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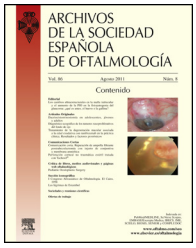

Original article

SD-OCT findings in polypoidal choroidal vasculopathy☆

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ABSTRACT

Objective: To examine patients with polypoidal choroidal vasculopathy (PCV), using spectral-domain optical coherence tomography (SD-OCT) to characterize and locate the PCV lesions.
Patients and methods: A series of 15 eyes of 10 patients diagnosed with PCV were examined. All eyes were imaged with macular SD-OCT.
Results: SD-OCT cross-sectional scan findings included atypical and typical pigment epithelial detachments (PEDs). Polyps and neovascularisation were located above Bruch's membrane. All 15 eyes (100%) showed sub-retinal fluid (SRF) in association with PEDs.
Conclusion: These SD-OCT findings located the vascular lesions of PCV in the sub-retinal pigment epithelium (RPE) space, and strongly suggest that PCV is a variant of type 1 neovascularization.

Hallazgos con la SD-OCT en vasculopatía coroidea polipoidea

Palabras clave:
SD-OCT
DEP
Neovascularización coroidea tipo 1
Pólipos
Membrana de Bruch

RESUMEN

Objetivo: Examinar a los pacientes con vasculopatía coroidea polipoidea (VCP), usando la tomografía de coherencia óptica de dominio espectral (SD-OCT) para caracterizar y localizar las lesiones en la VCP.
Pacientes y métodos: Se estudió una serie de 15 ojos de 10 pacientes diagnosticados de VCP. Todos los ojos fueron explorados con SD-OCT.
Resultados: Con cortes transversales de la SD-OCT se encontraron desprendimientos del epitelio pigmentario (DEP) típicos y atípicos. Los pólipos y la neovascularización se localizaron encima de la membrana de Bruch. Los 15 ojos (100%) mostraron líquido subretiniano (LSR) en asociación con los DEP.

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Conclusión: Los hallazgos de la SD-OCT localizan las lesiones vasculares de la VCP en el espacio sub-EPR e indican fuertemente que la VCP es una variante de neovascularización tipo 1.

Introduction

Polypoidal choroidal vasculopathy (PCV) is a network of abnormal, thin-walled large blood vessels originating in the choroids. It is a matter of debate whether PCV is an entity on its own or a variant of type 1 choroidal neovascularization, with a clear difference: the vessels end in polypoidal lesions.[1–7] Both processes exhibit different clinic characteristics, evolution and responses to treatment. Indocyanine green fluorescent angiography (FAG) reveals hyperfluorescence spots in both processes[4,7] which are typical of a hidden lesion. SD-OCT is a technique that enables a new and more intuitive study of the retina. OCT enables structural analysis and defining the location of PCV lesions *in vivo*.[8,9] This is a descriptive study of the polypoidal vascular lesions studied with SD-OCT.

Patients, material and methods

Overall, 15 eyes of 10 patients with PCV were studied. The diagnostic was based on typical clinic and angiographic findings. Inclusion criteria for PCV diagnostic were[10,11]:

1. Serous, serohemorrhagic and hemorrhagic detachments of the retina and/or pigment epithelium (PE) in the posterior pole or the periphery.
2. Vascular anomalies and choroidal polyps.
3. Poor response to the vascular endothelial anti-growth factor.
4. Hidden CNV image in FAG.
5. Few or no drusen.

Table 1 – Characteristics of group (n = 10).

Age, years ± SD	72.54 ± 10.15
Sex (M/F)	4/6

SD: standard deviation; F: female; n: patients; M: male.

Table 2 – Diagnostic and inclusion criteria (n = 15).

	DS/SH/DH	P	NR anti-VEGF	hCNV	D
n	15 (100%)	15 (100%)	10 (66.6%)	15 (100%)	0 (0%)

D: drusen; DS/SH/DH: serous, serohemorrhagic and hemorrhagic detachment; n: eyes; NR anti-VEGF: poor response to anti-VEGF; hCNV: hidden CNV; P: choroidal polyps.

After a full ophthalmological assessment, SD-OCT (3D OCT-2000 Spectral Domain OCT, Topcon, Medical Systems, Inc., Oakland, NJ, USA) images were obtained of all eyes.

Results

Table 1 shows the characteristics of the study population. Table 2 describes the amount of patients that fulfilled the inclusion criteria. FAG showed dotted hyperfluorescence in 15 eyes (100%). All eyes (100%) exhibited typical polyps in FAG. In SD-OCT, the 15 eyes (100%) exhibited subretinal fluid (SRF) associated to pigment epithelium detachment (PED). In addition, 10 eyes (66.6%) exhibited SRF without intraretinal fluid. In 12 eyes (80%) PED exhibited a wave-shaped contour (Figs. 1 and 2). Polyps appeared as hyper-reflective oval or rounded shapes with hyporeflective content (Figs. 1 and 2). Ten

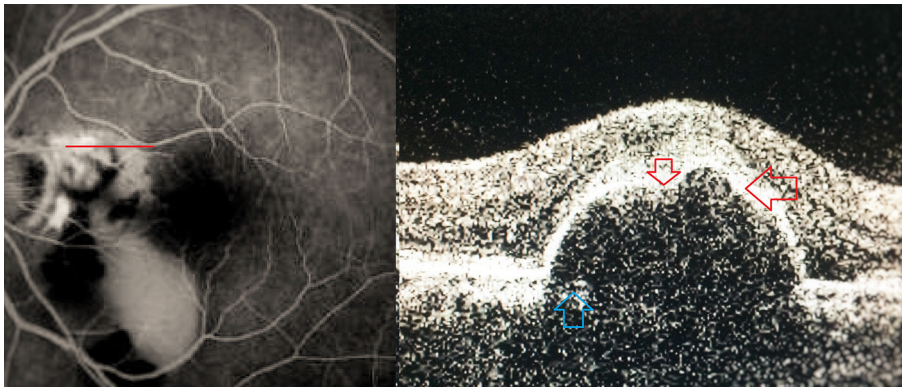

Fig. 1 – SD-OCT transversal section: M-shaped pigment epithelium detachment with uneven contour. Red arrow polyps: polyps located above Bruch's membrane (blue arrow). Left: angiographic image of the area outlined in OCT (green horizontal line). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)