Purpose: To evaluate choroidal structure changes using choroidal vascularity index (CVI) in type 2 diabetic patients without diabetic retinopathy (DR) compared to non-diabetic subjects.

Methods: Cross-sectional study in which spectral-domain optical coherence tomography scans using enhanced depth imaging mode were performed. A 1500µm subfoveal choroidal area (total choroidal area [TCA]) was segmented into luminal area (LA) and stromal area (SA) using an image binarization technique. CVI percentage was calculated as the proportion of LA to TCA.

Results: One hundred twenty-five diabetic patients without DR (63 males), and 50 non-diabetic patients (20 males) were included in this study. In diabetic patients, choroidal thickness (CT) was thicker (254.24 [63.66] vs 237.83 [55.27] µm). Mean TCA was 1.14 (0.34) mm² in non-diabetic and 1.18 (0.32) mm² in diabetic patients. Univariable analysis of SA and CVI did not show statistically significant differences (0.40 [0.10] vs 0.42 [0.13] mm² and 65.29 [3.73] vs 65.03 [2.98] %, respectively). Linear regression models were used to identify ocular and systemic factors associated with TCA, SA and CVI. TCA and SA were negatively associated with axial length (p = 0.029 and 0.025, respectively) and positively associated with CT (p < 0.001). CVI was only negatively associated with CT (p < 0.001).

Conclusion: Although CT was thicker in diabetic patients without DR, SA and CVI do not present significant differences. Independently of the patients group, TCA and SA were negatively associated with axial length and positively with CT, and CVI was negatively associated with CT.