

# Adhered Posterior Hyaloid Influence on Glaucoma Structural Parameters Evaluated with Spectral Domain Optical Coherence Tomography

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## Footnotes

Commercial Relationships **Fabio Lavinsky**, None; **Fernanda Mari Fujihara**, None; **Jaco Lavinsky**, None; **Nedio Castoldi**, None; **Rodrigo Lindenmeyer**, None; **Camila Benfica**, None; **Daniel Lavinsky**, None; **Helena Pakter**, None; **Paulo Augusto Mello**, None

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# Abstract

## Purpose :

The aim of this study is to evaluate if an adhered posterior hyaloid in glaucomatous eyes appreciated with Spectral Domain Optical Coherence Tomography (SD-OCT) influences the measurements of individual inner macular layers and circumpapillary retinal nerve fiber layer (cRNFL).

**Methods :** Subjects with glaucoma presenting typical optic nerve head (ONH) findings, high intraocular pressure with or without visual field (VF) damage were included. Patients underwent 24-2 perimetry (SITA standard; Humphrey Field Analyzer; Zeiss) and SD-OCT (Spectralis; Heidelberg Engineering). Subjects were divided into 2 groups: with and without adhered posterior hyaloid. Subjects were also divided into three stages based on the mean deviation (MD) of the VF:  $\geq -6$  dB; between  $< -6$  dB and  $\geq -12$  dB; and  $< -12$  dB (early, moderate and severe), respectively. Automated individual inner macular layers and the summation of layers were checked for proper segmentation and plotted using the average of the sectors from the ETDRS Grid circles (diameters: center 1mm, inner circle 3mm, outer circle 6mm). Statistical analysis was performed using generalized estimating equations to allow for clustered observations. Age and visual field aforementioned severity category were accounted in the model.

## Results :

95 eyes (60 subjects) qualified for the study. The mean age was  $68.62 \pm 9.64$ . 39 eyes were in the non-adhered posterior hyaloid group and 56 in the adhered posterior hyaloid group (Table 1). The VF severity distribution between non-adhered and adhered posterior hyaloid was: 16 and 36 for early; 9 and 9 for moderate; and 14 and 11 for severe glaucoma, respectively. The presence of adhered posterior hyaloid was not significantly associated with the cRNFL thickness ( $p= 0.128$ ) and with the thickness of the following macular layers (inner and outer circles of the ETDRS grid respectively): ganglion cell layer (GCL) ( $p=0.082$  and  $p=0.306$ ); inner plexiform layer (IPL) ( $p=0.069$  and  $p=0.143$ ), ganglion cell layer/inner plexiform layer (GCIPL) ( $p=0.072$  and  $p=0.223$ ).

**Conclusions :** The presence of an adhered posterior hyaloid wasn't significantly associated with the macular inner layers and cRNFL when accounting for age and visual field severity stage. Longitudinal studies are warranted to determine if changes in the vitreoretinal interface impact the parameters evaluated in glaucoma monitoring.

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