RETINA ROUNDUP

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FEATURES OF VASCULATURE IN RETINA ARTERIAL MACROANEURYSM PATIENTS USING OPTICAL COHERENCE TOMOGRAPHIC ANGIOGRAPHY

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Purpose: To assess morphologic characteristics of retinal arterial macroaneurysm (RAM) and their vascular changes using optical coherence tomographic angiography (OCTA).

Methods: This observational study included thirty-one eyes of twenty-nine participants diagnosed with RAM based on fundus fluorescein angiography (FFA) in Tianjin Medical University Eye Hospital. Multimodal imaging modalities, including fundus photography, fluorescein angiography, and OCTA, were used to examine RAMs. The demographic and clinical characteristics of the RAMs were recorded.

Results: Depending on the FFA examination, forty cases of RAM were confirmed in twenty-nine patients. Twenty-three patients were female (79%) and six patients were male (21%). Two patients had binocular RAM and four eyes had more than one RAMs. Relying on the OCTA technology, RAMs have four different vascular morphology types (i.e., distended, meshed, malformed, and occult types). In the distended type, round or encircled thrombi caused asymmetrical or symmetrical distention of retinal arteriolar, leading to separate true lumen and false thrombus lumen in RAM. In meshed type, the meshed or dendritic vascular network around the RAM was likely to be the neovascularization due to the ischemia and hypoxia of the arteriolar wall. Finally, in the malformed and occult type, the RAM usually regressed, and the retinal arterioles were remodeled to distorted or normal arterioles accompanied by capillary degradation.

Conclusion: Relying on the OCTA technology, we found that the RAMs have four different types of vascular morphology. Each group of RAM has different vascular features. The application of OCTA in RAM patients furthers our understanding of the vasculature of RAMs.

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THE FOVEA-PROTECTIVE IMPACT OF DOUBLE-LAYER SIGN IN EYES WITH FOVEAL-SPARING GEOGRAPHIC ATROPHY AND AGE-RELATED MACULAR DEGENERATION.

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Purpose: The purpose of this study was to investigate the impact of double-layer sign (DLS) on geographic atrophy (GA) progression in eyes with foveal-sparing GA and age-related macular degeneration (AMD).

Methods: This is a retrospective, consecutive case series of eyes with foveal-sparing GA secondary to AMD with more than 6 months of follow-up. The size of the foveal-sparing area was measured on the fundus autofluorescence images at the first and last visits. Each eye was evaluated for the presence or absence of DLS inside the foveal-sparing area. We graded eyes based on the presence of DLS within the foveal-sparing area and compared the progression of GA between two groups (DLS (+) versus DLS (-).

Results: We identified 25 eyes with foveal-sparing GA with at least 2 follow-up visits (average interval = 22.7 ± 11.8 months between visits). The mean foveal sparing area was 1.74 ± 0.87 mm2 (range = 0.42-4.14 mm2) at baseline and 1.26 ± 0.75 mm2 (range = 0.25-2.92 mm2) at the last visit. Seventeen eyes (65.3%) were graded as DLS (+) within the foveal-sparing area. Square root progression of GA toward the fovea was significantly faster in the DLS (-) eyes (0.149 ± 0.078 mm/year) compared to the DLS (+) group (0.088 ± 0.052 mm/year; P = 0.04).

Conclusions: The DLS (-) group showed significantly faster centripetal GA progression than the DLS (+) group. Our data suggest that the presence of DLS in the spared foveal area could be a protective factor against foveal progression of GA in eyes with AMD.

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3. Retina. 2022 Oct 1;42(10):1874–1882.

CLINICAL FEATURES AND PROGNOSIS IN IDIOPATHIC EPIRETINAL MEMBRANES WITH DIFFERENT TYPES OF INTRARETINAL CYSTOID SPACES

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Purpose: To observe the characteristics and prognosis of different types of intraretinal cystoid spaces in idiopathic epiretinal membranes (iERMs).

Methods: Two hundred and seven consecutive patients with symptomatic iERM who underwent vitrectomy between September 2016 and December 2019 were included. According to spectral-domain optical coherence tomography images, intraretinal cystoid spaces were classified into cystoid macular edema (CME) and microcystic macular edema (MME). Other optical coherence tomography characteristics, including ectopic inner foveal layers, central foveal thickness, and interdigitation zone integrity, were also evaluated.

Results: Intraretinal cystoid spaces were presented in 30.1% of the iERMs, 21.5% were CME-type, 66.2% were MME-type, and 12.3% were combined-type. Compared with CME, eyes with MME-type and combined-type showed a significantly lower best-corrected visual acuity (BCVA) preoperatively and postoperatively. Cystoid macular edema is always presented in earlier stages (92.9%) and has no significant effects on BCVA (PStage I = 0.927, PStage II = 0.985). Conversely, MME is the primary type in advanced stages associated with a longer duration of symptoms (P = 0.037) and lower preoperative BCVA (P = 0.008). After surgery, cystoid spaces were newly occurred in 33 eyes (21.6%), with no effects on BCVA (P = 0.668). In the multiple regression analysis, the presence of MME was a risk factor for preoperative BCVA (P = 0.001). However, it is not an independent predictor for the postoperative VA.

Conclusion: Our research further proved that MME is an adverse factor for preoperative and postoperative VA in iERMs. Moreover, we underlined the importance of distinguishing between CME and MME, which may affect prognosis differently.

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4. Indian J Ophthalmol. 2022 Oct;70(10):3610-3616.

COMPARISON OF THREE TECHNIQUES OF HARVESTING FULL-THICKNESS RETINAL TISSUE FOR LARGE OR PERSISTENT MACULAR HOLES

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Purpose: To evaluate the success rate of autologous retinal graft (ARG) for the closure of full-thickness macular holes (MHs) and compare the outcomes of three different techniques of harvesting the graft.

Methods: Clinic files of all patients who had undergone ARG for MH using intraocular scissors, membrane loop, or retinal punch to harvest retinal tissue were retrospectively reviewed. All patients were evaluated for MH closure, retinal reattachment, and visual improvement.

Results: Twenty-two eyes of 22 patients were included. ARG was done for 16 eyes (72.7%) with failed, large persistent MH, and six eyes (27.3%) also underwent simultaneous repair of retinal detachment. The basal diameter of MH was 1103.67 ± 310.09 (range 650-1529) μm. Intraocular scissors were used in 10 eyes (45.5%), a membrane loop in five eyes (22.7%), and a retinal punch in seven eyes (31.8%). Silicone oil tamponade was used in seven (31.8%) eyes and gas in 15 (68.1%) eyes. The follow-up ranged from 6 to 18 months. The hole closure rate was 72.7% (16/22). Visual improvement was noted in 18 eyes (81.8%). Retinal reattachment was seen in all eyes. Good graft integration with the surrounding area was seen in 17 eyes (77.3%). Graft retraction was seen in four eyes (18.18%) and graft loss in one eye (4.55%). No significant differences were noted among the three groups.

Conclusion: ARG is successful in closing large, failed MH with and without retinal detachment. A membrane loop and retinal punch are equally useful in harvesting the graft, but scissors are preferable in case the retina is detached. With all three techniques, integration of the graft with the surrounding tissue can be achieved.

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CHARACTERISTICS AND TREATMENT RESPONSE OF POLYPOIDAL CHOROIDAL VASCULOPATHY IN HIGHLY MYOPIC EYES

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Background: To compare the characteristics and treatment responses of polypoidal choroidal vasculopathy (PCV) between highly myopic and non-highly myopic eyes.

Methods: This retrospective cohort study included patients diagnosed with PCV at the clinic of National Taiwan University Hospital between 2013 and 2019. The diseased eyes were grouped per refractive error and axial length at diagnosis. Imaging data were used to retrieve the PCV characteristics, and electronic medical records were used to retrieve the treatment responses.

Results: Among 116 eyes with PCV, 11 eyes of 10 patients were highly myopic; seven of these patients were women. All highly myopic eyes showed a thin subfoveal choroid, while three eyes had a pachychoroid phenotype with significant focal choroidal thickening. After treatment with either intravitreal anti-vascular endothelial growth factor (VEGF) injections, photodynamic therapy (PDT), or both, best-corrected visual acuity was better in the high-myopia group at 1 year. Visual acuity at presentation and the presence of feeder vessels were found to be predictors of the visual outcome.

Conclusions: In this study we reported, to the best of our knowledge, the largest cohort of PCV in highly myopic eyes to date. Female predominance, lower incidence of subretinal haemorrhage, and a thin choroid with a focal pachychoroid phenotype were found to characterise PCV in highly myopic eyes. Visual acuity transiently improved after either anti-VEGF monotherapy or combination therapy with PDT.

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