Congenital Retinal Macrovessel. A Case Report of a Rare Incidental Finding

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Abstract

Congenital retinal macrovessel (CRM) is a rare vascular abnormality of the macular region that is usually discovered incidentally. We present the case of a 57-year-old Libyan female patient with a CRM. The patient’s left eye showed an abnormally large retinal vein crossing the foveal avascular region. Optical coherence tomographic angiography (OCTA) showed a large retinal vessel in the left eye branching superiorly at the edge of the fovea a vascular zone. The patient has no visual defect or macular thickening. CRM is an incidental finding that, with rare exceptions, does not cause any alteration to the patient’s vision. They can be imaged by OCTA and need to be differentiated from other retinal pathologies.

Keywords
► congenital retinal macrovessel
► fovea
► optical coherence tomographic angiography

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Introduction

Brown et al used the term congenital retinal macrovessel (CRM) to describe an abnormal retinal vessel, generally a vein, that extends through the central macula, supplying or draining regions above and below the horizontal raphe. This abnormality is frequently unilateral and seldom affects vision.\textsuperscript{1} CRM was later categorized as a type (stage 1) of arteriovenous malformation of the retina by Archer et al.\textsuperscript{2}

Optical coherence tomography angiography (OCTA) now allows for noninvasive imaging of retinal vasculature and segmentation of the superficial and deep vascular layers.\textsuperscript{3}

This case report was conducted in adherence to the principles of the Helsinki Declaration. It was authorized by the ethical board of Benghazi Ophthalmology Teaching Hospital, and informed written permission was acquired after discussing the study with the patient.

In this study, we present the case of a patient with a CRM crossing the foveal avascular region, with no visual defect or macular thickening.

Case Description

A 57-year-old woman presented to the ophthalmology (OPD) asking for changing her reading glasses. On examination, both eyes’ best corrected visual acuity was 0.9, intraocular pressure was within normal limits, and anterior segment examination was normal. Posterior segment examination with +90-D lens revealed no abnormality in the right eye, while in the left eye, it showed an abnormal, large retinal vein (macrovessel) branching superiorly from the inferotemporal vein, with numerous tributaries crossing the horizontal raphe across the macula, adjacent to the fovea. A color fundus photograph of both eyes is shown in \textsuperscript{Fig. 1}.

Optical coherence tomography (OCT) was done; the left eye showed a small hyperreflective lesion corresponding to the location of the macrovessel (see \textsuperscript{Fig. 2}).

Optical coherence tomographic angiography (OCTA; DRI OCT Triton plus, Topcon Medical Systems, Inc., Europe) was normal for the right eye. It detected no alterations, except for the presence of the macrovessel branching superiorly at the edge of the fovea, a vascular zone in the left eye (\textsuperscript{Fig. 3}).
Discussion

CRM is a rare vascular abnormality of the macular region that is usually discovered incidentally. The majority of cases of CRM are asymptomatic and stationary, although they have been described in association with other retinal alterations such as macular hemorrhages, preretinal hemorrhages, perifoveal microvascular alterations, central serous chorioidopathy, arterial macroaneurysms, retinopathy of prematurity, vascular occlusion, cystic macular edema (which resolves spontaneously after a few months), vascular malformations of the central nervous system, and reduced retinal sensitivity at the macular area.

Although the CRM is apparent and stable vessels that cross the foveal avascular zone, a fundus examination may not always reveal their existence. Therefore, in the case of unexplained vision loss, the ophthalmologist should investigate such a rare possibility.

OCTA has been proven to be a viable method for imaging the superficial and deep vascular layers of the retina. It is quick, noninvasive, and does not need fluorescein dye.

In conclusion, CRM or aberrant vessels are incidental findings that, with rare exceptions, do not cause any alteration to the patient’s vision. They can be imaged by OCTA and need to be differentiated from other retinal pathologies.

Funding
None.

Conflict of Interest
None declared.

References

Fig. 3 A 3 x 3 mm en face optical coherence tomographic angiography (OCTA) images of the left eye (OS). Images were segmented into superficial (upper limit: 0 µm from the internal limiting membrane; lower limit: 15 µm posterior to the inner plexiform layer [IPL]) and deep (upper limit: 15 mm posterior to the IPL; lower limit: 70 µm posterior to the IPL) showing large retinal vessels branching superiorly at the edge of the fovea, a vascular zone (arrow).