

# Multimodal analysis and follow-up of circumscribed choroidal hemangioma with refractory macular edema

Anna Victoria Porfirio Ramos Caiado<sup>1</sup>, Gabriela Carneiro Teixeira<sup>1</sup>,  
Guilherme Garcia Criado<sup>1</sup>, Taiane Kelly Lima da Silva<sup>1</sup>, Monique  
Viana de Sousa Garcia<sup>1</sup>, Ever Ernesto Caso Rodriguez, Melina  
Morales<sup>2</sup>

Fellowship at Universidade Federal de São Paulo (UNIFESP)<sup>1</sup>  
Chief of the Ocular Oncology Ambulatory of the Universidade Federal de São Paulo (UNIFESP)<sup>2</sup>

- **Purpose:** To report two cases of refractory macular edema and exudative retinal detachment secondary to circumscribed choroidal hemangioma, treated successfully with laser photocoagulation.
- **Methods:** Multimodal analysis and follow-up of two circumscribed choroidal hemangiomas treated with laser photocoagulation in the Ocular Oncology service of the Federal University of São Paulo (UNIFESP).
- **Results:** : Two Middle-aged man, without any history of ocular and systemic pathology, presented with unilateral progressive low vision. Both cases have been diagnosed as circumscribed choroidal hemangioma and secondary macular edema. Duration of visual symptoms varied from 2 to 5 years. On examination, patient 1 presented with macular edema and exudative retinal detachment. His best-corrected visual acuity (BCVA) was 20/20 in the right eye and counting fingers in the left eye. He was first treated with intravitreal bevacizumabe injection with no visual improvement. The nonresponsive detachment was subsequently managed with two laser photocoagulation sessions, and the visual acuity improved to 20/50. Patient 2 presented with long-standing macular edema and his BCVA was also counting fingers. However, the optical coherence tomography (OCT) showed various morphologic changes in the sensory retina and retinal pigment epithelium (RPE), with ellipsoid zone disruption. After the laser photocoagulation, the visual acuity improved to 20/200, but the OCT remained with those related chronic changes that affected the visual prognose. Both patients did not report coexistent scotomas after the procedure and visual acuity improvement remained by the last follow-up visit at 3 months without recurrence.

# Patient 1

Figure 1

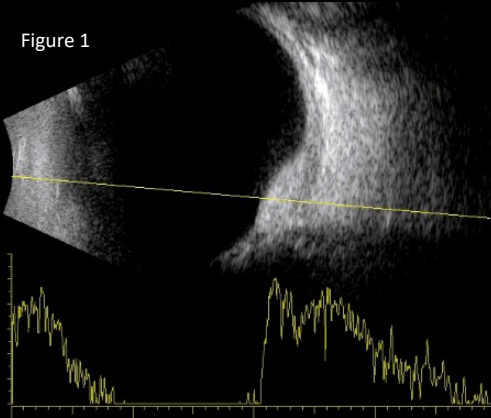


Figure 1: B-scan ultrasound of a circumscripted choroidal hemangioma reveals the hyperechoic dome-shaped lesion—highly reflective tumor

Figure 2

A: Fundus photograph of a circumscripted choroidal hemangioma showing a well-defined orange-red mass situated peripapillary. B: OCT prior to laser photocoagulation showing hyporeflective cysts in the temporal perifoveal region and large amounts of subretinal fluid

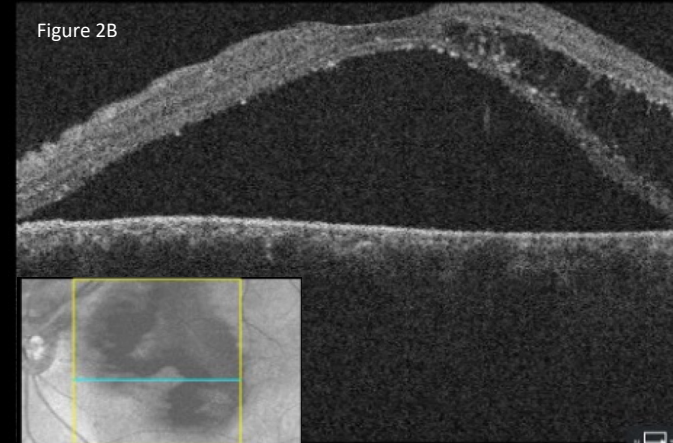


Figure 3

A: Fundus photograph after treatment showing laser photocoagulation scars in the hemangioma and resolution of macular exudates. B OCT after laser photocoagulation, with resolution of intraretinal cysts and almost complete resolution of subretinal fluid.

## BCVA

Before treatment: counting fingers

After treatment, 20/50

Figure 2A



Figure 3A

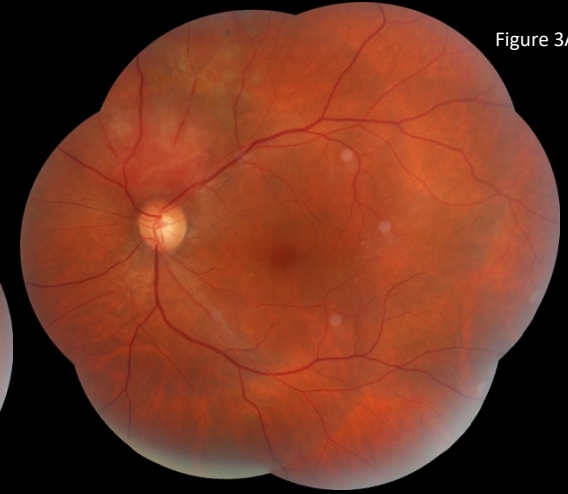


Figure 2B

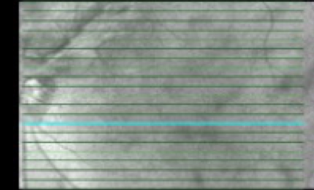
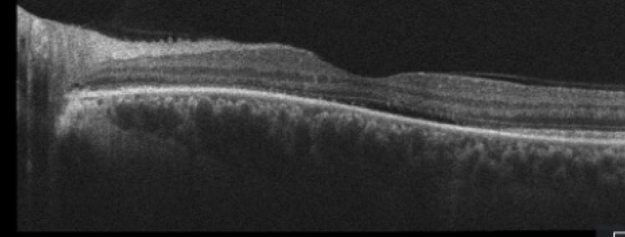


Figure 3B



## Patient 2

Figure 1

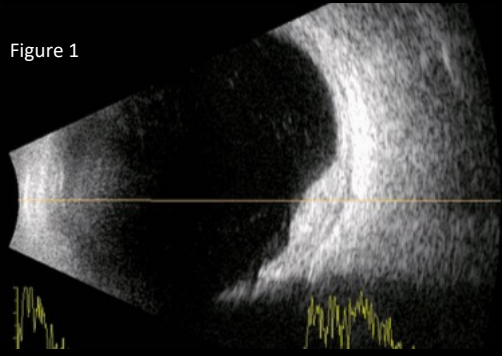


Figure 1: B-scan USG of a circumscribed choroidal hemangioma reveals the hyperechoic dome-shaped lesion

Figure 2

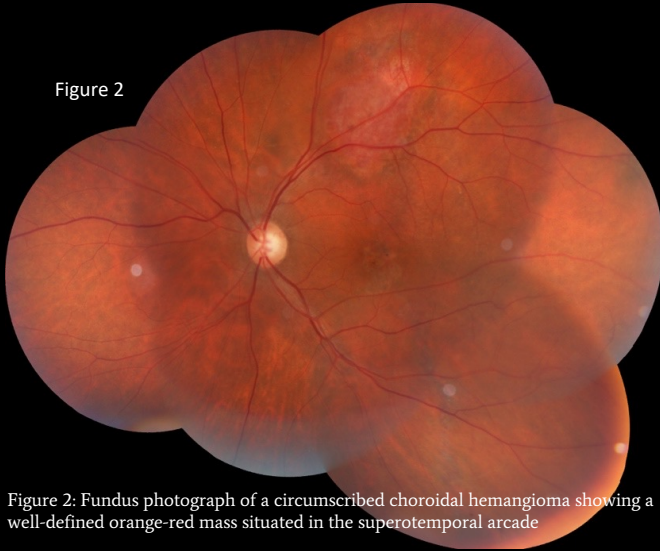


Figure 2: Fundus photograph of a circumscribed choroidal hemangioma showing a well-defined orange-red mass situated in the superotemporal arcade

## BCVA

Before treatment: counting fingers

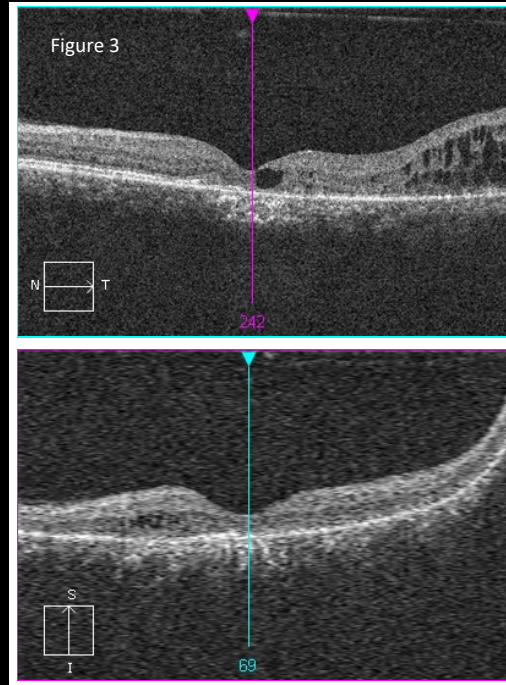


Figure 3: Macular OCT prior to laser photocoagulation, showing hyporeflective cyst in the foveal region and perimacular cystoid degeneration with loss of integrity of the ellipsoid layer, probably corresponding to chronic macular edema.

After treatment, 20/200

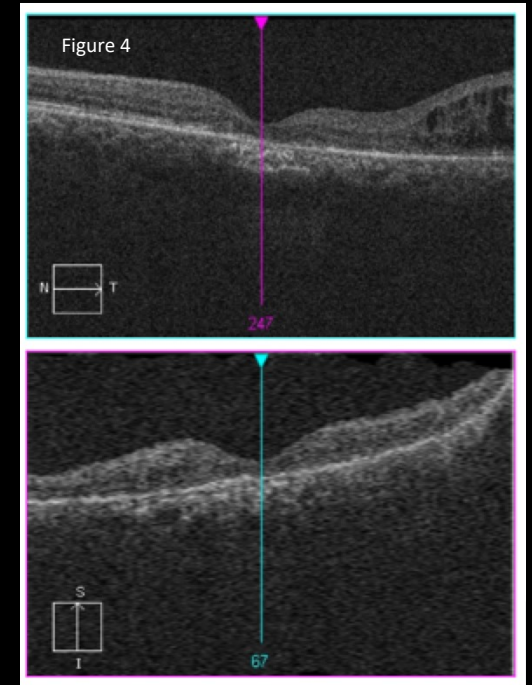


Figure 4: Macular OCT after laser photocoagulation, with persistence of degenerative cysts and resolution of foveal intraretinal cyst.

- Discussion: Photodynamic therapy (PDT) has been currently presented as the most effective method for treating symptomatic circumscribed choroidal hemangioma (4). Although it has been considered the gold standard treatment, high cost and unavailability of verteporfin in our public service makes it an infeasible treatment, also in most Brazilian centers. In the presented cases, subretinal fluid and BCVA had a satisfactory regression with laser photocoagulation treatment, therefore, it may be considered an effective noninvasive treatment modality for extrafoveal choroidal hemangiomas.

## References:

- 1- Shields JA, Shields CL. Intraocular tumors: an atlas and textbook. 2nd ed. Philadelphia: Lippincott Williams & Wilkins; p 229–45.
- 2- Karimi S, Nourinia R, Mashayekhi A. Circumscribed Choroidal Hemangioma. *J Ophthalmic Vis Res.* 2015 Jul-Sep;10(3):320-8. doi: 10.4103/2008-322X.170353. PMID: 26730320; PMCID: PMC4687268.
- 3- Shields CL, Honavar SG, Shields JA, Cater J, Demirci H. Circumscribed choroidal hemangioma: Clinical manifestations and factors predictive of visual outcome in 200 consecutive cases. *Ophthalmology.* 2001;108:2237–2248.
- 4-Tsipursky MS, Golchet PR, Jampol LM. Photodynamic therapy of choroidal hemangioma in Sturge-Weber syndrome, with a review of treatments for diffuse and circumscribed choroidal hemangiomas. *Surv Ophthalmol.* 2011;56:68–85.