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Case Report

Spontaneous resolution of idiopathic vitreomacular traction syndrome in a healthy young man

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Abstract: Purpose: To report a case of spontaneous resolution of idiopathic vitreomacular traction syndrome developed in a healthy young man. Method: To exam the macular region using Optical coherence tomography (OCT). Result: OCT examination revealed an incomplete posterior vitreous detachment (PVD) which remains broad vitreous adhesion at the macular area. The foveal thickness increase to 573 μm. The maximal diameter of the adhesion suggested the broad Vitreomacular traction (VMT) type. The posterior vitreous cortex was revealed as a highly reflective band. After 6 weeks without surgery, the patient reported spontaneous improvement in visual symptoms. OCT revealed a complete PVD without macular traction. The foveal contour restored and the foveal thickness decreased markedly to 213 μm. Conclusion: A comprehensive OCT evaluation of the vitreoretinal interface, including VMT types, concurrent conditions like CME and ERM, should be taken into consideration before surgery.

Keywords: Idiopathy vitreomacular traction syndrome, posterior vitreous detachment, optical coherence tomography

Introduction

Vitreomacular traction (VMT) syndrome is a clinical entity characterized by anteroposterior traction on the macula, resulting from persistent vitreous adhesion at the macular area during incomplete posterior vitreous detachment (PVD) [1]. Symptoms such as decreased visual acuity, metamorphopsia, photopsia, and micropsia are common.

The spontaneous resolution of VMT is infrequent. In a retrospective study, Hikichi et al. [2] reported that only 11% eyes with vitreomacular traction syndrome resolved spontaneously. When VMT is accompanied by poor visual acuity, surgery is typically required. In younger patients, the adhesion between the posterior vitreous cortex and the internal limiting membrane is too strong to separate completely, which increases the unpredictability of visual outcomes without surgery [1, 3].

Herein, we present a remarkable case with the spontaneous resolution of VMT in a healthy young man who presented with poor visual acuity but ultimately achieved baseline visual acuity without surgery.

Case report

A 34-year-old man presented with decreased vision and metamorphopsia in his left eye for 1 day. The patient's refractive error was 3.5 diopters of myopia in the left eye, with best-corrected visual acuity (BCVA) of 20/200 OS. The slit-lamp examination and intraocular pressures were unremarkable. The fundus examination revealed radial wrinkling of the posterior hyaloid (**Figure 1**).

Optical coherence tomography (OCT) (cirrus HD-OCT 4000, Carl Zeiss Inc., Dublin, CA) revealed an incomplete PVD with broad vitreous adhesion at the macular area, which had resulted in thickening, distortion, and edema of the fovea and adjacent retina. Left vitreomacular traction syndrome was diagnosed. Foveal thickness increased to 573 μm owing to adhesion at the fovea (**Figure 2**). The maximal diameter of the adhesion was 798 μm in horizontal scans (**Figure 3**) and 2475 μm in vertical scans

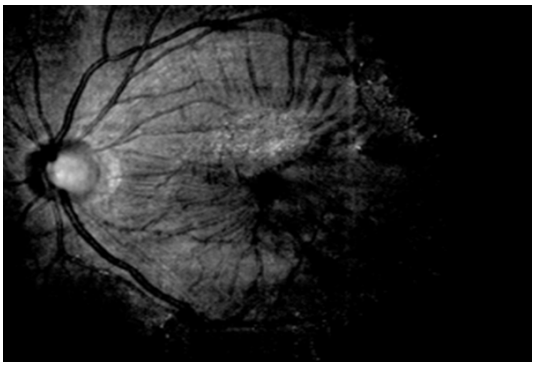

Figure 1. Fundus examination revealed radial wrinkles in the posterior hyaloid.

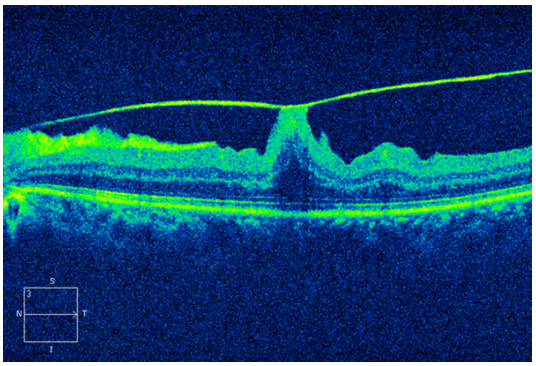

Figure 2. OCT revealed an incomplete PVD and adherence of the posterior vitreous cortex to the fovea by a thin strand, creating a V-shaped configuration. Foveal thickness increased to 573 μm with adjacent retinal neuroepithelial thickening and distortion.

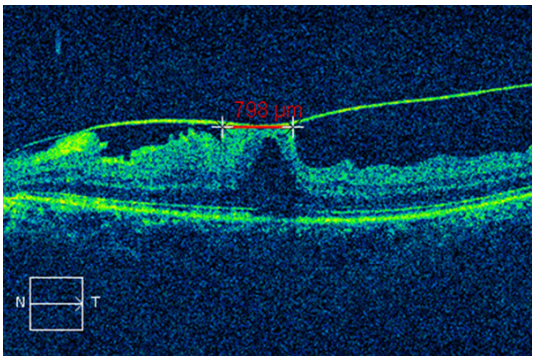

Figure 3. OCT showed that the maximal diameter of the adhesion in horizontal scans was 798 μm, suggesting the broad VMT type.

(**Figure 4**). The posterior vitreous cortex was identified as a highly reflective band. Surgical intervention was suggested, but the patient refused.

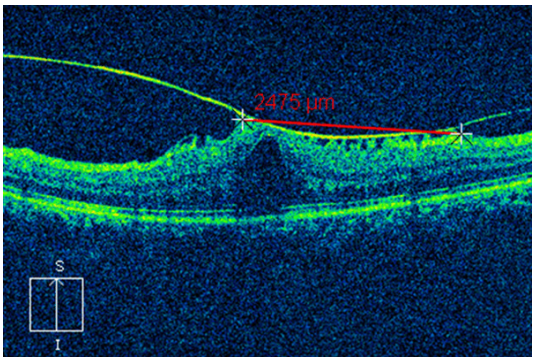

Figure 4. OCT revealed that maximal diameter of the adhesion in vertical scans was 2475 μm, suggesting the broad VMT type.

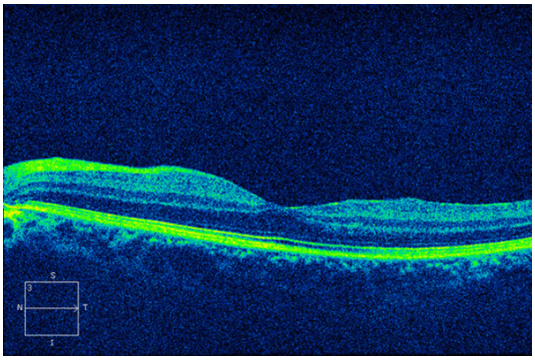

Figure 5. OCT revealed a complete PVD without macular traction, with the restoration of foveal contour and a decrease in foveal thickness to 213 μm.

After 6 weeks, the patient reported a spontaneous improvement in visual symptoms. The patient's BCVA OS was 20/20. OCT revealed a complete PVD without macular traction. Foveal contour was restored and foveal thickness decreased markedly to 213 μm (**Figure 5**).

Discussion

Pars plana vitrectomy has been the standard treatment for VMT. The factors that lead to the spontaneous resolution of VMT remain unclear. Even if there is a possibility of spontaneous resolution, doctors tend to suggest surgery, because it can ensure improvement. However, this may lead to unnecessary surgery.

A decision about surgery should be made only after evaluating the patient's condition. There are many factors affecting the prognosis of VMT. Yamada et al. [4] proposed two types of VMT to predict the postoperative outcome: the

V-shaped pattern was a partial V-shaped PVD nasally and temporally, suggesting a favorable surgical outcome; the J-shaped pattern was a partial PVD temporal to the fovea in which prominent cystoid macular edema (CME) might develop and result in a macular hole or macular atrophy postoperatively.

Spaide et al. [5] reported that the diameter of the vitreomacular adhesion at the central fovea is inversely related to the foveal deformation. The smaller the diameter, the greater is the stress on the fovea.

In contrast, Koizumi et al. [6] used the maximum diameter of the vitreomacular attachment rather than diameter at the central fovea to classify VMT into two types: focal VMT was defined if the maximum diameter of vitreomacular attachment was ≤ 1500 μm, and broad VMT was defined as diameter > 1500 μm. The authors concluded that focal VMT was more likely to lead to foveal cavitation, whereas broad VMT was more likely lead to CME without the formation of a foveal cavitation.

The eyes with VMT frequently had concurrent epiretinal membrane (ERM). However, Odrobina et al. [7] reported that the spontaneous resolution of VMT was observed in up to 47% of eyes without ERM.

In our case, the VMT can be classified as the V-shaped pattern or the broad type. This young man had good general health status, without CME, ERM or any other associated maculopathy. These findings might have suggested the possibility of spontaneous resolution and a good visual outcome.

Carpineto et al. also reported the case of a 34-year-old woman [8] with VMT and secondary CME. This patient also ended up with spontaneous resolution and complete restoration of her BCVA.

In conclusion, a comprehensive OCT evaluation of the vitreoretinal interface, including VMT classification, as well as the characterization of concurrent conditions such as CME and ERM, should be conducted before surgery. The definitive surgical indications of VMT deserve further study.

Disclosure of conflict of interest

None.

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