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CHOROIDAL VASCULAR CHANGES SECONDARY TO OCULAR IRRADIATION

Oral

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Purpose:

To describe progressive choroidal vascular changes secondary to ocular irradiation for uveal melanoma (UM).

Methods:

Sixty consecutive eyes affected by primary UM treated with Iodine-125 brachytherapy were enrolled. An age-matched control group was included. Each patient underwent full ophthalmological examination, including best-corrected visual acuity, ophthalmoscopy, fundus photography, Spectral Domain OCT and OCT Angiography(OCTA). Qualitative and quantitative vascular features of the choriocapillaris were analyzed on OCTA. The aspect of the large choroidal vessel was also notified. Moreover, choroidal vascular index(CVI) -the ratio between the luminal choroidal area (LCA) and the total choroidal area (TCA)- was calculated in the subfoveal 1000 µm area. Follow-up was performed after 1, 3 and 6 months and every 6 months thereafter.

Results:

Signal void spots were found at the level of choriocapillaris in 54 patients (90%). Rarefaction and dilation of the choroidal vessels were detected in 57 (94%) and 25 (41%) patients, respectively. At the choriocapillaris level, the vascular density progressively decreased ($p<0.0001$). The irradiated eyes exhibited a significantly lower CVI value in comparison to controls ($p<0.0001$).

Conclusions:

Radiation side effects are not limited to the retinal vessels but also involve choroidal circulation. These findings carefully suggest that choroidal vasculature changes occur early and precede the retinal ones.