

Central Retinal Artery Occlusion Associated with Varicella Dermatitis

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Abstract

A 12 year girl presented with left eye (LE) loss of vision for four days. Fundus examination and fluorescence angiography revealed LE central retinal artery occlusion (CRAO). She had multiple rashes all over the body. IgM-Varicella antibody assay corresponded with varicella infection and she was diagnosed with CRAO associated with varicella dermatitis.

Introduction

Herpes zoster, caused by varicella-zoster virus (VZV) is usually a benign self-limited disease¹. It is one of the most common infectious diseases in United States². Usually children between one and nine years of age are affected³. Primary infection with this virus leads to generalized varicella dermatitis (chickenpox). It is often followed by chronic pain (postherpetic neuralgia), as well as vasculopathy, myelopathy, retinal necrosis, and cerebellitis⁴. It usually affects small and medium sized arteries⁴. Ocular manifestations occur when the ophthalmic division of the trigeminal nerve is affected¹, mostly involving the anterior segment which resolves without permanent visual sequelae⁵. Rarely, severe posterior segment manifestation in the form of optic neuritis and retinitis may develop¹.

We present a patient with near total monocular visual loss following varicella dermatitis.

The Case

A 12-year-old girl complained of sudden painless loss of vision in her left eye for four days. On questioning, she gave history of fever and multiple rashes all over body for five days prior to onset of ocular symptoms. She was diagnosed as varicella and managed in a local clinic with oral acyclovir. There was no history of similar rash, bleeding or clotting disorder, recent blood transfusion, anti-koch treatment, any persistent drug use in the past or similar illness in any family members. Child had received vaccine as per National immunisation program. There was no history of varicella vaccination in past.

On ocular examination, visual acuity was 6/6 in right eye (RE) and 1/60 in left eye (LE). Anterior segment slit lamp examination was uneventful. There was presence of relative afferent pupillary defect (RAPD) in left eye. Applanation tension was 14 mmHg in each.

Fundoscopy revealed normal retina in RE and marked retinal edema with cherry-red spot in the LE (Figure 1A, 1B). Fluorescein angiography (LE) demonstrated delayed arteriolar filling at 179 seconds suggestive of central retinal artery occlusion with involvement of cilio-retinal artery as well.

Paediatrician consultation was done and systemic examination was normal except for the rash (Figure 1C) that was in different stages of development from vesicles, pustules to eschar.

Routine blood examination including clotting profile, complete blood counts, fasting blood glucose, lipids, and urinalysis were normal. Serological studies for HIV, HBsAg, TORCH and TB were negative. There

was neutrophilia (75%) and erythrocyte sedimentation rate (60 mm/hr) was raised. Immunoglobulins for varicella were markedly increased when tested at the time of presentation (IgG=0.6 IU, IgM=11.2 IU, reference normal value <0.8 IU).

Treatment was attempted with oral acetazolamide 250 mg thrice daily for 3days and oral acyclovir 800 mg five times a day for 7 days without success.

The retinal oedema decreased over the subsequent three months period but the appearance of arterioles remained the same (Figure 1D). The optic disc became pale and atrophic. Her visual acuity did not improve even at final follow-up.

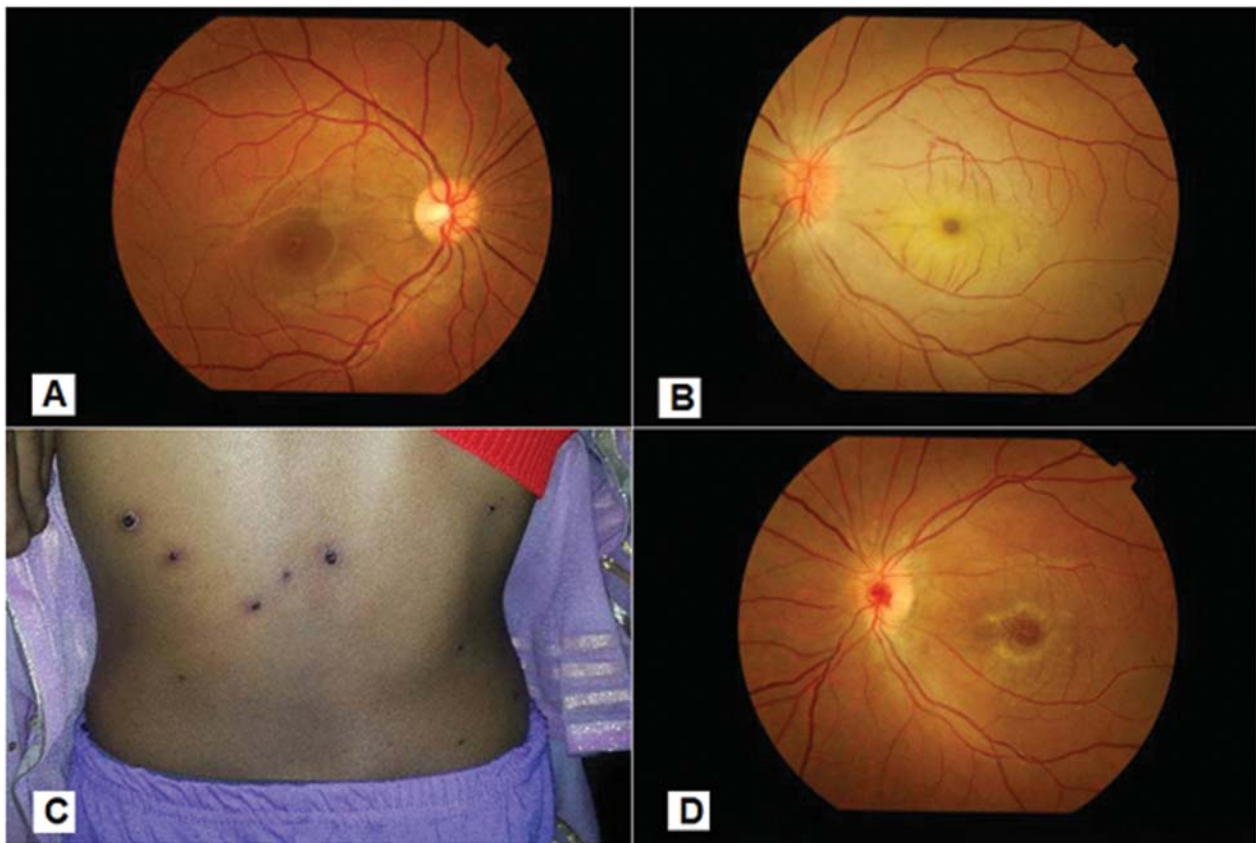


Fig 1: Colour fundus photo and skin lesions. (A) Normal fundus photo of right eye. (B) Marked retinal edema with cherry-red spot in left eye at presentation. (C) Multiple skin lesions in the stage of scab formation. (D) Resolved retinal oedema with optic atrophy and pigmented macula in left eye at three month follow-up.

with immediate anterior chamber (AC) paracentesis followed by a week's course of intravenous acyclovir without any visual gain². There was no improvement in visual acuity after treatment with AC paracentesis and intravenous acetazolamide in the case reported by Cho N et al⁸.

Jayram H et al reported no improvement with intravenous acyclovir and methylprednisolone¹². Adding oral steroid to oral acyclovir also has poor visual outcome²⁰. Similarly, our patient also did not respond to treatment with oral acyclovir and acetazolamide.

Conclusion

Para-infectious vasculitis and angiitis following viral illness may be the cause of CRAO secondary to Varicella-Zoster infection in our patient. Children suffering from chickenpox and with ocular symptoms like congestion, blurred vision should immediately be subjected to an ophthalmological examination, irrespective of their immunologic status. Whether early diagnosis and prompt treatment can preserve some residual visual function remains a matter of debate.

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