



The Best VisioNewsletter

The Swollen Optic Nerve – Case Study

History

A 54 yo white male presented complaining that his right eye seemed blurry "like a film was over it." This started suddenly 3 weeks prior and he was otherwise asymptomatic. He had had no trauma and the history was negative for eye pain, flashes or floaters, photophobia, discharge, or recent sickness. He was healthy except for sleep apnea, and was not taking any medications. His family doctor referred him and recent blood pressure was normal.

Examination

BCVA OD 20/25 and OS 20/20; refraction did not yield any improvement OD. There was no obvious afferent pupillary defect (APD). Color vision was 7/7 in each eye using the pseudo-isochromatic plates. However the red cap desaturation test was reported as 50% less red in the right eye. IOP was 15 OU. Slit lamp exam demonstrated trace nuclear sclerosis OU. Dilated fundus exam revealed blurred margins of the optic nerve head OD with 1+ sectoral hyperemia. The OS nerve head was normal, and the remaining fundus was healthy OU. Computerized visual field exam demonstrated an inferior altitudinal defect OD and was WNL OS.

Diagnosis

Papillitis OD. The objective is to determine the cause of the disc edema. *Optic neuritis* is most common in ages 15-45 and 90% of such patients demonstrate pain on eye movement. *Anterior ischemia optic neuropathy* involves reduced posterior ciliary artery circulation resulting in infarction of the anterior portion of the optic nerve. Such patients are divided into arteritic (A-AION) and non-arteritic (NA-AION) sub-types, the former being associated with temporal arteritis. A-AION is more common in individuals > 55 yo, and the vision loss tends to be more profound (counting fingers). Temporal arteritis patients will often have symptoms such as headache, scalp tenderness, jaw claudication, weight loss or fever, though 15% of such patients are asymptomatic. NA-AION is seen in patients 40-60 yo and is typified by painless non-progressive visual loss of moderate degree. Typical signs include APD, pale disc swelling often involving only a segment of the disc, altitudinal visual field defect (inferior most common) and optic atrophy after the edema resolves. The etiology is idiopathic with theories that arteriosclerosis, diabetes, and hypertension could be causative, although no studies have proven this. NA-AION has also been postulated to represent a compartment syndrome in which optic nerve fiber and vessel crowding within a rigid scleral canal result in ischemia.

Our patient's diagnosis is NA-AION due to age and clinical presentation. There is no effective treatment. The patient will be instructed to return periodically for observation.

Follow up and Key Points

- The patient followed up in 1 month and reported vision to be the same and still showed the altitudinal defect although a little smaller and less dense.
- Note that he had no obvious APD at initial visit and it was difficult to detect even at follow up. He also did well on color vision but very poor on red cap desaturation.
- Important to rule out AION as this condition can rapidly become bilateral and result in significant visual loss. Obtain an ESR, which would be markedly elevated. ESR is normal in NAION.
- Educate the patient, as the visual loss is permanent with no known treatment.

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