

## Acute Retinal Necrosis with White Patches on the Blood Vessels Caused by Varicella-Zoster Virus

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### Abstract

**Purpose:** The purpose of this report is to describe acute retinal necrosis with feature of discrete white patches on the blood vessels caused by Varicella-zoster virus.

**Methods:** Retrospective case report.

**Results:** A patient developed acute retinal necrosis. Funduscopic examination and fluorescein angiography revealed circumscribed retinitis in the nasal peripheral retina, with whitish inflamed areas and ghost vessels, especially discrete white patches on the blood vessels. Prophylactic laser retinopexy failed to prevent secondary retinal detachment. Then he accepted pars plana vitrectomy with silicone oil tamponaded, and the patches were easily dissociated with a flute needle, the involved vascular was not occlusive. Varicella-zoster virus DNA copies were both revealed using polymerase chain reaction in the vitreous and the patches.

**Conclusion:** This case suggests an apparently healthy adult may have typical ARN with feature of discrete white patches on the blood vessels caused by Varicella-zoster virus, and the patch is exudate from blood vessel.

**Keywords:** Acute retinal necrosis; Patch; Polymerase chain reaction; Varicella-zoster virus

**Abbreviations:** BCVA: Best-corrected visual acuity; ARN: acute retinal necrosis; VZV: Varicella-zoster virus; RD: retinal detachment; PCR: polymerase chain reaction

We report a patient of acute retinal necrosis with feature of discrete white patches on the blood vessels caused by Varicella-zoster virus.

### Case Report

A 40-year-old Chinese man with a 2-day history of red left eye presented to a local hospital. The visual acuity in the left eye deteriorated after 3-week prednisone acetate usage, and he was referred to our hospital in November 2009. Medical histories were normal. Best-corrected visual acuity (BCVA) was 6/5 in the right eye and 6/12 in the left. In the left eye there was some keratic precipitates, aqueous flare and hazy vitreous moderately, funduscopic examination and fluorescein angiography revealed circumscribed retinitis in the nasal peripheral retina, with whitish inflamed areas and ghost vessels, especially discrete white patches on the blood vessels (Figure 1A, 1B, 1C). Chest x-ray and orbital computed tomography scan were normal. Cytomegalovirus, herpes simplex virus, HIV antibody testing, and purified protein derivative with control were all negative.

Diagnosis included acute retinal necrosis (ARN) of left eye; systemic acyclovir and dexamethasone were used. He accepted laser retinopexy 2 weeks later, but retinal detachment (RD) happened 1 month later. Then he accepted pars plana vitrectomy with silicone oil tamponaded, and the patches were easily dissociated with a flute needle (Figure 2). Varicella-zoster virus (VZV) DNA copies were both

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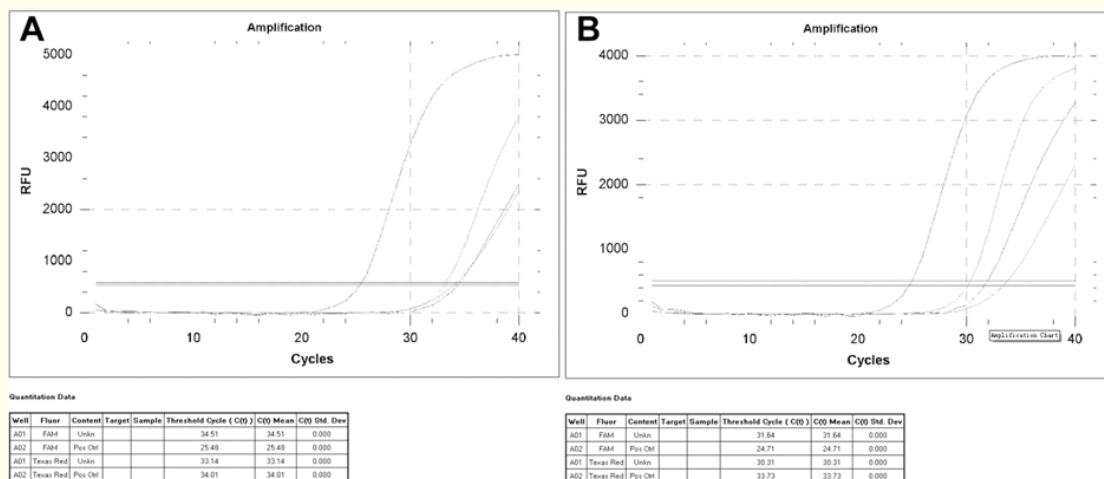
revealed using polymerase chain reaction (PCR) in the vitreous and the patches (Figure 3A, 3B). BCVA 3 months after silicone oil was removed in the left eye was 6/12.



**Figure 1:** (A and B) In left eye, funduscopy examination and fluorescein angiography revealed a clinical picture of circumscripted retinitis in the nasal quadrant peripheral retina, with whitish inflamed areas, ghost blood vessels and bleeding marked sheathing of vein and artery, especially discrete white patches on the blood vessels similar to segmental perivasculitis, but chiefly on the course of the veins. (C) Image of B at high magnification.



**Figure 2:** The patches could be easily dissociated with a flute needle.



**Figure 3:** A viral examination of the vitreous (A) and the patches (B) was performed using PCR, and Varicella-zoster virus (VZV) DNA copies were both revealed.

### Discussion

The apparently healthy adult had typical ARN with feature of discrete white patches on the blood vessels caused by VZV, the leading cause of ARN [1,2]. Differing antiviral treatment strategies did not affect outcomes [3], and prophylactic laser retinopexy failed to prevent secondary RD [4]. However, the patches were easily to be removed, we could find that the involved vascular was not occlusive. The patch is exudate from blood vessel; its PCR result is consistent with that of vitreous, also important for ruling out other causes of retinitis.

### Conclusion

This case suggests an apparently healthy adult may have typical ARN with feature of discrete white patches on the blood vessels caused by Varicella-zoster virus, and the patch is exudate from blood vessel.

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