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PURPOSE

To report a case of retinal macroaneurysm treated with transpupillary thermotherapy after treatment failure with antiangiogenic therapy followed by laser photocoagulation

METHODS

Review of the patient’s medical record.

CASE REPORT

VFC, male, 60 years old, reported sudden loss of vision in the right eye for 6 months. No previous events like photopsia, vomiting, or trauma. Systemic arterial hypertension in aspirin use due to high cardiovascular risk. Ophthalmological evaluation: Visual acuity: OD: 20/160, OS: 20/30, outer segment without abnormalities, IOP: 10/12mmhg. Fundoscopy below (Figure 1)

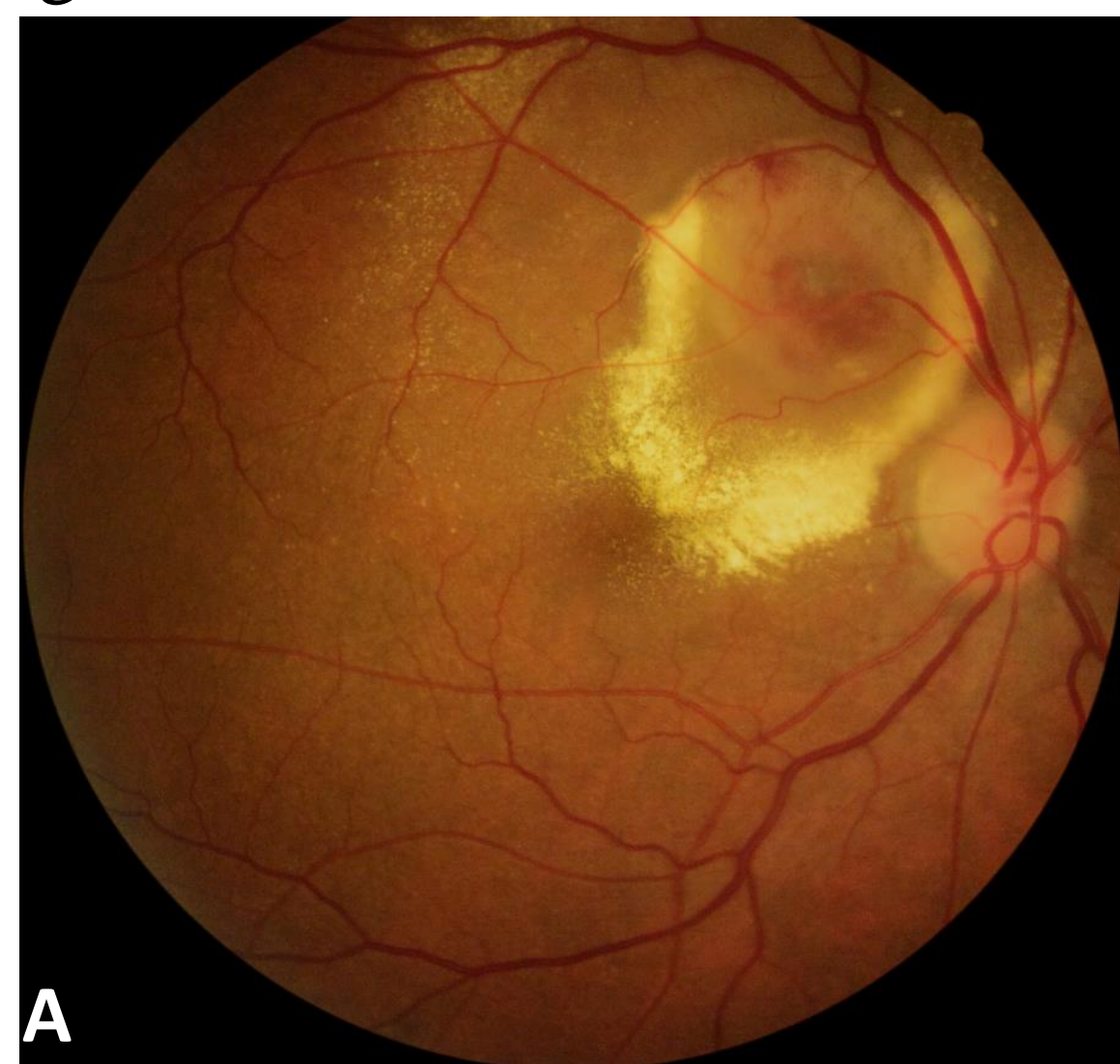


Fig.1A: OD with perimacular elevated lesion, serous detachment and adjacentes exsudates

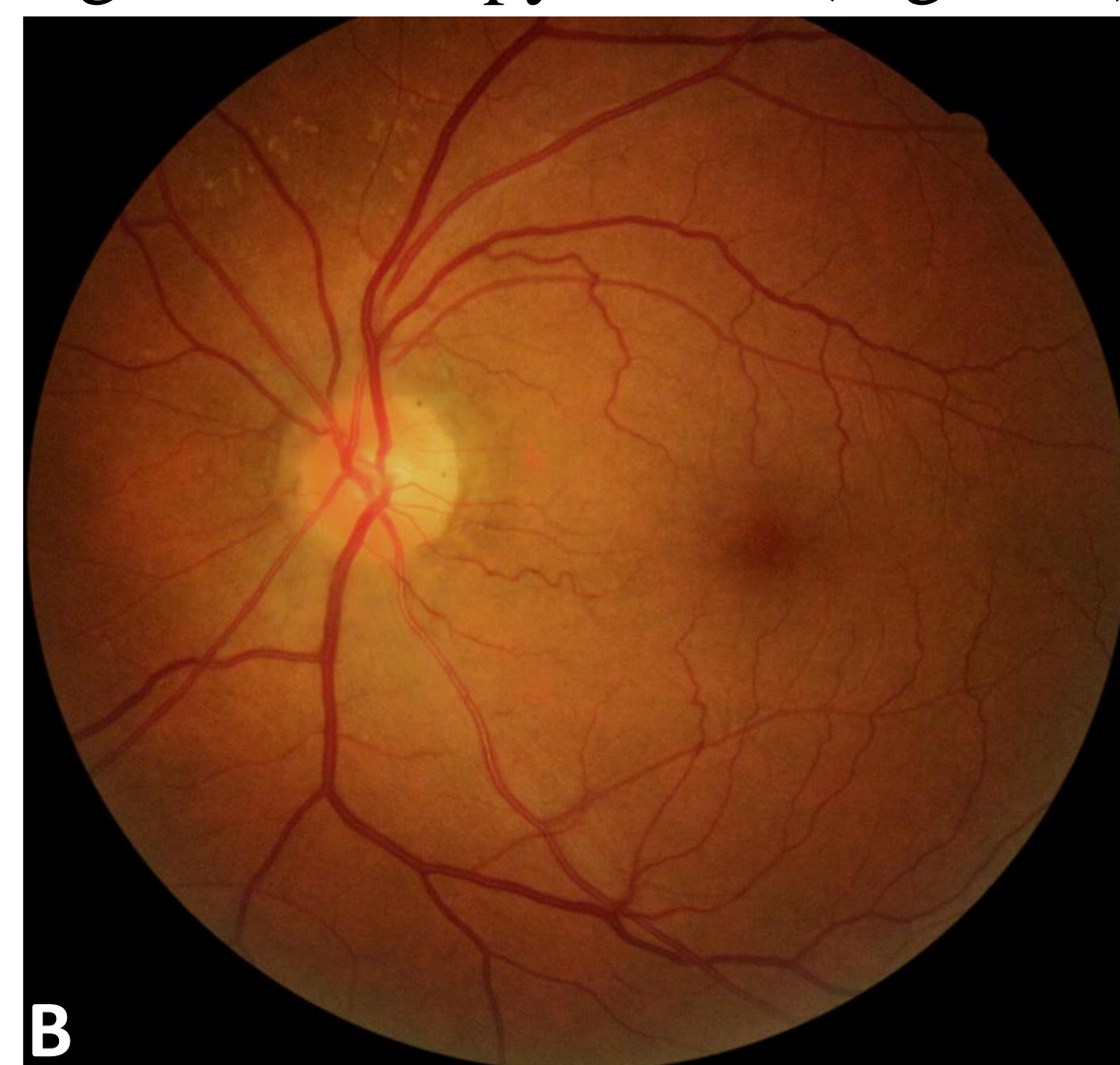


Fig.1B: OS showed normal fundoscopy

Optical coherence tomography (OCT) showed the presence of hemorrhage, exudates and subfoveal fluid (Figures 2A and 2B). Fluorescein angiography (FA) was performed, which showed a point of hyperfluorescence amid hypofluorescence due to blockade, compatible with ruptured macroaneurysm. Initially, it was decided to perform an intravitreal injection of anti-VEGF followed by laser photocoagulation.

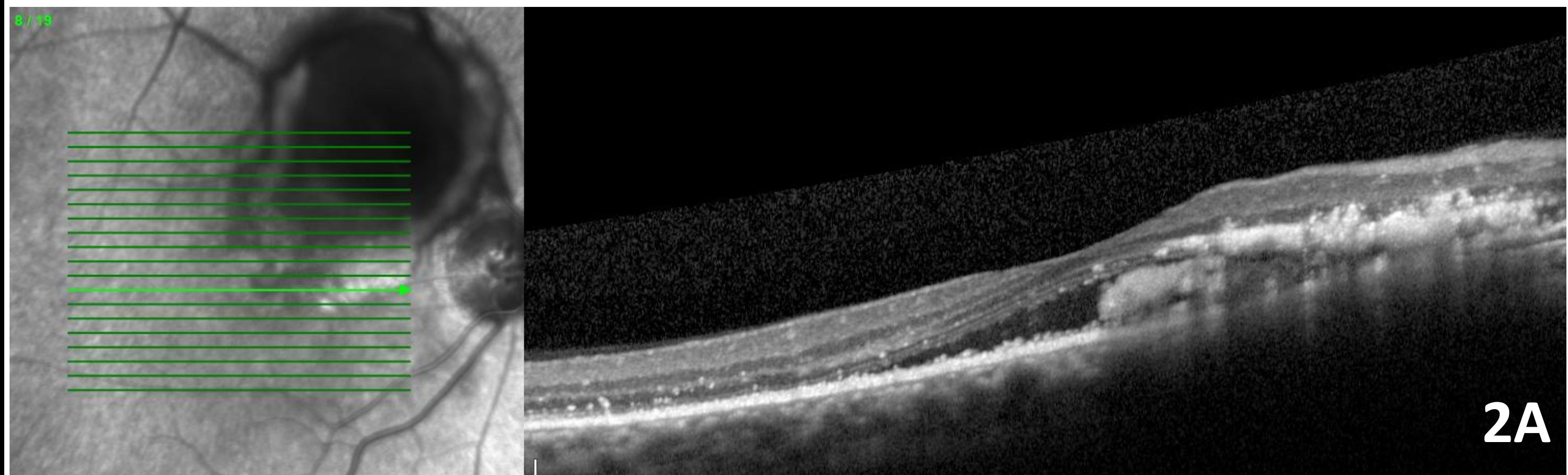


Fig 2A: OD with sufoveal fluid, hemorrhage and exsudate

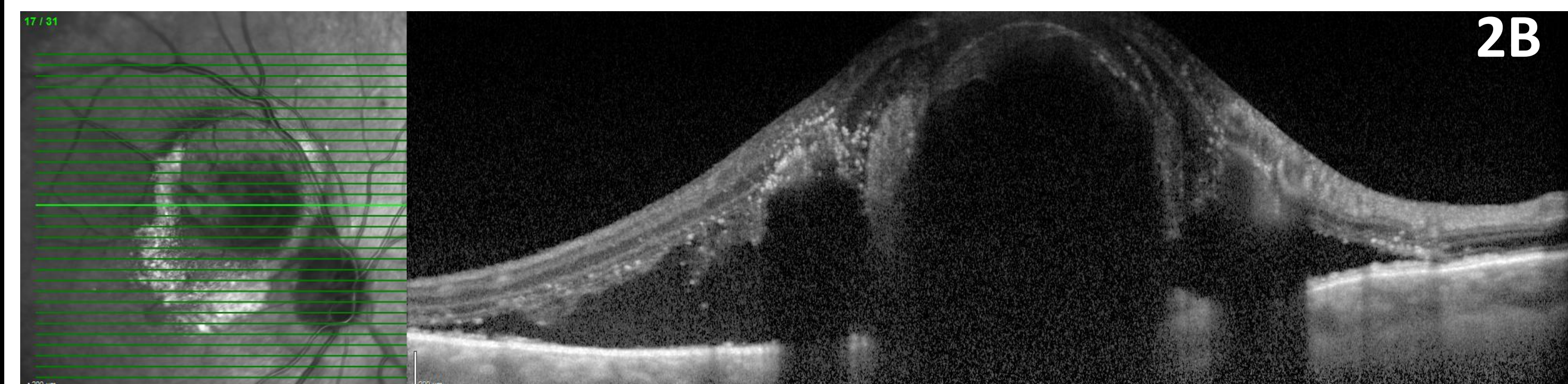


Fig 2B: OD with sulesional fluid.

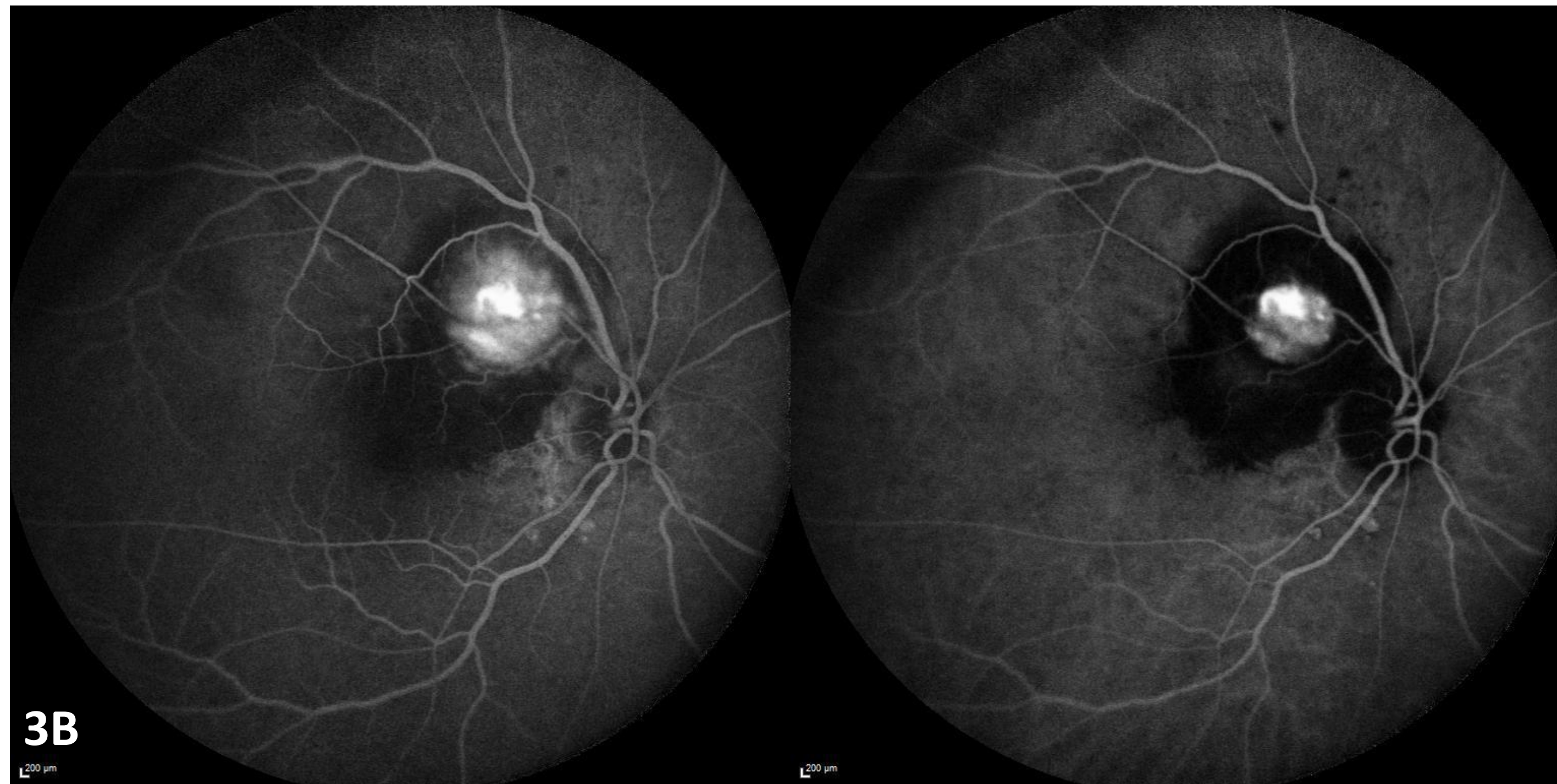
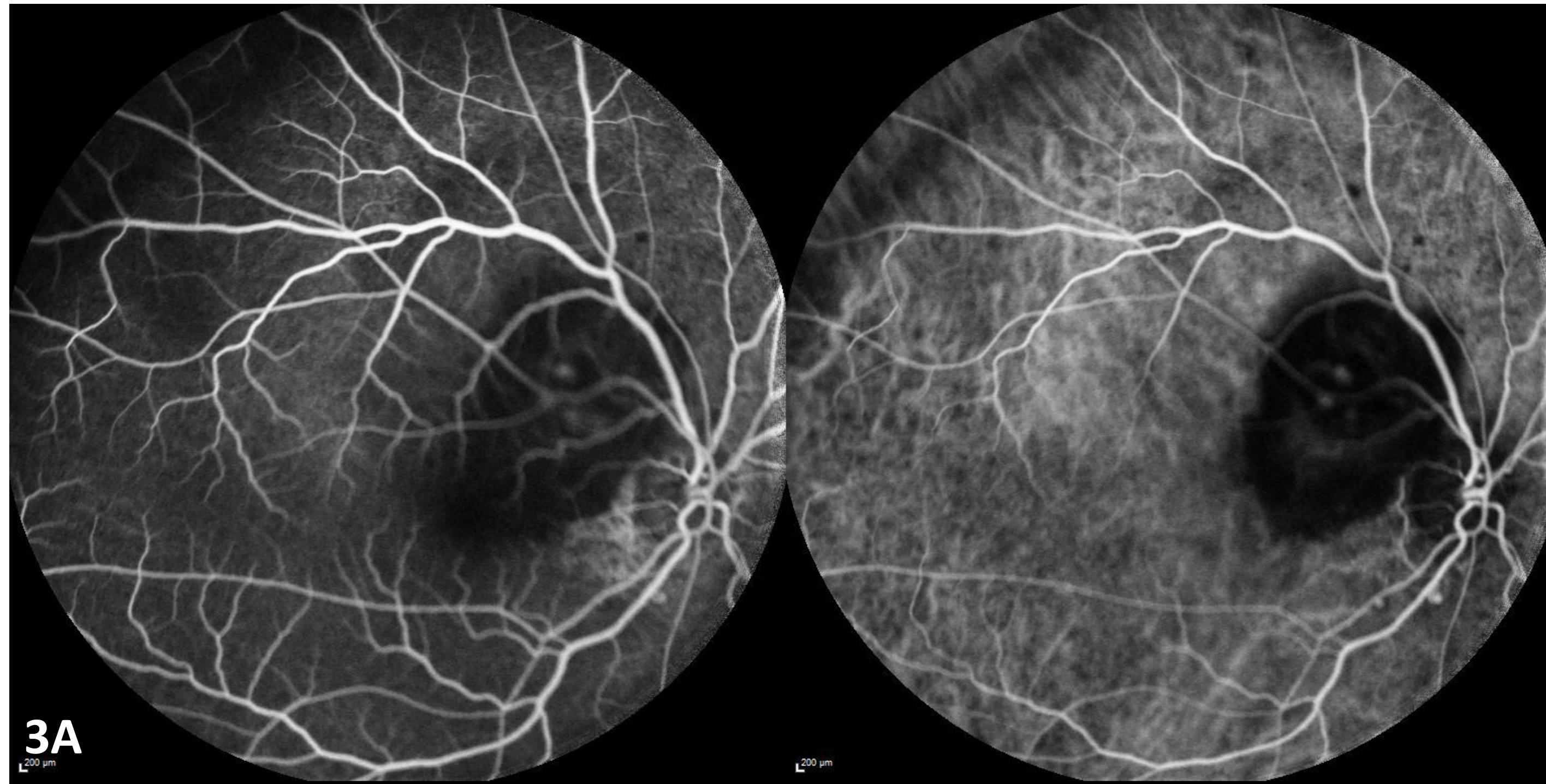


Fig 3: Angiography (3A) and Indocyanine Green (3B) showing hyperfluorescence and hypercyanescence point in late phases respectively.

After treatment, patient returned only after 90 days after treatment and there was no improvement. Actually, there was an exacerbation of the fluid and exudates, involving the fovea. Fluorescein angiography was repeated with indocyanine green (ICG) showing hyperfluorescence and a point of hypercyanescence in the upper vascular arcade compatible with a persistent macroaneurysm in the late phase (Figure 3).

OCT was repeated showing no changes in the amount of fluid, hemorrhages or exudates under the retina. Therefore, we decided for the use of thermoablation by Transpupillary Thermoablation (TTT) mediated by indocyanine green on the lesion.

During the 3-month follow-up, right visual acuity remained stable. However, there was improvement in the fundoscopic appearance, with no hemorrhages or subretinal fluid in the macula, and no hyperfluorescence or hypercyanescence in angiofluorescein or indocyanine green was seen, respectively (Figure 6). Patient continued on monthly follow-up.

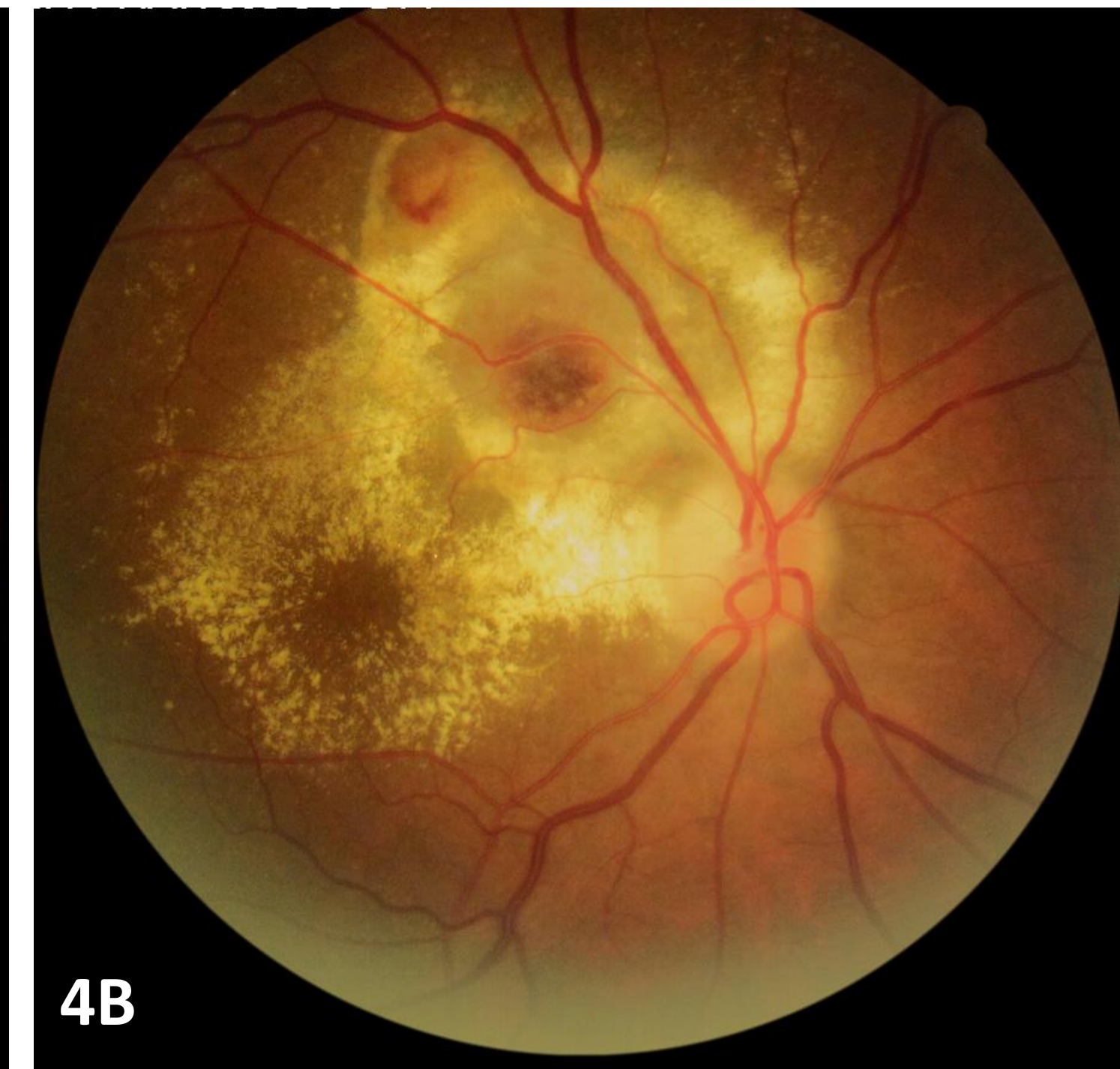
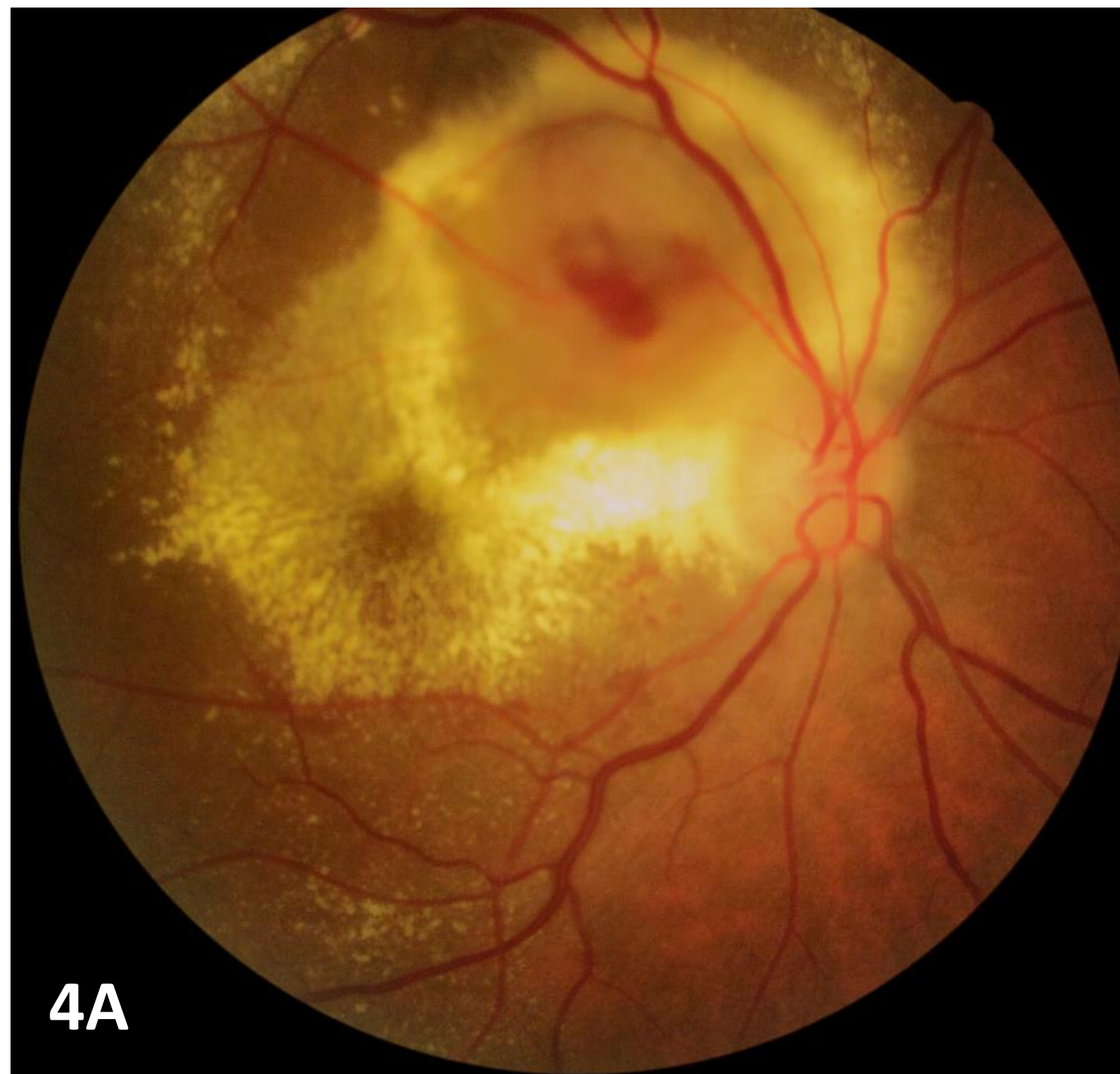


Fig.4: showing improvement in OD fundoscopic appearance before (4A) and after (4B) TTT

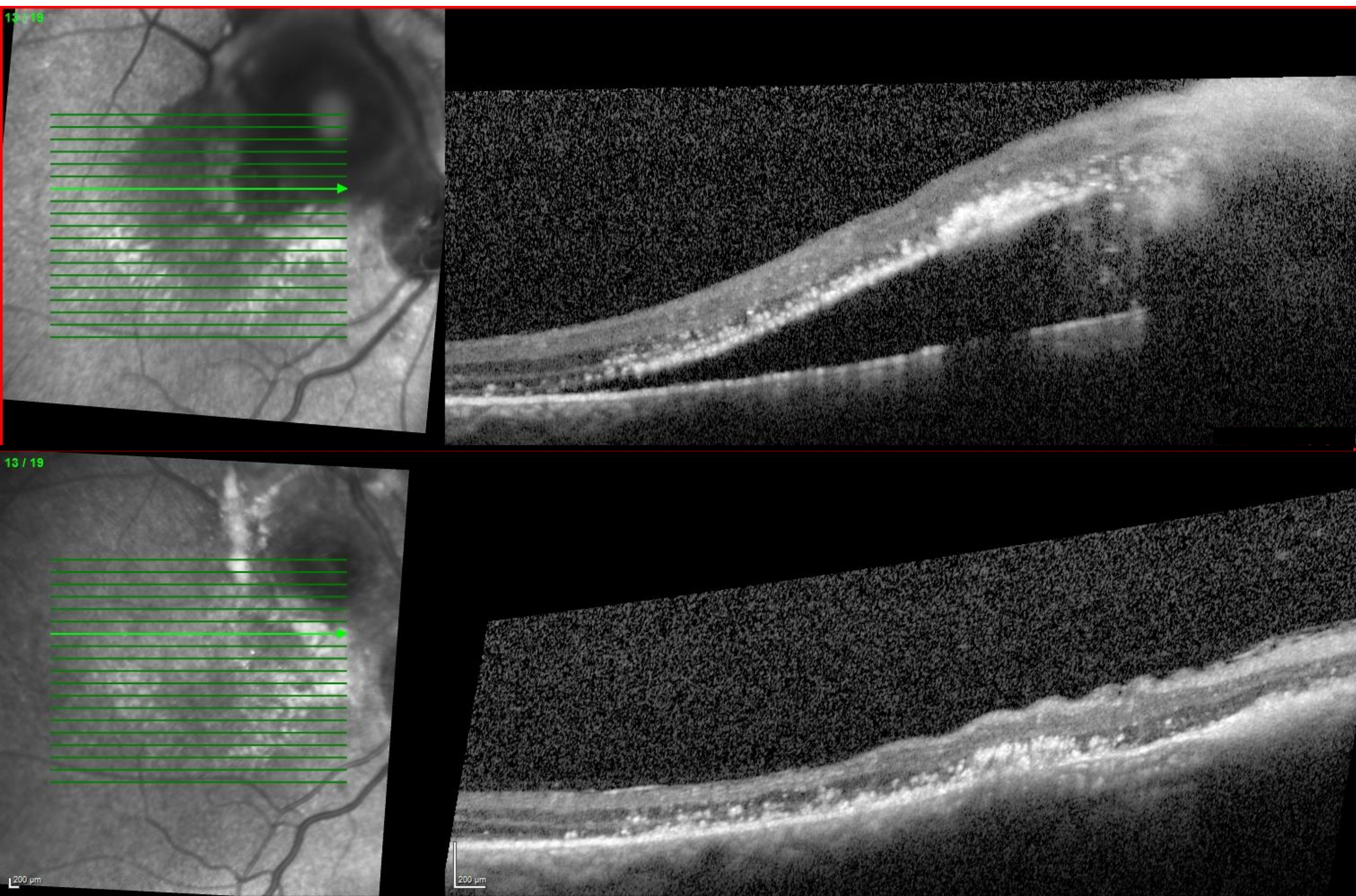


Fig.5: OD showing sublesional fluid and lesion size improvement

DISCUSSION

Retinal arterial macroaneuysms can be defined as an acquired condition that manifests as focal dilatations of retinal arterial branches. It is more associated with systemic arterial hypertension and when diagnosed, systemic vascular diseases should be investigated,

Retinal macroaneuysms can be classified as exsudative or hemorrhagic and are more often found in temporal retina. Retinal edema, telangiectasias and vascular remodeling can be associated. Although most cases resolve spontaneously, it is important to be able to recognize when treatment is needed, otherwise retinal changes may become irreversible. Usually prognosis is good, although vision loss can occur

due to macular edema, hemorrhage or rupture of the aneurysm that can cause ocular changes and, if left untreated, can lead to serious visual damage.

Diagnosis is made on clinical exam and multimodal imaging (FA, OCT and ICG). Treatment includes observation, focal photocoagulation or surgery in more serious cases.

Thus, we report a case of ruptured macroaneurysm causing visual loss and extensive exudation of subretinal fluid around the lesion, as seen in OCT, FA and ICG. In general, complicated retinal arterial macroaneuysms can be treated with moderate-intensity photocoagulation with rows adjacent to the macroaneurysm.

Anti-vegf therapy can be combined to produce vasoconstriction of the vascular wall and reduce subretinal fluid associated with laser photocoagulation, but in this case, we had no response with this therapeutic modality.

TTT is a procedure that uses an 810 nm diode laser to slowly deliver heat to the target tissue through the dilated pupil, using large dots of up to 3 mm and an exposure time of at least 60 seconds.

Since the initial therapy failed, we opted for the use of TTT, which was able to promote complete obliteration of the aneurysmal vessel, and we considered that this could be a therapeutic option for cases where conventional therapy did not show results.

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