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Morning Glory Disc Anomaly: A Case Report

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Abstract: ***I am presenting a case of congenital anomaly of the optic disc, a rare one. The patient presented with excavated, enlarged colobomatous optic nerve head filled with glial tissue surrounded by peripapillary pigmentary abnormalities. Strabismus and reduced visual acuity are the complications observed in the affected eye. Contra lateral eye is normal. So I examined both eyes comprehensively using various ocular investigations for diagnosis, associated systemic disorders and complications.***

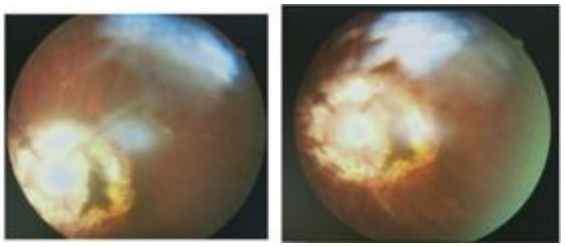
Keywords: Case report, congenital anomalies, Morning glory disc anomaly

1. Introduction

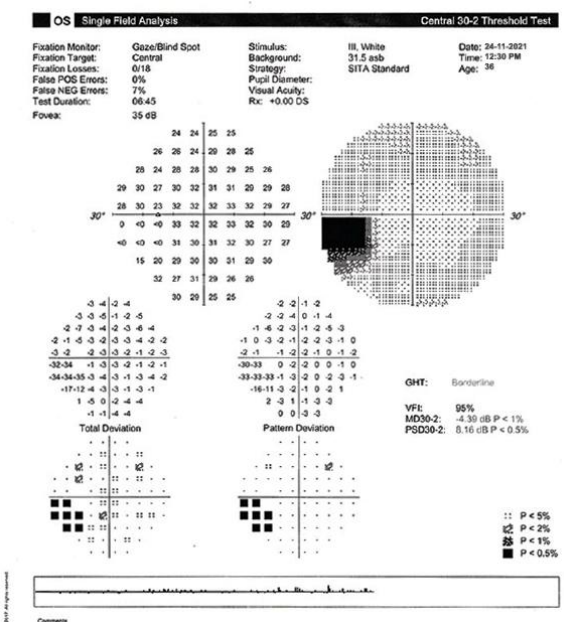
Morning glory disc anomaly (MGDA) is a rare congenital malformation resulting from incomplete formation of the optic nerve in utero. The term MGDA coined by kindler. It is unilateral commonly and more female predisposition. Rarely it may present bilaterally the exact cause is not known for its development, and there are different postulations. 1) According to pedlar, the defect was secondary to faulty closure of the posterior sclera with herniation of the optic disc. 2) Others postulated it may be a primary mesenchymal abnormality. 3) Pollock argued that there was distal optic stalk dysgenesis, which failed to close leaving anomalous persistence of the optic cup cavity into the optic stalk. This case report reviewed the clinical features and characteristics of MGDA with the role of various ocular investigations for diagnosis.

2. Case Report

A 36 Year old male came to the outpatient department REH, Kurnool for his complaints of reduced Vision in left eye, which was present since his child hood. His birth history and family history were un eventful. His mental status was normal his best corrected visual acuity in left eye counting finger 1 meter(CF 1 Meter) and in right eye 6/6 examination of anterior segment (AS) and IOP were within normal range (Gold mann applanation tonometry OD 16 mm of Hg OS 14mm of Hg). There was isocoria and mild RAPD in Left eye. Ocular aligment was left eye exotropia and EOM were full in all direction of gazes. Ophthalmoscopic fundus examination of left eye present as enlarged and excavated funnel shaped disc with elevated tuft of glial tissue centrally, thin radial retinal vessels emerging at the margins of the optic disc from under the central tissue and followed a relatively straight course to the periphery of the retina with annulus of peripapillary pigmentary changes, normal A/V Ratio. The foveal reflex was dull, the peripheral retina was intact without suggestion of retinal detachment (RD).



(a) LE coloured fundus photograph showing an enlarged and excavated funnel-shaped optic disc with an elevated central tuft of whitish glial tissue with thin radiating retinal vessels emerging at the optic disc margin from under the central tissue and following a relatively straight course to the periphery of the retina with annulus of peripapillary pigmentary changes. B-Scan ultrasonography left eye at posterior pole showed an anomalous excavation conoid in shape with the disc at the base. B-Scan of posterior pole of right was normal. CT Imaging of the cranium and both the orbits did not reveal an pathology. Using the Automated Humphrey Field analyser central 30-2 threshold test (Swedish Interactive Threshold Algorithm (SITA) standard, stimulus III white, fixation target central and fixation monitor blind spot), single-field analysis of LE revealed an enlarged blind spot. RE field analysis was within normal limits.



Automated HFA central 30-2 threshold single-field analysis of LE reveals an enlarged blind spot OCT macula shows normal foveal contour normal macular thickness.

3. Discussion

The loss of vision in Morning Glory Syndrome (MGS) may be due to macular abnormalities or secondary to development of anisometropic or strabismic amblyopia. Whereas in our case, the cause of reduced visual acuity in LE is Strabismic amblyopia.

Usually most cases are seen as isolated ocular abnormalities. Ocular anomalies commonly observed in the affected eye with MGS include RAPD, visual field defects such as enlargement of blind spot and/or dense central scotoma, strabismus,, mild–moderate myopia and retinal detachment, presence of hyaloid artery remnant, ciliary body cyst, congenital cataract, lid haemangioma,vitreous cyst, posterior lenticonus, aniridia, posterior sub-capsular cataract and pre-retinal gliosis.

OCT plays a significant role in early diagnosis and evaluation of possible sub-retinal fluid, thus providing information regarding the pathogenesis and associated clinical features.

Our case report shows normal macular thickness.

MGS has some systemic associations including congenital forebrain abnormalities such as basal encephalocele (trans-sphenoidal and spheno-ethmoidal) and endocrine alterations, midline facial defects including hypertelorism, cleft lip or cleft palate, renal hypoplasia and other renal abnormalities. Rarely, it can, be associated with Aicardi's syndrome and Down's syndrome. It should be differentiated from other congenital optic disc anomalies such as optic disc coloboma and peripapillary staphyloma. The optic disc coloboma is bowel shaped white excavation involving inferior protion, extends to choroid and retina and minimal periparpillary pigmentry disturbances. Central glial tuft is not seen where as MGDA is funnel shaped orange excavation of the posterior incorporating optic disk with periparpillary anular pigmentation and central tuft of glialt tissue. In peripapillary staphyloma there is developmental weakness of the posterior sclera leading to stretching of choroid and exposure of sclera with normal appearing sunken optic disc below the surrounding retinal level.

Due to variable presentation, various ocular investigations such as B-scan, OCT and FFA are only helpful in confirming the diagnosis and early detection of complications. In view of the presence of a tuft of whitish tissue within the colobomatous elevated optic disc and abnormal presentation of central retinal vessels, our case would be best classified as a case of isolated MGDA. It is non-progressive in nature and does not require treatment. However, because of its association with other ocular anomalies, high risk for developing neuro-sensory retinal detachment and possible systemic abnormalities, early accurate diagnosis and monitoring are essential.

4. Financial support and sponsorship

Nil

5. Conflicts of interest

There are no conflicts of interest.

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