# Choroidal vascularity index

The choroidal vascularity index (CVI) is a relatively new parameter, calculated off optical coherence tomography (OCT) images, for the quantitative evaluation of choroid vascularity. It is defined as the ratio of vascular area to the total choroidal area, presented as a percentage.

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In a cross-sectional study, Özcan et al. examined 17 eyes in 9 patients with pituitary macroadenomas who had undergone transsphenoidal pituitary surgery due to chiasmal compression. They also compiled data from 17 of in 17 healthy subjects. ImageJ 1.51 software processing (National Institutes of Health, Bethesda, Maryland, USA) was used for the binarization of optical coherence tomography scans. The CVI was computed as the ratio of luminal area to total choroidal areal. The CVI, OCT, and VF parameters were analyzed in One-Way Repeated Measures ANOVA to determine significant changes in measurements during the postoperative course.

The mean peripapillary inferior and temporal quadrant CVIs were significantly lower in the eyes of patients with pituitary macroadenoma compared to controls (46.0 ± 0.03 versus. 42.8 ± 0.04, $p = 0.02$; 45.8 ± 0.03 Versus. 42.3 ± 0.04, $p = 0.02$). In repeated measure analysis, there was a significant effect of transsphenoidal microscobic pituitary surgery on peripapillary inferior quadrant CVI and BCVA, $F(1.3, 21.5) = 6.62$, $p = 0.01$ and $F(1.8, 29.7) = 7.8$, $p < 0.005$, respectively.

This study suggests that PMa with chiasmal compression may lead to significant changes in the peripapillary CVI. Pituitary surgery had a favorable significant effect on the peripapillary choroidal vascular network and BCVA. Furthermore, optical coherence tomography is a helpful technique for quantifying the alterations of peripapillary CVI during the preoperative and postoperative course [1].

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Özcan Y, Kayıran A, Kelestimur F, Ekinci G, Türe U. Changes in the peripapillary and subfoveal choroidal vascularity index after transsphenoidal surgery for pituitary macroadenoma. Int Ophthalmol. 2022 May 23. doi: 10.1007/s10792-022-02366-7. Epub ahead of print. PMID: 35604621.