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Bilateral Segmental Optic Disc Edema in Vitamin A Deficiency

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BACKGROUND

Vitamin B1 deficiency/Wernicke's encephalopathy comprises the triad of ataxia, ophthalmoplegia and encephalopathy. We report a case of acute presentation of optic neuropathy and ophthalmoplegia secondary to vitamin B1 insufficiency.

CASE DISCUSSION

A 48-year-old woman presented to the hospital with intractable nausea and vomiting of unknown etiology. Ophthalmology was consulted for concerns of blurry vision and nystagmus. Ocular examination revealed horizontal gaze evoked nystagmus and partial horizontal gaze palsy with normal visual acuity (VA) at bedside and normal dilated fundus exam (DFE). Two days later, vision decreased to 20/60 right eye (OD) and 20/200 left eye (OS) with central and temporal defects on confrontation visual field testing. Repeat DFE showed symmetrical segmental temporal disc edema involving the papillomacular bundle in both eyes (OU) **(Fig 1 and Fig 2).** Given the findings of nystagmus, horizontal gaze palsy (ophthalmoplegia), and optic nerve edema in addition to ataxia, Wernicke's encephalopathy was suspected. Urgent MRI brain and orbit showed T2 hyperintensity in medial thalami bilaterally **(Fig 3).** Patient was found to have low vitamin B1 level (<10 ug/L).

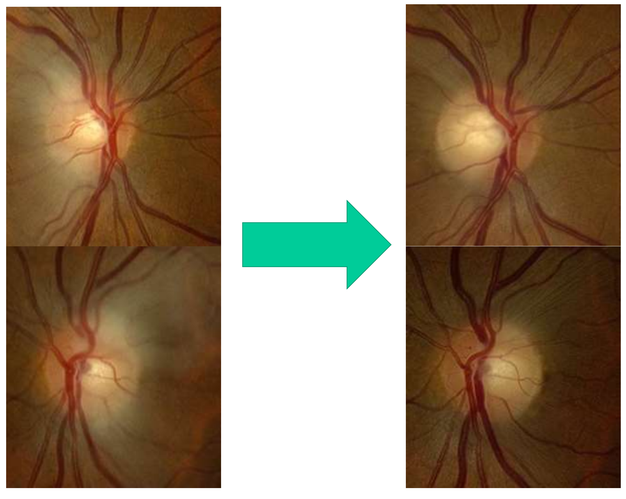

Figure 1: Fundus photo demonstrating bilateral temporal optic nerve edema that resolved after B1 supplementation.

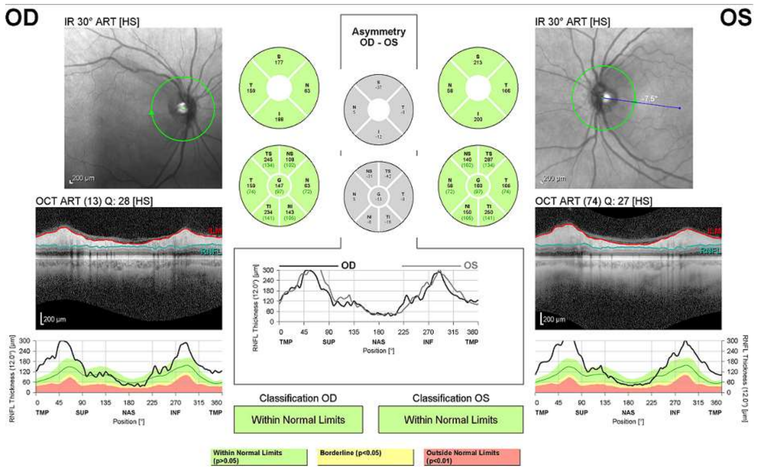

Figure 2: Initial OCT of optic nerve that demonstrates edema of the papillomacular bundle.

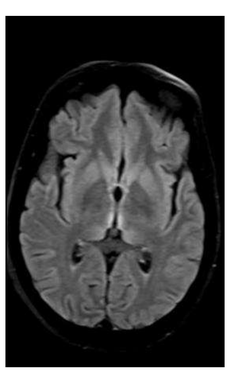

Figure 3: MRI brain -Axial T2 flair images showing T2 hyperintensity in medial thalami.

MANAGEMENT

Patient was started on intravenous B1 supplementation for 3 days followed by oral supplement. Patient noted a rapid improvement in her visual symptoms with return of VA to 20/25 OD and 20/20 OS, resolution of the visual field defect, and improved gaze paresis and nystagmus within 20 days. Patient developed subtle temporal disc pallor with thinning of temporal retinal nerve fiber layer bilaterally.

CONCLUSION

- Optic disc edema as initial presentation has rarely been reported in cases of acute Vitamin B1 deficiency.
- The importance of high clinical suspicion for vitamin B1 deficiency in appropriate clinical setting cannot be overemphasized.
- MRI brain needs to be reviewed with the neuro-radiologist personally in subtle cases of T2 hyperintensity which might be missed otherwise.

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