Vortex Veins in the Macula

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Key Words

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Abstract

A 54-year-old man with diabetes mellitus had abnormal choroidal vessels in the right eye. Whirled tributaries, the choroidal part of the vortex vein, and the scleral canal beneath the central foveal area were visible. This is a rare case of vortex veins in the macula.

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Introduction

Vortex veins comprise the drainage system of the choroid. Also, the scleral entrance to each vortex vein is a known equatorial landmark in the fundus [1]. Vortex veins in the macula, however, are very rare. We examined a patient with this uncommon condition.

Case Report

A 54-year-old man with diabetes mellitus was referred to us for a fundus examination. His medical and family histories were noncontributory, except for diabetes mellitus. His visual acuity was 20/20 with correction (sph -7.0 dptr plus cylt -0.5 dptr axis 50°) in both eyes. The intraocular pressure was 18 mm Hg bilaterally. Both corneas and anterior chambers were clear. No rubeosis iridis was found. Small punctate opacities were visible in the cortex of both lenses. Ophthalmoscopically, the optic disc, retinal vessels, and retina appeared normal in both eyes. No retinal microaneurysms were noted. In the right eye, abnormal choroidal vessels were visible; the vortex veins in the equator were smaller than those in the left eye. Whirled tributaries, the choroidal part of the vortex vein, and the scleral canal beneath the central foveal area were evident (fig. 1). In the left eye, the vortex veins were observed in the equator. Fluorescein angiography of the right fundus revealed the hyper-fluorescent choroidal vasculature, which filled with dye in the early retinal arteriovenous phase, and the hypofluorescent silhouette of the whirled tributaries in the macular area in the late arteriovenous phase (fig. 2). Test results of color vision, visual fields, and electroretinography were normal.

Discussion

The venous outflow system in the choroid normally contain whirling tributaries and a larger (vortex) vein [1]. The vortex tributar-

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Vortex veins in the macula, as found in our patient, appear to be very rare. Similar conditions have been reported in only a few cases [2–5], to our knowledge. The significance of a vortex vein system in the macular area is obscure at present, although affected patients described by Hara and Shimizu [4] and Ohno et al. [5], like ours, were myopic.

Ophthalmologists should be aware of the potential for the vortex vein system to be present in the macula.

Fig. 1. Photograph of the right eye shows whirled tributaries, the choroidal part of the vortex vein, and the scleral canal beneath the central foveal area.

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Fig. 2. Flubrescein angiogram demonstrates the hypofluorescent silhouette of whirled tributaries in the macular area in the late retinal arteriovenous phase.

ies, the choroidal portion of the vortex vein, and the scleral canal were clearly visible beneath the central foveal area in our patient. Rutnin [1] described that the location of 1,710 scleral entrances in 200 eyes varied meridionally from the equator itself to four disc diameter (6.36 mm) posterior to it, and that the best equatorial landmark in the fundus is the scleral entrance of each vortex vein.

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