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Evaluation of Macular Vessels Density Changes in Patients with Primary Open Angle Glaucoma by Swept-source Optical Coherence

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PURPOSE

This study aimed to compare the macular vessels density changes in patients with primary open- angle glaucoma with control subjects by Swept source optical coherence tomography angiography.

Design

This was an observational cross-sectional study.

Patients and Methods

This was a comparative cross-sectional study included 40 eyes with POAG and 40 control subjects. Detailed ophthalmic examination was done including measurement of intraocular pressure and visual field evaluation by using Humphrey (2003 Carl Zeiss Meditec, Germany). All subjects were scanned using Swept source OCTA (Triton, Topcon, Tokyo, Japan). Quantitative analysis of the retinal vasculature was achieved by evaluating vessel density as the ratio of the retinal area occupied by vessels at the superficial and deep retinal layer.

RESULTS

The mean vessel density ratio in the superficial vascular plexuses (SVP) was 32.77 ± 3.79 and 42.45 ± 1.99 in POAG patients and control, respectively ($p<0.001$), the mean vessel density of SVP was statistically significantly lower in POAG patients. The mean vessel density in the deep vascular plexuses (DVP) ratio was 36.37 ± 4.13 and 44.48 ± 0.91 in POAG patients and control, respectively ($p<0.001$). The mean vessel density of DVP was statistically significantly lower POAG patients.

CONCLUSION

Macular superficial and deep vessel density by Swept-source optical coherence tomography angiography showed statistically significant decrease in POAG patients.

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