**Supplementary Figures:**

**Supplementary Figure 2:** Representative multimodal images of geographic atrophy (GA) in 2 eyes (P4, OD and P5, OD). (A, E): Color fundus images of eyes with GA; white solid lines depict the area for adaptive optics scanning laser ophthalmoscopy (AOSLO) montage imaging. (B, F): Fundus autofluorescence (FAF) images; black outlines depict GA margins, and white solid outlines show the area for AOSLO imaging. (C, G): FAF, near infrared and spectral domain optical coherence tomography (OCT) B-scan images were superimposed precisely; green lines: location of horizontal and vertical OCT cross-sectional B-scans, white dotted lines indicate the area for OCT angiography (OCTA) imaging. (D, H): corresponding vertical OCT cross-sectional B-scans in (C, G). Scale bars = 200 µm.