, followed by gradual withdrawal. Oral Paracetamol, vitamin-D3, and calcium carbonate were added to the treatment regimen. The headache continued, so, we started perineural injection therapy (PIT) once daily, for 6 sessions, at which the headache was completely resolved after the third injection. The vision was regained completely after the sixth injection.

Perineural injection therapy (PIT) consists of a series of small injections immediately under the skin targeting painful areas where the sensocrine nerves are sensitive, with simple and natural substances. The substance is a buffered D5W (dextrose 5% in sterile water) with a neutral pH of 7.4.[10-13]

Discussion

We reported a case of post-COVID-19 giant-cell arteritis. Similarly, Jonathan et al[14] presented a case of post-COVID-19- and Giant Cell Arteritis-Like Vasculitis. High suspicion and early diagnosis are of primary importance to avoid permanent vision loss as observed in our case. Studies from Italy observed higher visual loss from GCA during the COVID-19 outbreak.[14] Interestingly, presentation with otalgia and visual loss were reported with normal ESR in cases that showed positive COVID-19.[15] Literature from several parts of the world observed the association of COVID-19 and giant-cell arteritis.[16-18]

Therefore, it is wise to suspect GCA in those over 50 years of age presenting with symptoms in one or both eyes, or persistent frontal or parietal headache (Table 1). A high rate of suspicion, prompt investigation, and treatment promptly are vital to avoid permanent vision loss.[19]

Table 1. Some discriminatory features of COVID-19 and giant-cell arteritis.

CHARACTER	COVID-19	GIANT-CELL ARTERITIS
Headache	Present	Present
Jaw claudication or visual loss	Rare	Present
Fatigue	Present	Present
High ESR and CRP	Present	Present
High platelets	Rare	Present
Lymphopenia	Common in COVID-19	Rare
Cough and fever	More in COVID-19	Rare
Gastrointestinal symptoms	More in COVID-19	Rare

Adapted from Puja Mehta et al.[5]

Author Contributions

All authors contributed equally in examining, diagnosing, and treating the patient. They also contributed to writing and revising the manuscript, while Professor Adel Elbeialy is the corresponding and responsible author.

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