

Microvascular alterations in patients with branch retinal vein occlusion: An optical coherence tomography angiography study

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PURPOSE

The purpose of this study was to evaluate the changes of foveal avascular zone (FAZ) area and vessel density (VD) in superficial (SCP) and deep capillary plexus (DCP) in association with functional changes in patients with branch retinal vein occlusion (BRVO).

METHODS

- The study included 32 patients (32 eyes) with macular edema due to BRVO, and 25 control subjects (25 eyes).
- All participants underwent best-corrected visual acuity (BCVA) measurement, optical coherence tomography (OCT) and OCT angiography (OCTA) at baseline (before any treatment).
- Comparison of OCTA parameters between BRVO eyes and fellow eyes, as well as between fellow eyes and controls was performed.

RESULTS

- There was a statistically significant decrease in vessel density (VD) in the foveal and parafoveal area in both superficial and deep capillary plexus in eyes with BRVO compared to fellow eyes ($p < 0.001$ for all comparisons) and compared to control eyes ($p < 0.001$ for all comparisons).
- Fellow eyes did not differ in VD in both foveal and parafoveal area compared to controls.
- There was also a statistically significant increase in the foveal avascular zone (FAZ) area between eyes with BRVO and fellow eyes ($p = 0.041$), as well as between BRVO eyes and controls ($p = 0.023$).
- Fellow and control eyes did not differ significantly in terms of FAZ area.

CONCLUSIONS

- The OCTA reveals that the VD and the FAZ area in BRVO eyes have been impaired compared to fellow eyes and control eyes, while fellow eyes did not differ compared to controls.