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

Ali M Mursi1, Hyder O Mirghani2 and Adel A Elbeialy3

1Department of Rheumatology–Benha Teaching Hospital, Gothi, Egypt. 2Department of Internal Medicine, Faculty of Medicine, University of Tabuk, Saudi Arabia. 3Department of Rheumatology, Al-Azhar University Faculty of Medicine for Girls, Cairo, Egypt.

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 60mg 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 (FIT) 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

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 180/100mmHg), dyslipidemia (cholesterol 289mg/dl, triglycerides 195mg/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 × 10⁹ 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, 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, Rosuvastatin 10 mg once daily, and Levothyroxine 50 mg once daily.

Discussion

We reported a case of post-COVID-19 giant-cell arteritis. Similarly, Jonathan et al14 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 or visual loss were reported with normal ESR in cases of COVID-19 and giant-cell arteritis.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

| 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.

ORCID iD
Ali M Mursi  https://orcid.org/0000-0002-5034-8545

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