

Chorioretinal Scar Presenting With Arcuate Visual Field Defect

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Introduction: An arcuate scotoma is one of the typical visual field defects seen in open angle glaucoma^[1]. However, it has been reported in association with other diseases affecting the visual pathway^[2-4]. We report a case of arcuate visual field defect from chorioretinitis mimicking glaucoma. The aim of this article is to draw attention to the fact that arcuate scotoma may result from causes other than glaucoma.

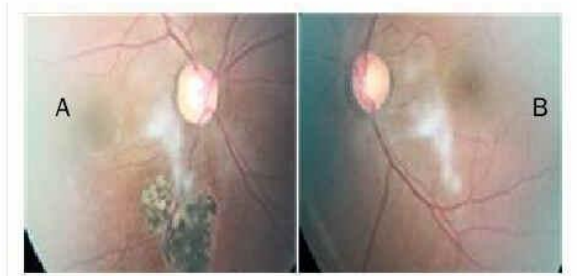


Fig. 1: Fundus photograph. (A) Right Eye: Hyperpigmented, punched out, atrophic scar seen inferotemporal (about 1DD) to the disc; (B) Left normal fundus

Case Report: A 25 year old male was managed for right panuveitis secondary to presumed toxoplasmosis. Visual acuity was 6/9 (Right Eye) and 6/5 (Left Eye). There were fresh keratic precipitates, mid-dilated, unreactive pupil and a chorioretinal lesion inferotemporal to the disc in the right eye. Left ocular findings were normal. The cup disc ratio (CDR) was 0.4 and 0.3 in the right and left eyes respectively. Intraocular pressure (IOP) was 16mmHg and 14mmHg in the right and left eyes respectively. The panuveitis resolved with

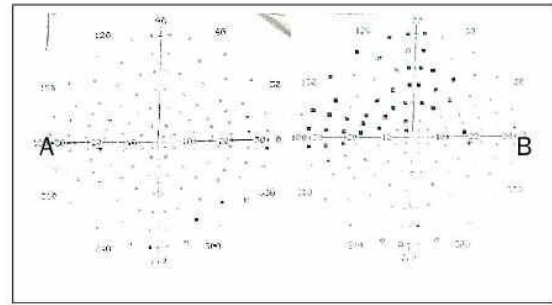


Fig. 2: Automated visual field test. (A) Normal Left eye; (B) superior arcuate scotoma corresponding to the area of the chorioretinal scar in Right eye

treatment. On follow up at 42months, the patient had a subjective complaint of superior visual field defect in the right eye. Visual acuity was 6/6 in each eye; there was a right relative afferent pupillary defect, and an atrophic scar inferotemporal to the right disc (figure 1). Ocular findings in the left eye remained normal. CDR was 0.6 and 0.3 in the right and left eyes respectively. IOP was 11mmHg in both eyes. He had not been on any IOP lowering drops. Automated visual field testing revealed a right superior arcuate scotoma which corresponded to the area of the chorioretinal scar and a normal left visual field (figure 2).

Discussion/Conclusion: The retinal ganglion cell axons enter the optic nerve head in 3 major groups: arcuate fibers, papillomacular fibers and radiating nasal fibers^[5]. Arcuate fibers are made up of axons from retinal ganglion cells temporal to the optic disc and they arch over the papillomacular bundle^[4]. Thus, lesions affecting the arcuate fibers may result in arcuate shaped scotomas. Arcuate scotoma is most frequently associated with glaucoma. However, it has been reported in lesions of the retina, optic disc, optic nerve and chiasm which include pituitary adenoma, opticochiasmatic arachnoiditis, chorioretinitis, optic nerve drusen, optic disc pit, optic nerve injury, optic neuritis and ischemic optic neuropathy^[2-4]. Anatomically, the arcuate bundles are more compactly packed as they get closer to the optic disc, hence lesions close to the disc would give rise to wider visual field defects unlike lesions towards the retina periphery which will cause isolated scotomas. In our patient, damage to the

inferior temporal nerve fibre bundle close to the disc led to a corresponding superior arcuate scotoma and enlargement of the optic cup, optic atrophy and a relative afferent pupillary defect. Failure to recognize the fact that juxtapapillary chorioretinitis affecting arcuate fibers close to the disc can cause arcuate scotoma, may lead to an erroneous diagnosis of glaucoma. Visual field defects occur after extensive optic disc cupping in glaucoma[4], and the remaining neuroretinal rim is pink^[6]. Characteristically, in glaucoma there is progression of the visual field defect with time, unlike a chorioretinal scar in which the scotoma is non-progressive. Arcuate scotoma is typical of but not limited to glaucoma. Chorioretinitis close to the optic disc in the distribution of the retinal arcuate nerve fibers can result in arcuate scotoma. Visual field defects should be interpreted in relation to other clinical findings.

References

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