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Macroaneurysm on the Optic Disc in a Patient with Aortic Dissection

Masayuki Takeyama Masayoshi Iwaki Masahiro Zako

Department of Ophthalmology, Aichi Medical University, Nagakute, Japan

Key Words

Macroaneurysm · Optic disc · Aortic dissection

Abstract

Purpose: We report a case of macroaneurysm on the optic disc, a rare location, accompanied by vitreous hemorrhage in a patient with aortic dissection. **Methods:** A 60-year-old female with a history of aortic dissection at the age of 51 presented with visual disturbance owing to vitreous hemorrhage in her right eye. During vitrectomy, we found a large macroaneurysm on the optic disc that was beating and oozing blood. However, the macroaneurysm was not treated. **Results:** The macroaneurysm gradually shrunk, and the beating and oozing of blood disappeared accordingly. **Conclusion:** Up to now, there have been no reports of macroaneurysm on the optic disc in aortic dissection patients. The association between macroaneurysm on the optic disc and aortic dissection is unclear; therefore, additional case reports may be necessary. To the best of our knowledge, our case is the first one reported in the literature.

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Introduction

Some cases of macroaneurysm on the optic disc, which is a rare location for retinal macroaneurysm, were previously reported [1–5]. The precise etiology of macroaneurysm on the optic disc is still unclear, although it is assumed that it is similar to retinal macroaneurysm [6]. Atherosclerosis and hypertension are major risk factors for this condition and, interestingly, also for aortic dissection [7]. However, there have been no cases complicated by both diseases. Here, we present a patient with both a macroaneurysm on the optic disc and aortic dissection.

Masahiro Zako, MD
Department of Ophthalmology
Aichi Medical University
Nagakute, Aichi 480-1195 (Japan)
E-Mail zako@aichi-med-u.ac.jp

Case Presentation

A 60-year-old female who experienced deteriorated vision in her right eye the previous week visited our hospital. Best-corrected visual acuity in her right eye was limited to hand motion, her intraocular pressure was 15 mm Hg, the lens showed mild cataract, and the fundus was invisible due to vitreous hemorrhage. B-mode echography showed no retinal detachment, but there was mass refraction on the optic disc (fig. 1a). Vitrectomy combined with lens extraction by phacoemulsification and artificial intraocular lens implantation was performed. After removing the vitreous hemorrhage, a large macroaneurysm appeared on the optic disc (fig. 1b). The macroaneurysm was beating and oozing blood, but no other abnormal finding was observed. The aneurysm was not treated, and the oozing of blood from the macroaneurysm continued after surgery. Three weeks after surgery, however, the vitreous hemorrhage disappeared, and the patient's best-corrected visual acuity in the right eye increased to 1.0. The macroaneurysm gradually shrunk, and the oozing of blood and beating disappeared. The fundus photograph made 3 months after surgery is shown below (fig. 1c).

Our patient started medication for hypertension at the age of 41 and kept her hypertension under control. She did not have hyperlipidemia, but she developed acute Stanford type A aortic dissection at the age of 51 (fig. 1d) and underwent synthetic graft replacement surgery. Marfan-like phenotype was not found. A contrast-enhanced computed tomography scan of the head showed no intracranial aneurysm (data not shown). Currently, the patient still has false lumen, but it did not progress after surgery.

At the age of 57, she started glaucoma eye drops (latanoprost) in both eyes at an ophthalmic clinic.

Discussion

Atherosclerosis and hypertension are common major risk factors for both aortic dissection and retinal macroaneurysm. The vessel wall weakness induced by atherosclerosis and/or hypertension is likely to be involved in both diseases. However, no relationship between aortic dissection and macroaneurysm is assumed because the vessel structures have been considered different. The fundus vessels in our patient showed no apparent atherosclerotic findings. There may be an unknown mechanism associated with aortic dissection that also accounts for the occurrence of ocular macroaneurysm.

In the current case, no treatment such as laser photocoagulation for macroaneurysm was performed in addition to vitrectomy. A few case reports showed spontaneous resolution of macroaneurysm on the optic disc without treatment [1–5]. Considering the risk of visual field loss by laser photocoagulation, we decided to just follow-up without performing any special treatment for the macroaneurysm on the optic disc.

There have been no reports of macroaneurysm on the optic disc in aortic dissection patients so far. The association between macroaneurysm on the optic disc and aortic dissection is still unclear; therefore, additional case reports may be necessary. To the best of our knowledge, our case is the first report on this condition in the literature.

Disclosure Statement

The authors have no conflicts of interest to declare.

References

- 1 Das-Bhaumik RG, Lindfield D, Quinn SM, Charles SJ: Optic disc macroaneurysm in evolution: from incidental finding to branch retinal artery occlusion and spontaneous resolution. *Br J Ophthalmol* 2011;95:145–146, 155.
- 2 Ben Yahia S, Jenzeri S, Jelliti B, Hmidi K, Messaoud R, Khairallah M: An unusual complicated cilioretinal artery macroaneurysm on the optic disc. *Int Ophthalmol* 2009;29:507–509.
- 3 Quhill F, Smith JM, Scotcher SM: Arterial macroaneurysm on the optic disc. *Eye (Lond)* 2004;18:321–322.
- 4 Kowal L, Steiner H: Arterial macroaneurysm of the optic disc. *Aust NZJ Ophthalmol* 1991;19:75–77.
- 5 Brown GC, Weinstock F: Arterial macroaneurysm on the optic disk presenting as a mass lesion. *Ann Ophthalmol* 1985;17:519–520.
- 6 Panton RW, Goldberg MF, Farber MD: Retinal arterial macroaneurysms: risk factors and natural history. *Br J Ophthalmol* 1990;74:595–600.
- 7 LeMaire SA, Russell L: Epidemiology of thoracic aortic aneurysm. *Nat Rev Cardiol* 2011;8:103–113.

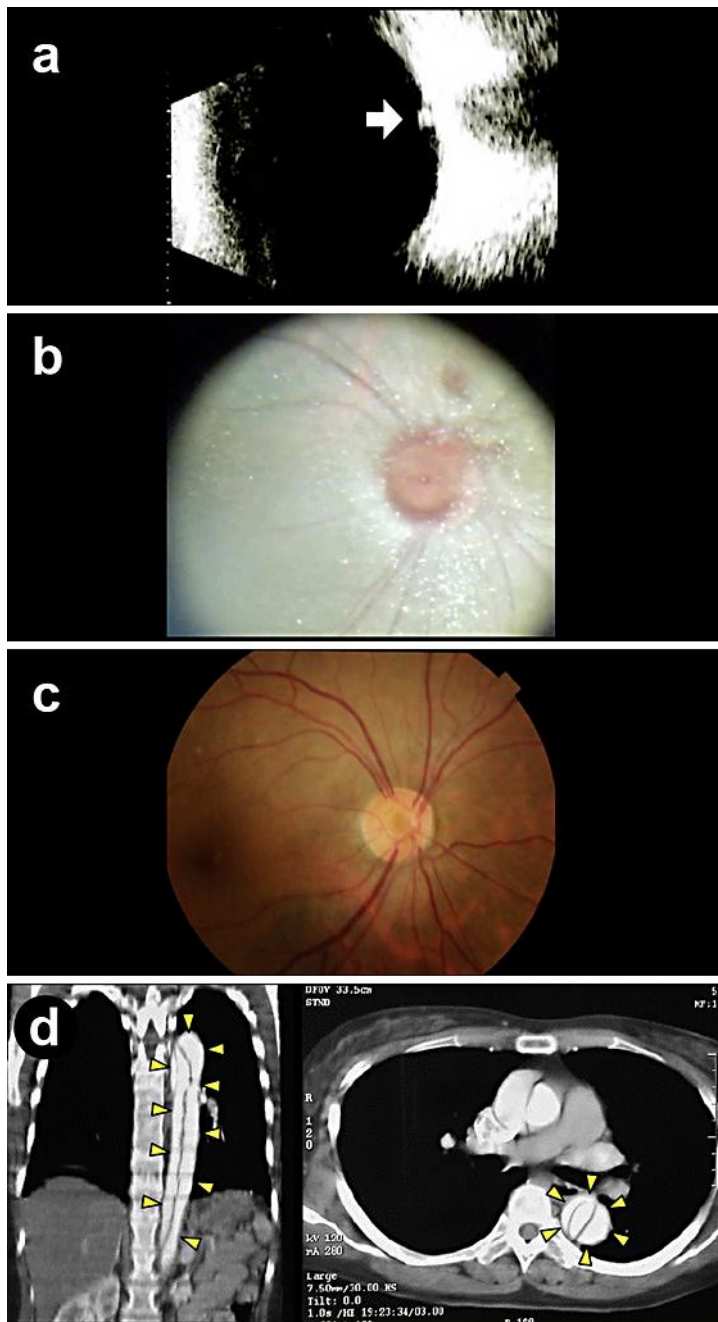


Fig. 1. **a** B-mode echography before surgery. No retinal detachment was observed, but mass refraction on the optic disc was seen (arrow). **b** Fundus photograph of the macroaneurysm during surgery. The macroaneurysm was almost equal in diameter to the optic disc and was beating. Blood oozing was found. **c** Fundus photograph 3 months after surgery. The macroaneurysm shrunk to 1/3 of the disc diameter. **d** Representative contrast-enhanced computed tomography images at the development of acute aortic dissection. Triple-barreled aortic dissection is shown in both images (arrowheads).