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A case of incomplete central retinal artery occlusion associated with short posterior ciliary artery occlusion

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Abstract: We describe a case of incomplete central retinal artery occlusion associated with short posterior ciliary artery occlusion. Fundus examination showed multiple soft exudates around the optic disc and macular retinal edema in his right eye; however, typical cherry red spot on the macula was not detected. Fluorescein angiography revealed delayed dye inflow into the nasal choroidal hemisphere that is supplied by the short posterior ciliary artery. Soft exudates around the optic disc increased during observation, and gradually disappeared. To our knowledge, incomplete central retinal artery occlusion associated with short posterior ciliary artery occlusion is extremely rare.
Keywords: central retinal artery occlusion, short posterior ciliary artery, choroidal circulation, soft exudate.

INTRODUCTION

There are only few reports that have presented the incomplete type of central retinal artery occlusion (CRAO), including diminished visual acuity and a residual visual field but no complete visual loss, slight retinal edema together with a slight cherry red spot on the macula and good visual prognosis [1, 2]. There have been several reports presenting CRAO with choroidal circulatory disturbance [3-5], and/or anterior ischemic optic neuropathy [4, 6, 7]. To our knowledge, incomplete CRAO associated with short posterior ciliary artery (SPCA) occlusion is extremely rare [1]. Herein, we describe the case of such a patient.

CASE REPORT

A 66-year-old man complaining of sudden blindness in his right eye was referred to our hospital. His best-corrected visual acuity was 0.05 in the right eye and 1.2 in the left eye. Fundus examination showed several soft exudates around the optic disc and retinal edema in the macula of his right eye; however, typical cherry red spot was not detected, and the optic disc appearance was unremarkable (Figure 1A).

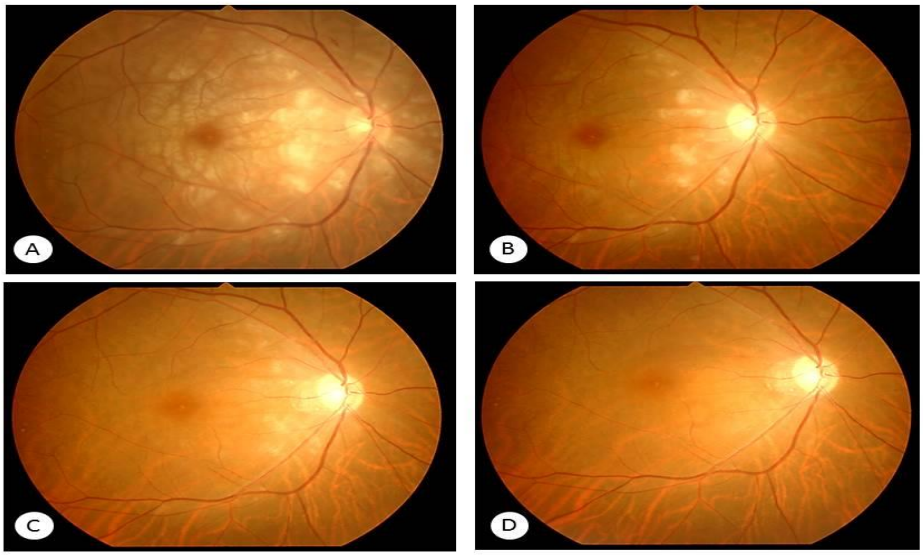

Fig 1: Right fundus photograph at the initial visit and after the visit.
A; initial visit, B; 3 weeks later, C; 5 weeks later, D; 8 weeks later

Note soft exudates gradually reduced.

Fluorescein angiography (FA) revealed a delay of arm-to-retina time and a marked filling delay of the nasal choroidal hemisphere that is supplied by nasal SPCA (Figure 2A arrows). Therefore, the choriocapillaris corresponding to the nasal choroidal area filled slowly and patchily (Figure 2B-D), and no staining of the arterial wall was detected in the late stage.

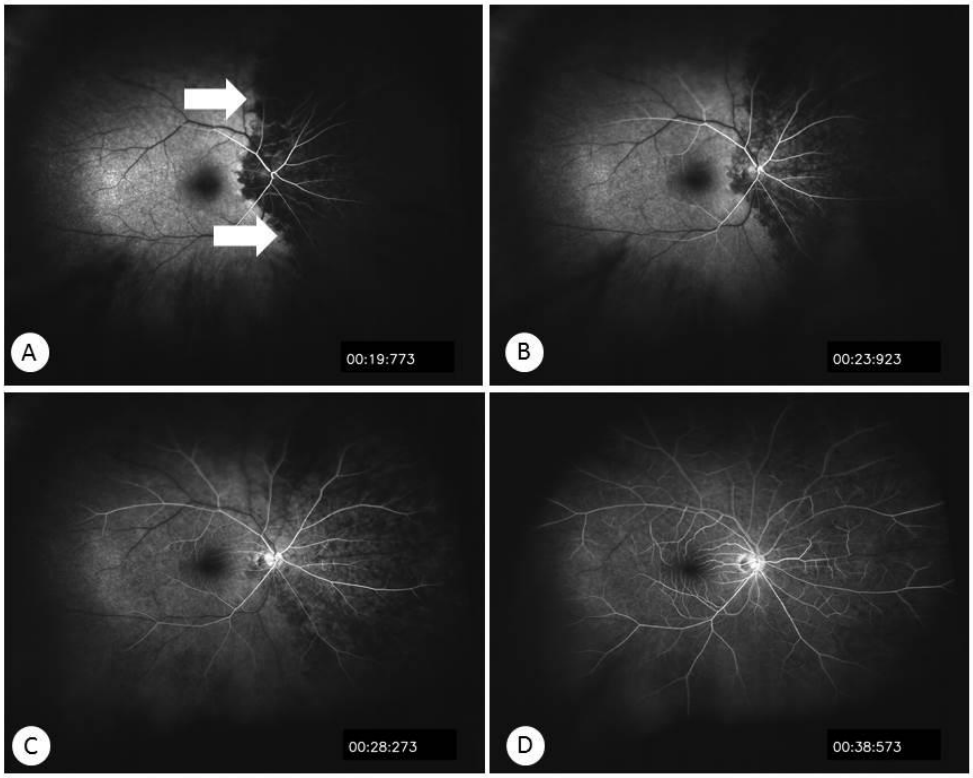

Fig 2: Right fluorescein angiography at the first visit demonstrated a marked filling delay of the nasal choroidal hemisphere that is supplied by the nasal short posterior ciliary artery. The hemisphere filled slowly and patchily; 19 s (A), 23 s (B), 28 s (C), and 38 s (D) after injection.

From these findings, the patient was diagnosed with incomplete CRAO associated with SPCA occlusion. Systemic administration of a vasodilator and an anti-platelet agent were started after the initial examination. During observation, soft exudates gradually decreased in 3 weeks (Figure 1B, C), and finally disappeared 8 weeks (Figure 1D). His best-corrected visual acuity improved to 0.5 in the right eye.

DISCUSSION

Schmidt *et al.;* [8] classified CRAO into 3 stages; stage I of his classification represents "incomplete CRAO" and includes diminished visual acuity and a residual visual field but no complete visual loss, slight retinal edema together with a slight cherry red spot on the macula, no increase in retinal signs over several hours, and delayed but not completely interrupted blood flow revealed by FA. The fundus changes in stage I described in their literature were very similar to those in our case.

Hagimura *et al.;* [9] evaluated 22 patients with CRAO. Eyes with poor final vision (final visual acuity < 0.1) showed initially denser retinal opacities with a distinct cherry red spot. Eyes with favorable visual outcome (final visual acuity > 0.4) showed soft exudates and faint retinal opacities without a cherry red spot. The findings show that the final visual outcome mainly depended on the initial visual acuity and funduscopic findings. In our patient, soft exudates were defined during observation and the patient's final visual acuity improved to 0.5.

CONCLUSION

In conclusion, we speculate that the sudden blindness experienced by our patient was due to spasms of the ophthalmic artery. In this case, spasms of the ophthalmic artery and occlusion of the SPCA occurred simultaneously.

Disclosure

No conflicts of interest are declared in relation to this paper.

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