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Original Research Paper

Longitudinal Changes in Retinal Vessel in A Case with Branch Retinal Vein Occlusion

Medical Science

KEYWORDS : Branch retinal vein occlusion, Atherosclerotic change of retinal vessels, Health screening

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ABSTRACT

We present longitudinal changes in retinal vessel in a case with branch retinal vein occlusion (BRVO). A 57-year-old man visited the Jichi Medical University hospital for health screening. Fundus photographs showed BRVO in the right eye and atherosclerotic change in the left eye. We retrospectively evaluated his previous fundus photographs. In the right eye, gradually progression of atherosclerotic change at the superotemporal retinal vessel and at the superior margin of the optic disc was detected. Similarly, gradual progression of atherosclerotic change at the superonasal retinal artery was detected in the left eye. We recommended him to treat BRVO in this present case.

INTRODUCTION

Branch retinal vein occlusion (BRVO) is a common retinal vascular disorder and a common cause of visual loss in middle aged and elderly people. [1] The clinical manifestations are related to congestion, hemorrhage, ischemia, and edema upstream of the site of venous occlusion. The mechanism of vein occlusion, which occurs where a retinal artery crosses the affected vein, seems to be compression of the vein by a thickened retinal artery. [1]

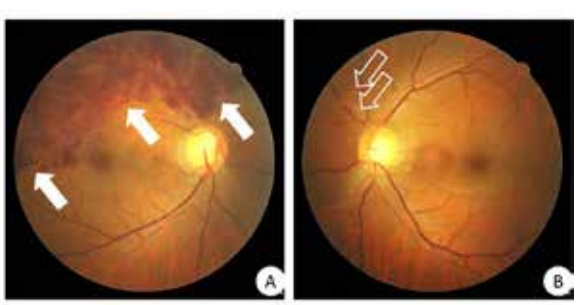
Risk factors for BRVO that have been documented in previous clinical and epidemiological studies include arterial hypertension (HT), diabetes mellitus (DM), smoking, high body mass index, high intraocular pressure, hyperhomocysteinemia, deficiency in the protein C pathway, higher activated factor VII concentrations, and high blood viscosity. [1-3]

, we present longitudinal changes in retinal vessel in a case with BRVO.

CASE PRESENTATION

A 57-year-old man visited the Jichi Medical University hospital for health screening. He was diagnosed with hypertension at the age of 54-years. Blood pressure was 127/79 mmHg. The best-corrected visual acuity (BCVA) was 1.2 in both eyes. The intraocular pressure was 11 mmHg in the right eye and 16 mmHg in the left eye. Fundus photographs showed BRVO in the right eye (Figure 1A, arrows) and atherosclerotic change in the left eye (Figure 1B, framed arrows).

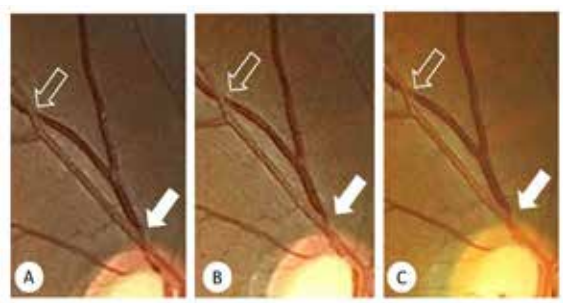
Fig 1.Fundus photographs of the right (A) and left (B) eyes (2006)



Note branch retinal vein occlusion in the right eye (arrows) and atherosclerotic change in the left eye (framed arrows).

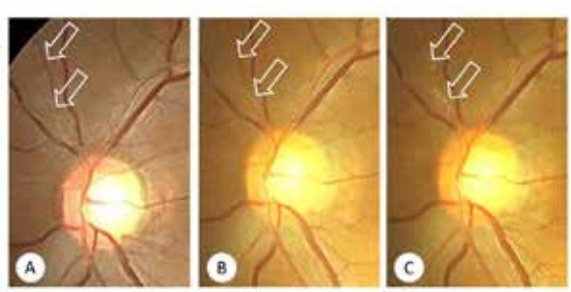
He had visited our hospital for health screening from 2002 to 2016. Therefore, we retrospectively evaluated his previous fundus photographs. In the right eye, gradually progression of atherosclerotic change (arteriovenous crossing) at the superotemporal retinal vessel (Figure 2, framed arrows) and at the superior margin of the optic disc (Figure 2, arrows) was detected. Similarly, gradual progression of atherosclerotic change at the superonasal retinal artery was detected in the left eye (Figure 3, framed arrows).

Fig 2 Fundus photographs of the right eye during 10 years (A: 2002, B: 2006, C: 2011)



Note gradual progression of atherosclerotic change (arteriovenous crossing) at the superotemporal retinal vessel (framed arrows) and at the superior margin of the optic disc (arrows).

Fig 3. Fundus photographs of the left eye during 13 years (A: 2002, B: 2010, C: 2014)



Note gradual progression of atherosclerotic change at the superonasal retinal artery (framed arrows).

We recommended him to treat BRVO in this present case.

DISCUSSION

This present case highlights that gradual progression of arteriovenous crossing was detected during 15 years observation period.

Several risk factors for BRVO have been documented in previous

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clinical and epidemiological studies.[2, 3] Newman-Casey et al. [2] evaluated risk factors associated with development of a BRVO among a large group of managed-care plan beneficiaries in the United States. According to their report, 2,283 (0.5%) developed incident BRVO of the 492,488 enrollees. Enrollees with HT alone or HT along with other metabolic syndrome components (DM and hyperlipidemia) had an increased hazard of developing a BRVO compared with those with none of these conditions. In this present case, he was diagnosed HT 4 years before the onset of BRVO. On the other hand, Bertelsen et al. [1] examined levels of comorbidity before and after the diagnosis of BRVO, verified with fundus photography, compared with the general population. According to their report, patients had an increased risk of developing HT, DM, congestive heart failure, and cerebrovascular disease after the diagnosis of BRVO. They emphasize that BRVO is a marker of progressive cardiovascular disease that should be included in the risk assessment of patients for preventive intervention.

CONCLUSIONS

If a case is newly recognized progression of atherosclerotic change such as arteriovenous crossing, we send the message about the necessity of excellent control of DM and HT as well as primary prevention of BRVO. Finally, ophthalmologists should emphasize to patients and their primary physicians the importance of effectively managing systemic medical conditions associated with newly diagnosed BRVO.

REFERENCES:

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