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Glaucomatous Case with a Warning Sign of Cerebral Ischemia and Atherosclerosis

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Abstract: ***This article explores the intricate relationship between glaucoma and anterior ischemic optic neuropathy AION through a compelling clinical case. Glaucoma, a chronic optic neuropathy, often shares clinical features with AION, necessitating a careful differential diagnosis. We present a 61-year-old male with pseudoexfoliative glaucoma and AION in his left eye, emphasizing the importance of comprehensive evaluation in glaucoma patients, particularly when optic disc pallor is evident. The case underscores the association between systemic vascular conditions, such as hypertension and atherosclerosis, and ocular ischemic disorders, emphasizing the significance of timely investigations and interventions. This study emphasizes the critical role of ophthalmologists in early detection, evaluation, and management of potentially sight-threatening and life-threatening conditions in glaucoma patients.***

Keywords: Glaucoma, anterior ischemic optic neuropathy, optic disc pallor, vascular insufficiency

1. Introduction

Glaucoma is characterized by chronic progressive optic neuropathy with corresponding visual field changes, with or without raised intraocular pressure (IOP). Anterior ischemic optic neuropathy is presumed to result from a circulatory insufficiency, or infarct, within the retrolaminar portion of the optic nerve head that is supplied by the short posterior ciliary arteries (SPCA). Acquired conditions such as post-traumatic optic neuropathy, ischemic optic neuropathies, hypoxic ischemic encephalopathy, and hereditary optic neuropathies can present with increased optic disc cupping and loss of neuroretinal rim mimicking glaucoma.[1, 2]

2. Case

A 61yr old male, known hypertensive from 5 years and ischemic heart disease from 4 years came to our glaucoma department for second opinion. He was using timolol0.5%+ latanoprost0.005% HS both eyes (BE) from 4months. On examination, his vision was 6/9 in right eye (RE) and 6/12 in left eye (LE) with add +2.50DS N6 BE. Anterior segment was normal expect for pseudoexfoliation (PXF) in BE and relative afferent pupillary defect in LE. Intraocular pressure was 10mmHg BE, gonioscopy showed open angles BE. Fundus reveled RE-CDR 0.6 superior slope, macula normal and foveal reflex present. LE-tilted disc with mild parlor CDR 0.8 bipolar slope, attenuated vessels, whitening of macula and Diagnosed as BE pseudoexfoliative glaucoma with LE reperfused central retinal artery occlusion. Patient was advised to stop timolol + latanoprost and started on brinzolamide1%+brimonidine0.2%TID BE as brinzolamide is supposed to increase optic nerve head (ONH) perfusion and neuro protection action of brimonidine. Visual fields of RE showed inferior arcuate scotoma and LE- biarcuate scotoma.

MRI brain and doppler carotid and vertebral arteries along with neurologist opinion was advised but patient lost to follow up and presented to us after 2months with defective right sided vision from 1week. His vision remained same, colour vision RE21/21 but LE 0/21. Fundus findings of RE remained same but LE showed pale disc with CDR 0.8.

Field test was repeated BE. RE-status quo but LE-Biarcuate scotoma with 0dB throughout the superior arcuate as an altitudinal defect unlike previous field, indicating the development of anterior ischemic optic neuropathy (AION) along with glaucomatous defect. Patient was insisted to get the investigations and neurologist opinion as early as possible.

3. Results

MRI brain showed chronic ischemic changes in cerebral white matter. Carotid and vertebral doppler showed bilateral atheromatous changes with 30-40% block in right proximal ICA and 20-30% in left carotid bulb.

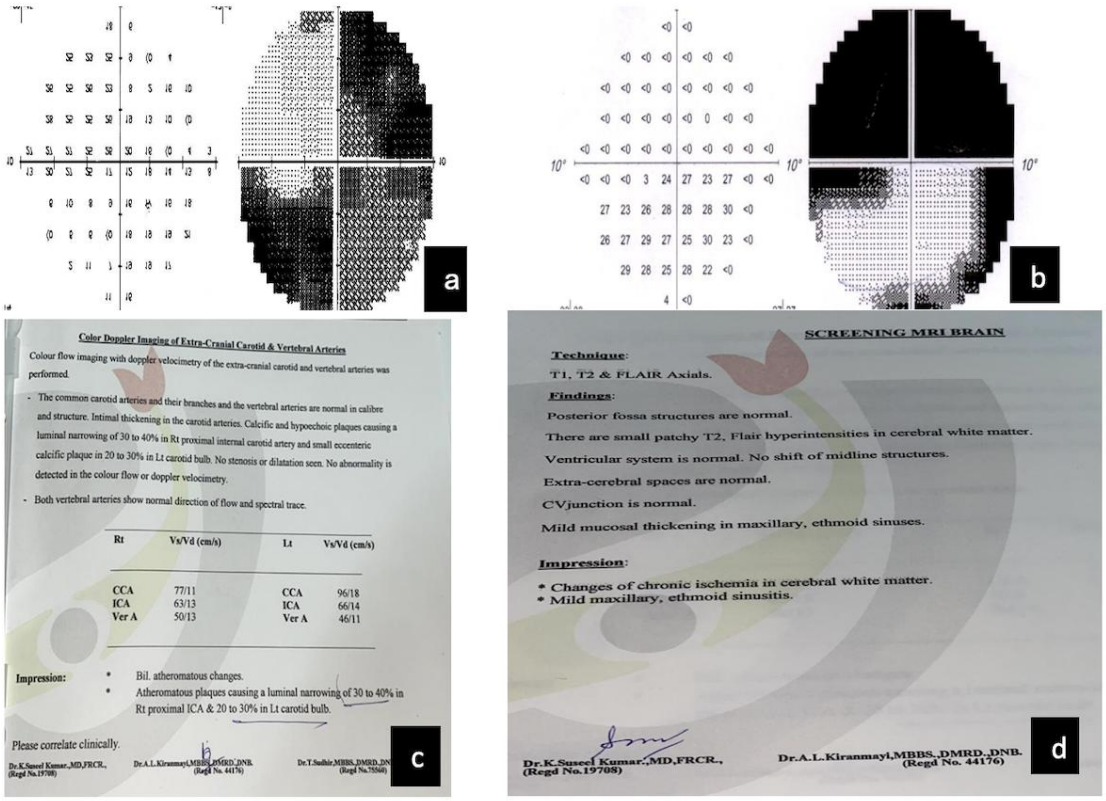

Fig 1: (a) Visual fields on first visit showing biarcuate scotoma without macula split. (b) Visual fields on second visit showing altitudinal scotoma. (c) Doppler report of atheromatous changes in carotids. (d) MRI report showing ischemia in cerebral matter.

4. Discussion

Vascular insufficiency in optic nerve head can lead to both anterior ischemic optic neuropathy and glaucomatous optic neuropathy, both representing ischemic disorders of ONH. Whatever rim remaining in glaucoma is always pink but not pale. If the NRR is pale, some pathology other than glaucoma should be suspected even in glaucoma patients and this suspicion would be lifesaving sometimes like in the present case. The etiology for pallor in a glaucoma patient should be evaluated thoroughly for any other ischemic changes in the body by doing MRI and doppler studies. Systemic hypertension and ischemic heart diseases lead to atherosclerotic changes in carotids that can cause retinal vascular occlusions and anterior ischemic optic neuropathy which goes hand in hand with glaucoma [3,4] as seen in this case. Always all possibilities of age-related diseases should be kept in mind while working up a glaucoma patient.

5. Conclusion

An elderly male, having neglected our advice may be because of lack of awareness about health or because of poor geriatric care of non-earning individuals in the family landed in stroke.

High index of suspicion by differentiating the exclusive glaucomatous disc from neurological/ischemic disc with early and prompt systemic investigations and treatment would save the patient from visual impairment as well as life threatening conditions.

References

[1] Choudhari NS, Neog A, Fudnawala V, George R. Cupped disc with normal intraocular pressure: the long road to avoid misdiagnosis. Indian J Ophthalmol. 2011;59(6):491.
[2] Fard MA, Moghimi S, Sahraian A, Ritch R. Optic nerve head cupping in glaucomatous and non-glaucomatous optic neuropa- thy. British J Ophthalmol. 2019;103(3):374–3
[3] Danesh-Meyer HV Savino PJ Sergott RC . The prevalence of cupping in end-stage arteritic and nonarteritic anterior ischemic optic neuropathy. Ophthalmology. 2001;108:593–598.
[4] Quigley HA Anderson DR . Cupping of the optic disc in ischemic optic neuropathy. Trans Am Acad Ophthalmol Otolaryngol. 1977;83:755–762.