

# TITLE: RETINAL COMPLICATIONS OF MALIGNANT HYPERTENSION IN A YOUNG MALE ASSOCIATED WITH COVID-19 VACCINATION: A CASE REPORT

Authors: Leandra Duarte Bastos, Alana Viana Alencar de Oliveira, Ariana Raissa Coura Urtiga Pordeus, Heitor Augusto Ribeiro Filho.  
Department of Ophthalmology: Hospital Humberto Castro Lima, Salvador, Brazil.

- **PURPOSE:** To describe a case of hypertensive retinopathy after malignant hypertension associated with COVID-19 vaccination in a young man.
- **METHODS:** A 22-year-old man presented to our clinic reporting loss of binocular visual acuity after being hospitalized due to a sudden spike in blood pressure 4 days after receiving a dose of the COVID-19 vaccine (Coronavirus). He had no known prior medical records prior to the event. The patient had a corrected visual acuity of 20/200 in OD (right eye) and counting fingers near the face in OS (left eye). previous segment exam was normal. Fundoscopy revealed extensive intraretinal hemorrhage and exudation surrounding the optic nerve with macular involvement. OCT of both eyes showed thickening of the retinal layers, subretinal fluid and hyperreflective dots. (Figure:1) It was decided to maintain a conservative approach and monitor blood pressure with a cardiologist. The patient was subsequently admitted for emergency care for hypertensive and signs of hypoproliferative anemia (Hemoglobin: 5.3 g/dL, MCV: 103, Leukocytes: 900/mm<sup>3</sup>, Platelets:127,000/mm<sup>3</sup>). Acute renal failure was diagnosed (Creatinine: 24.11 mg/dL, Urea: 216 mg/dL), requiring emergent hemodialysis. The patient returned to our service one month later, reporting improvement in visual acuity in both eyes (20/100 OD and counting fingers at 1 meter in OS). There was an improvement in the subretinal fluid and an improvement in the central thickness in the OCT. Patient evolved with photoreceptor atrophy in OS (Figure 2).

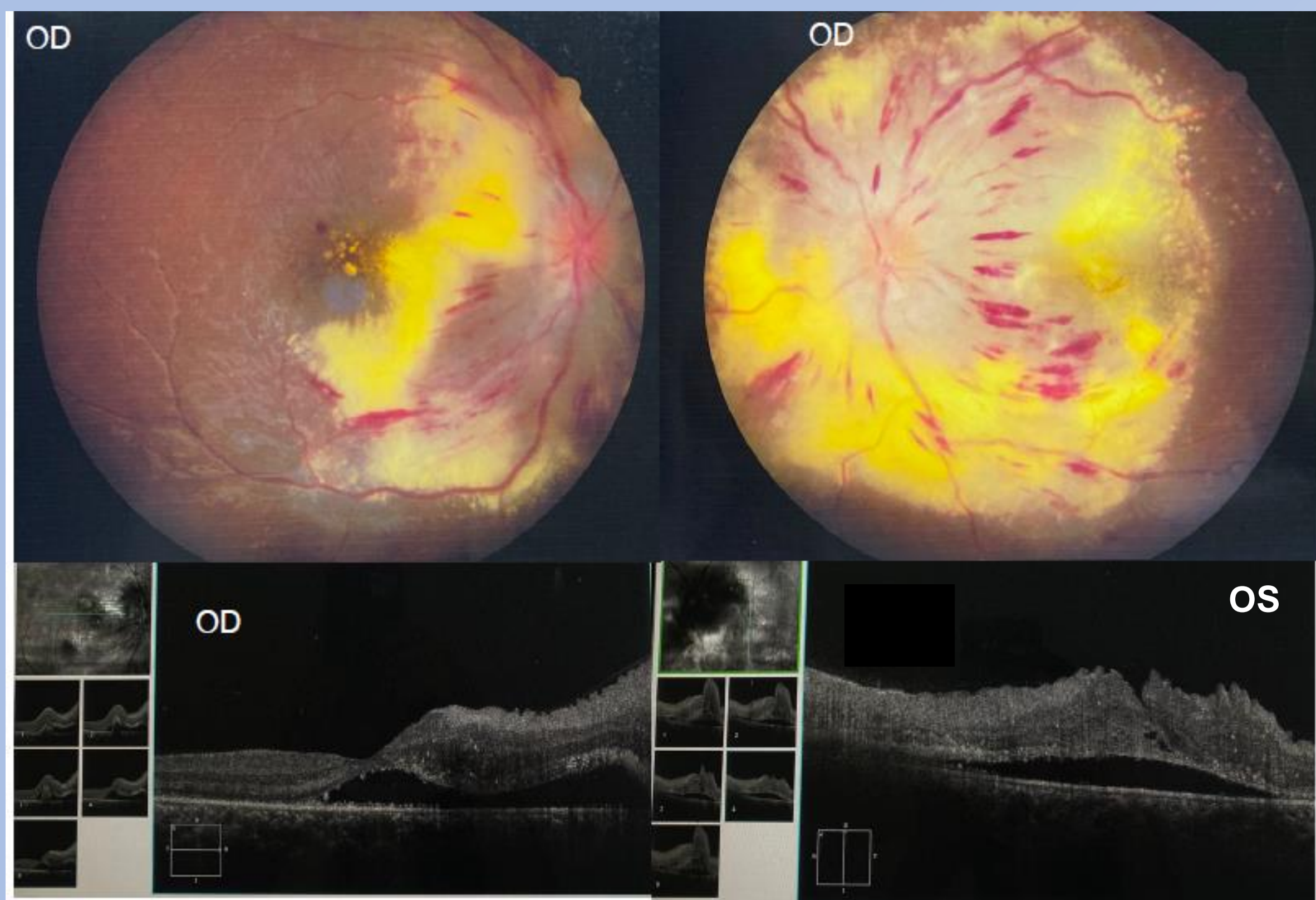


Figure:1

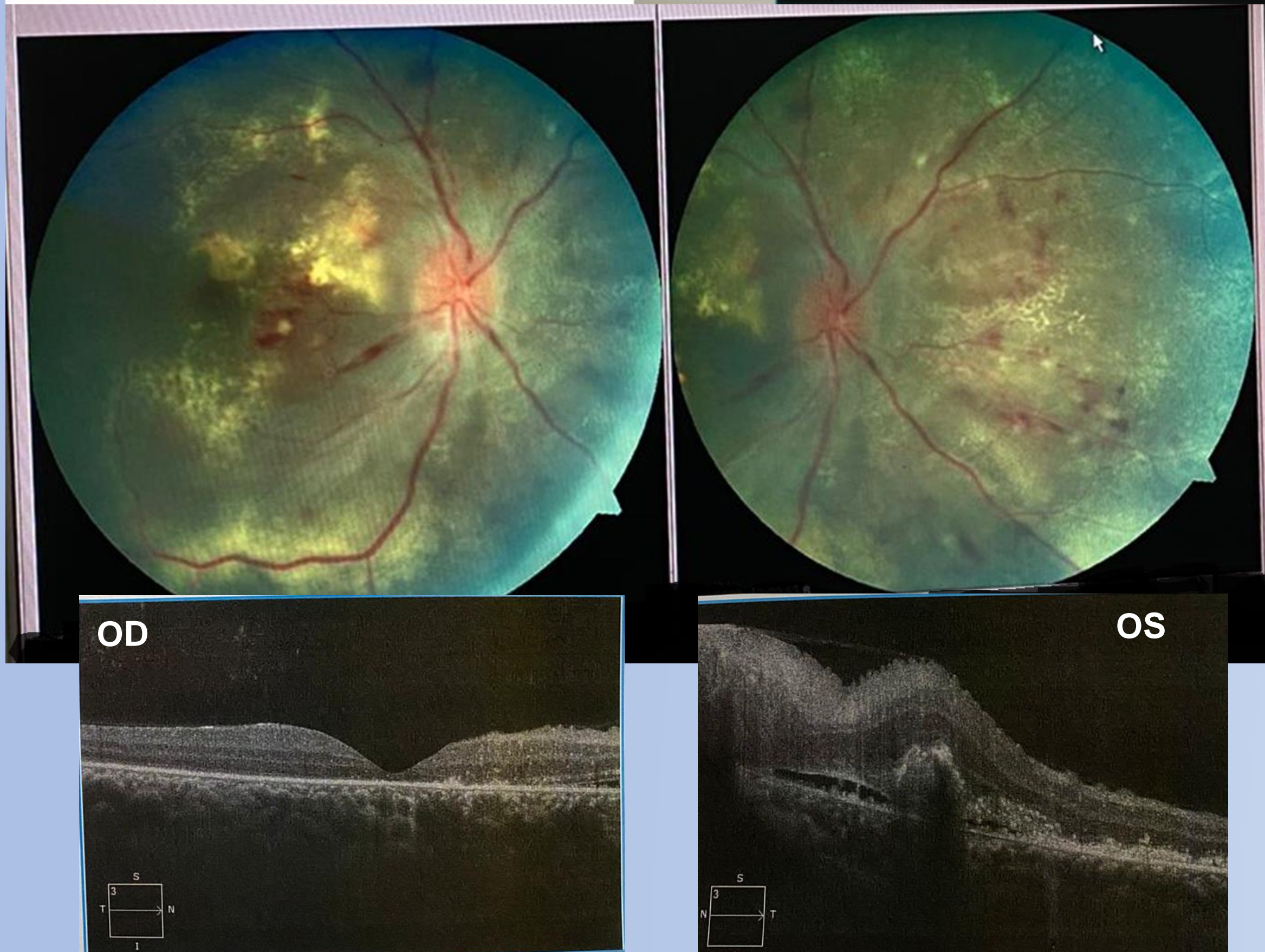


Figure:2

DISCUSSION: The clinical changes previously described are compatible with an intense inflammatory condition with multi-organ repercussions. The chronological association with the adsorbed inactivated virus vaccine (Coronavac) administration may suggest that it was a possible triggering factor. This study may help identifying possible complications of adsorbed inactivated virus vaccine, contributing for safer vaccine development.

References:

Kristina J, Polona JM, Natasa VV, Goran P & Mojca GP. An Update on COVID-19 Related Ophthalmic Manifestations. Ocular immunology and inflammation .

Gonzalez-Lopez JJ, Felix Espinar B, Ye-Zhu C. Symptomatic Retinal Microangiopathy in a Patient with Coronavirus Disease 2019 (COVID-19): Single Case Report. Ocular immunology and inflammation . 2021 May 19;29(4):642-644.

Gascon P, Briantais A, Bertrand E, Ramtohl P, Comet A, Beylerian M, Sauvan L, Swiader L, Durand JM, Denis D. Covid-19-Associated Retinopathy: A Case Report. Ocular immunology and inflammation .