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ANALYSIS OF SUPRA-RPE GRANULAR DEPOSITS IN FULL THICKNESS MACULAR HOLES USING ADAPTIVE OPTICS IMAGING

Oral

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Purpose:

To describe morphology of supra-RPE granular deposits found at the base of Full Thickness Macular Hole (FTMH) by means of a multimodal imaging approach including Adaptive Optics

Methods:

Eyes with diagnosis of FTHM underwent multimodal imaging including Optic Coherence Tomography (OCT), 3x3 mm En-Face OCT through OCT-Angiography and Adaptive Optics (AO) Imaging. Supra-RPE granular deposits were isolated with En-Face OCT through segmentation at FTMH base. Acquisitions were binarized and compared to findings at AO to determine topographical correspondence. Mean reflectivity of Supra-RPE granular deposits was measured compared to background at AO. Identification of these findings was assessed in 2 areas: within the projection of minimum MH diameter (inner FTMH base area); between the inner FTMH base area and the outer base of the FTMH (outer FTMH base area)

Results:

26 eyes from 24 patients were recruited in the study, with 18 eyes displaying presence of distinct supra-RPE granular deposits (69%). At AO imaging, supra-RPE granular deposits appeared as dense hyper-reflective structures, distinct from background of RPE, and corresponded topographically to imaging at En-face OCT and OCT B-scan. Supra-RPE granular deposits were distinguishable from RPE dystrophy by discontinuity with RPE band and intense hyper-reflectivity at AO.
Supra-RPE granular deposits were mostly found within the inner MH width (84%) and their presence corresponded to focal defects at the outer retinal layers and a bumpy morphology of FTMH edges.

Conclusions:

Supra-RPE granular deposits are distinct structures that can be identified at multimodal imaging with high accuracy. Most were found within inner FTMH base area and may represent photoreceptors remnants after FTMH formation as they have high reflectivity at AO. These may be linked to poorer visual outcomes after vitreoretinal surgery.