

Obinutuzumab & Bendamustine causing T cell depletion leading to CMV retinitis in a patient with relapsed follicular lymphoma: A case report

Rohit Sharma¹, Mohammed Omer Khalil Ali², Mohammad Abdullah Mohd Abutineh³, Hawraa Mohammed Ridha Omran Shwaylia³, Ruba Yasin Ibrahim Taha³

1.Department of Medicine, Geisinger Health System, Wilkes-barre, PA, USA
 2.Department of Internal Medicine, Hamad Medical Corporation, Doha, Qatar
 3.Department of Hematology, National Center for Cancer Care and Research, Doha, Qatar

Background

Obinutuzumab is a type II Anti-CD20 glycoengineered monoclonal antibody which is currently being used in CLL and Follicular lymphoma. While Obinutuzumab is known to cause Hepatitis B reactivation and progressive multifocal leukoencephalopathy due to JC virus, data surrounding CMV reactivation is extremely limited. Bendamustine is a chemotherapeutic alkylating agent which acts by cross-linking single & double-stranded DNA. Only 2 cases of CMV retinitis have been reported in the literature after the administration of Bendamustine. Cytomegalovirus (CMV) is a well-known opportunistic infection in immunocompromised patients. Although CMV retinitis is classically described in patients with HIV and Acquired immunodeficiency syndrome (AIDS), it has now been increasingly identified that it may occur in patients with multiple systemic conditions. Around 170 cases of CMV retinitis have been reported in literature ranging from healthy individuals to severe immunological dysfunction secondary to rheumatological & hematological diseases.

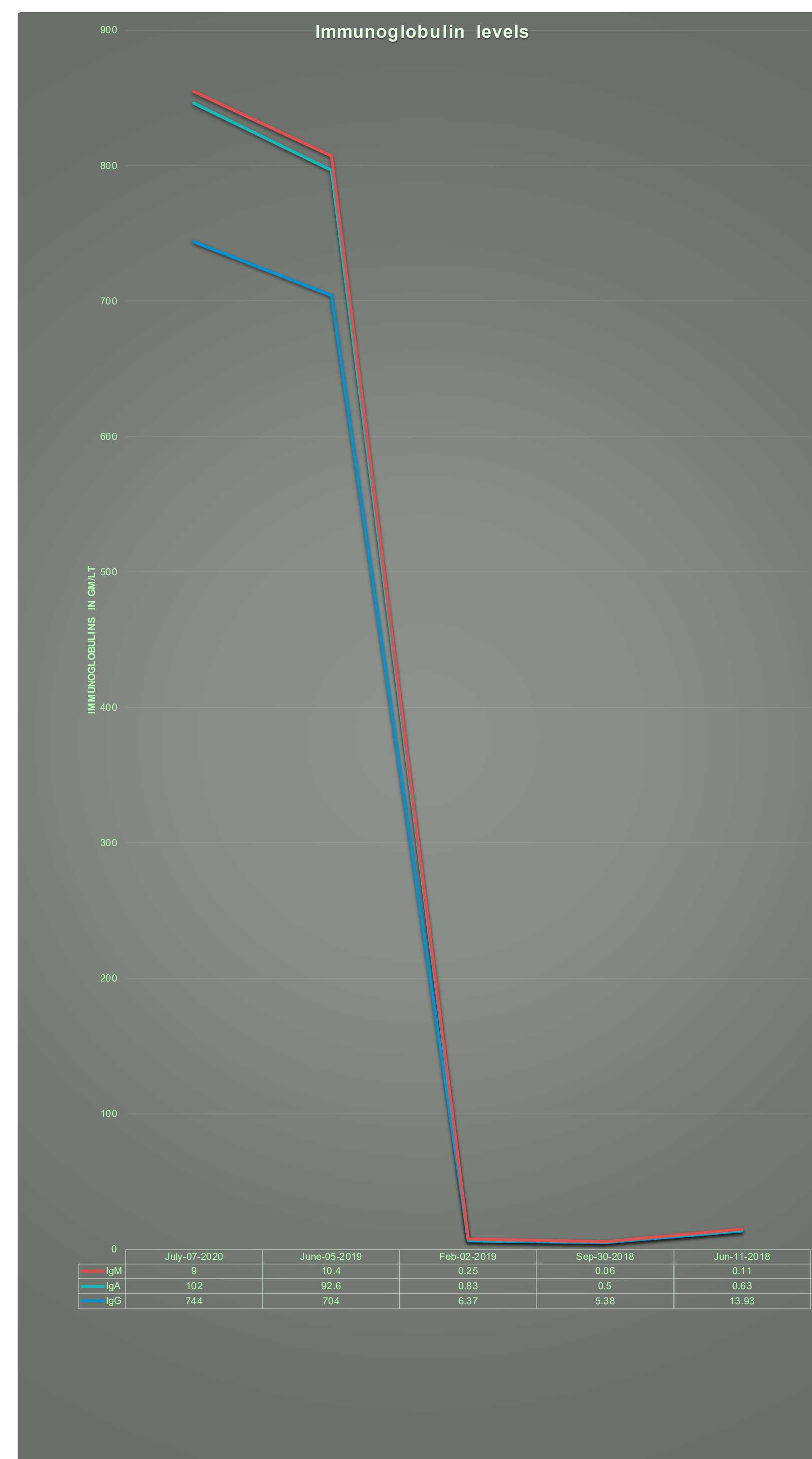


Table 2: Immunoglobulin level trend over the period of 3 years

Case Presentation

We report a 59-year-old male of South-Asian descent, with relapsed/refractory follicular lymphoma stage IV treated with salvage Obinutuzumab and Bendamustine. Obinutuzumab was given as maintenance therapy thereafter. He subsequently presented with a progressive bilateral reduction in his vision, which was eventually diagnosed as bilateral CMV retinitis based on positive CMV Polymerase chain reaction (PCR) from both Serum and vitreous fluid. CD-4 + T cell count was found to be 48 cell/ mcl (Table 1), IgG level was reported as 5.38 gm/l (Table 2). The patient was treated with Intravenous (IV) & Intravitreal Ganciclovir. The patient unfortunately had complete loss of vision despite aggressive treatment.

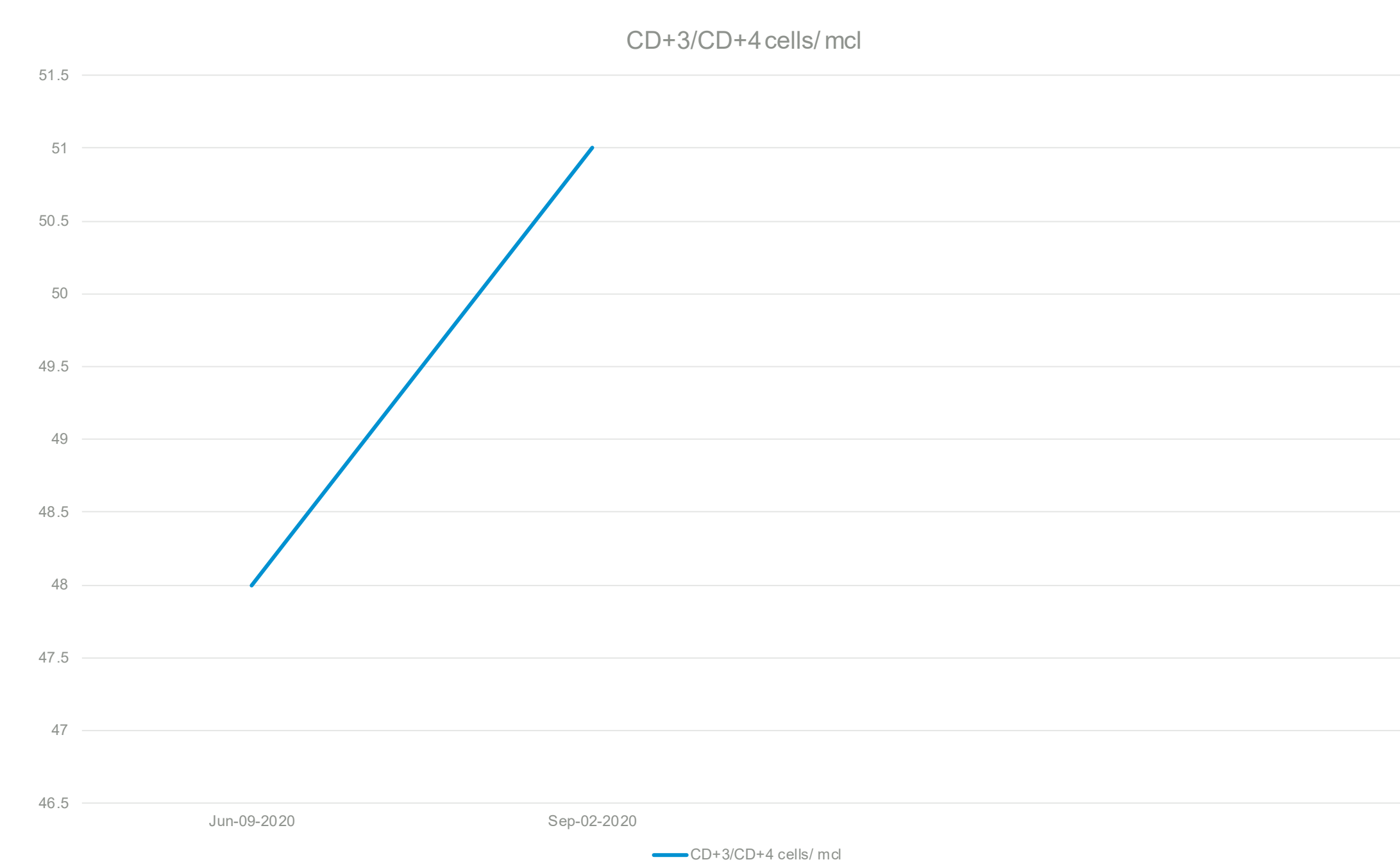


Table 1: CD4+ cell count /mcl over the period of 4 months when the patient was diagnosed to have CMV retinitis

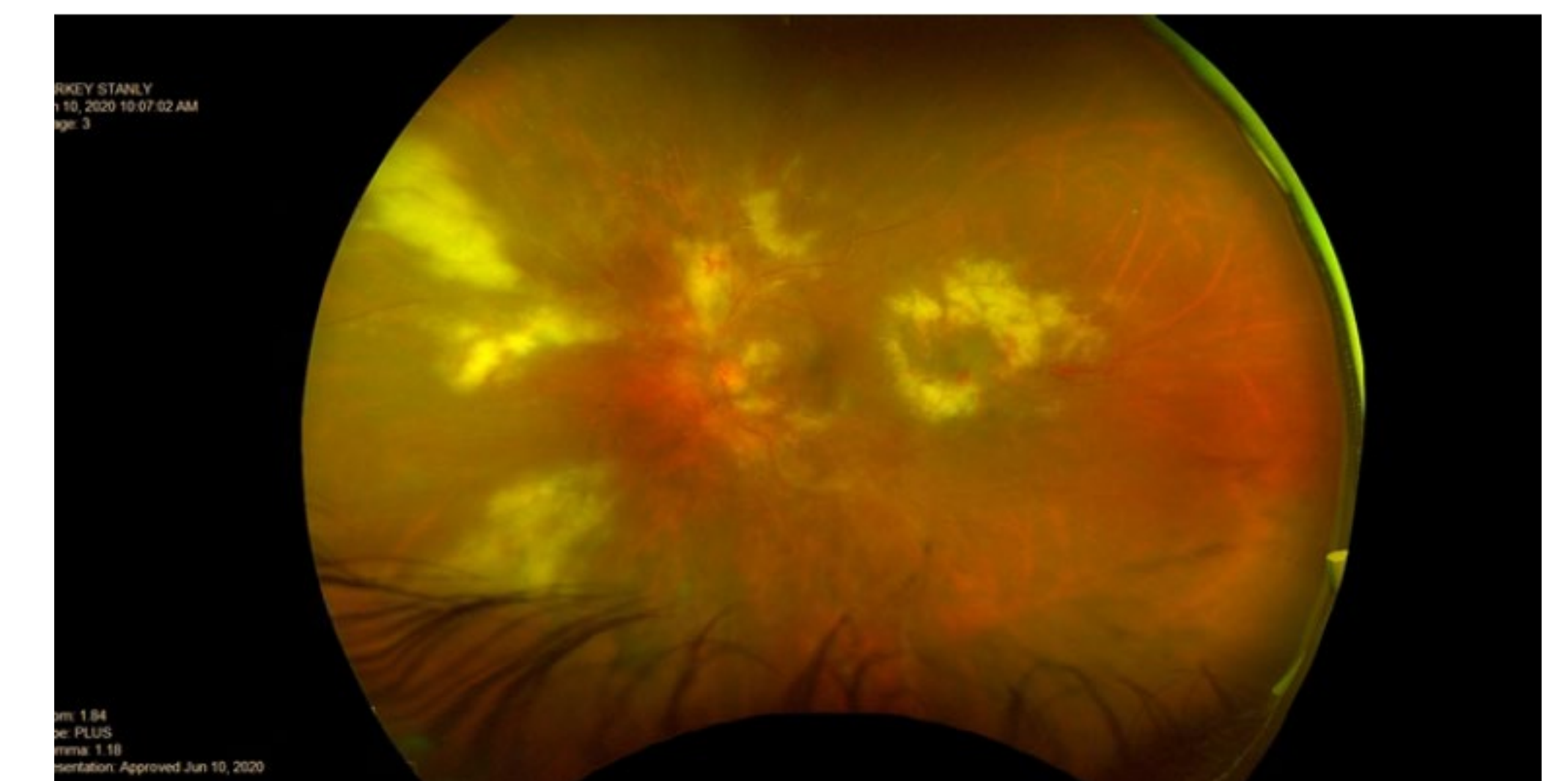


Figure 1: Right eye funduscopy revealing Several whitish fluffy retinal & subretinal infiltrates suggestive of CMV retinitis.

Conclusion

We present a rare case of CMV retinitis after receiving Obinutuzumab and Bendamustine treatment. This may be of importance in patients with lymphocytopenia, particularly CD-4 positive T cells. Patients receiving Obinutuzumab and Bendamustine with CD4+ T cells < 100 cell/microliter may benefit from routine screening for CMV reactivation or infection in terms of indirect ophthalmoscopy, CMV antigen, and DNA.