

Multimodal Ophthalmologic Evaluation Can Detect Retinal Injuries in Asymptomatic Patients With Primary Antiphospholipid Syndrome

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Abstract : Purpose: To perform a multimodal evaluation, including the use of Optical Coherence Angiotomography (OCTA), in patients with primary antiphospholipid syndrome (PAPS) without ocular complaints and to compare them with healthy individuals. Methods: A complete structural and functional ophthalmological evaluation using OCTA and microperimetry (MP) exam in patients with PAPS, followed at a tertiary rheumatology outpatient clinic, was performed. All ophthalmologic manifestations were recorded and then statistical analysis was performed for comparative purposes; $p < 0.05$ was considered statistically significant. Results: 104 eyes of 52 subjects (26 patients with PAPS without ocular complaints and 26 healthy individuals) were included. Among PAPS patients, 21 were female (80.8%) and 21 (80.8%) were Caucasians. Thrombotic PAPS was the main clinical criteria manifestation (100%); 65.4% had venous and 34.6% had arterial thrombosis. Obstetrical criteria were present in 34.6% of all thrombotic PAPS patients. Lupus anticoagulant was present in all patients. 19.2% of PAPS patients presented ophthalmologic findings against none of the healthy individuals. The most common retinal change was paracentral acute middle maculopathy (PAMM) (3 patients, 5 eyes), followed by drusen-like deposits (1 patient, 2 eyes) and pachychoroid pigment epitheliopathy (1 patient, 1 eye). Systemic hypertension and hyperlipidaemia were present in 100% of the PAPS patients with PAMM, while only six patients (26.1%) with PAPS without PAMM presented these two risk factors together. In the quantitative OCTA evaluation, we found significant differences between PAPS patients and controls in both the superficial vascular complex (SVC) and deep vascular complex (DVC) in the high-speed protocol, as well as in the SVC in the high-resolution protocol. In the analysis of the foveal avascular zone (FAZ) parameters, the PAPS group had a larger area of FAZ in the DVC using the high-speed method compared to the control group ($p=0.047$). In the quantitative analysis of the MP, the PAPS group had lower central ($p=0.041$) and global ($p<0.001$) retinal sensitivity compared to the control group, as well as in the sector analysis, with the exception of the inferior sector. In the quantitative evaluation of fixation stability, there was a trend towards worse stability in the PAPS subgroup with PAMM in both studied methods. Conclusions: PAMM was observed in 11.5% of PAPS patients with no previous ocular complaints. Systemic hypertension concomitant with hyperlipidemia was the most commonly associated risk factor for PAMM in patients with PAPS. PAPS patients present lower vascular density and retinal sensitivity compared to the control group, even in patients without PAMM.

Keywords : antiphospholipid syndrome, optical coherence angio tomography, optical coherence tomography, retina

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