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MORNING GLORY OPTIC DISC ANOMALY- A RARE CASE

Ophthalmology

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ABSTRACT

INTRODUCTION: The term morning glory reflects the morphological similarity of the optic disc to the flower of the morning glory plant.
PURPOSE: To report a rare case of optic disc anomaly and differentiate it from other excavated anomalies of the optic nerve head.
MATERIALS AND METHODOLOGY: A 13yr/Male presented to the Ophthalmology OPD at Pravara Rural Hospital, Loni with diminution of vision in right eye since 3 years-gradual, progressive and painless. O/E, he had vision of 6/36 in right eye improving to 6/24 with refraction. Left eye visual acuity was 6/6.
RESULTS: Fundus showed appearance of a large funnel shaped excavation in optic disc, with white, elevated, hyperplastic glial tissues occupying the central disc, a wide annulus of chorioretinal pigmentary disturbance within the excavation with abnormally narrow, straight vessels, increased in number, radiating from the disc margins. MRI brain and orbit showed no abnormality. B scan showed a deep excavated cup in the right eye. OCT showed increased disc and cup area and decreased neuroretinal rim area in right eye.
CONCLUSION: There is no treatment for this anomaly till date. Management is currently directed mainly towards preventing and treating the complication.

KEYWORDS

morning glory, morning glory optic disc anomaly, rare congenital anomaly

INTRODUCTION

FIG 1: FLOWER OF MORNING GLORY PLANT

Morning Glory Disc Anomaly(MGDA) – The term reflects the morphological similarity of the optic disc to the flower of the morning glory plant. It is defined as an enlarged disc with a funnel shaped excavated peri-papillary region that is surrounded by a wide elevated annulus of chorioretinal pigment, with a central white tissue and retinal vessels that exit at the edge of the disc and run radially towards the peripheral fundus. [1]It is a sporadic condition whose pathogenesis is not known. The various hypotheses that have been put forward are failure of closure of fetal fissure and primary mesenchymal abnormality, dysgenesis of terminal optic stalk, primary neuroectodermal dysgenesis. It is associated with transphenoidal basal encephalocele, midfacial malformations[2], pan hypopituitarism.

It is rarely seen in blacks, is usually unilateral, sometimes bilateral and is more commonly seen in females. Visual acuity is generally 6/60 to counting fingers (in rare cases as good as 6/6). Amblyopia may be seen in unilateral cases. Strabismus may also be present.[2]Visual field defects may show an enlarged blind spot.[2,3]. Complications like serous retinal detachment (in 30%[4]), subretinal neovascularization under peripapillary and foveal area[5] may be seen.

Remarkable phenomenon of contractile movements of optic disc have been reported.[5] Differential diagnosis of MGDA are optic nerve coloboma, peripapillary staphyloma.[2]

PURPOSE

To report a rare case of optic disc anomaly and differentiate it from other excavated anomalies of the optic nerve head. Incidence: 1 in 10 million.

MATERIAL AND METHODS

Presentation

A 13-year-old male presented to the Ophthalmology OPD at Pravara Rural Hospital, Loni with chief complaint of diminution of vision in right eye since 3 years which was gradual, painless and progressive. Systemic, gestational and family history was unremarkable. No associated facial abnormalities were noticed.

On Ocular Examination

BCVA	6/24	6/6
AR	+0.50/-1.255 at105°	+1.25/-0.25 at 45°
IOP (NCT)	14 mmHg	18 mmHg
ANTERIOR SEGMENT	Orthophoric Pupil 2mm, reaction normal. Rest NAD	Orthophoric. Pupil 2mm, reaction normal. Rest NAD.

On fundus examination, right eye showed a large funnel-shaped excavation in optic disc with white, elevated, hyperplastic glial tissues, occupying the central disc. There was a wide annulus of chorioretinal pigmentary disturbance surrounding disc within the excavation. along with abnormally narrow, straight vessels, increased in number, radiating from the disc margins. Left eye fundus was within normal limits.

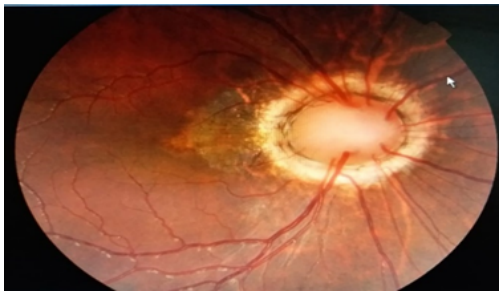

Fig 2: Right Eye Fundus Photograph

USG B-scan of right eye shows an anomalous funnel shaped excavation of the posterior fundus incorporating the optic nerve head. Low to moderate clump like echoes in front of the optic nerve head.

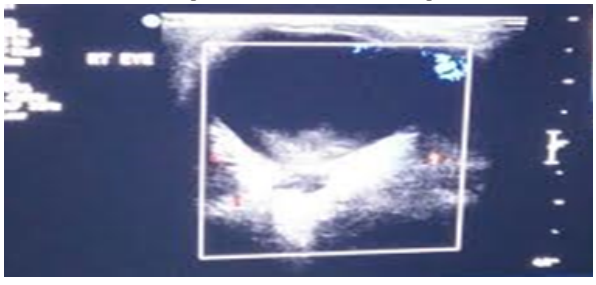

FIG 3: RIGHT EYE USG B- SCAN

MRI brain and orbit shows no abnormality.

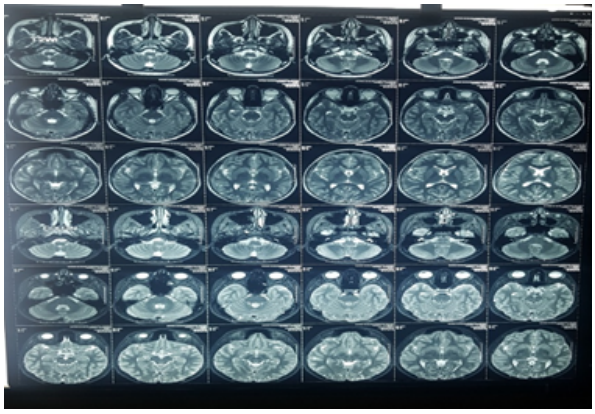

FIG 4: MRI BRAIN AND ORBIT

On OCT, in the right eye, disc area is increased (4.93mm^2 as compared to 2.93mm^2 in left eye), rim area is decreased (1.33mm^2 as compared to 2.65mm^2 in left eye), cup area is increased (3.60mm^2 as compared to 0.28mm^{2}2 in left eye).

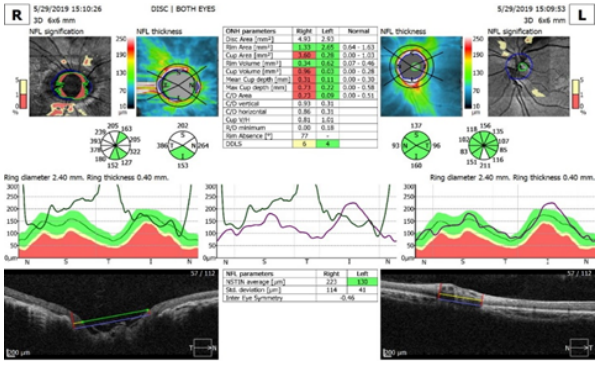

FIG 5: OCT- RIGHT EYE

DISCUSSION

MGDA is usually unilateral[7] as seen in our patient. MGDA is a descriptive classification for a characteristic lesion of the optic nerve. It needs to be distinguished from the other congenital disc lesions, especially optic nerve coloboma (ONC) and peripapillary staphyloma.[7] ONC, unlike MGDA, has no gender predilection, is often familial, bilateral and associated with multisystem genetic disorders[7.] Ophthalmoscopically, the two entities are distinct - the morning glory disc lies symmetrically and centrally within the excavation, whereas in ONC the excavation lies asymmetrically, and usually inferiorly within the optic disc. The absence of central glial hyperplasia, peripapillary depigmentation and anomalous retinal vasculature distinguishes ONC from MGDA. A comparatively deeper cup-shaped excavation, relatively normal, well defined optic disc and the absence of glial and vascular anomalies characterize peripapillary staphyloma.[7] Among associated ocular anomalies, retinal detachment, both serous and rhegmatogenous, occurs in about one-third (26-38%) cases of MGDA but was not noted in our patient whereas iris, ciliary, retinal colobomas and orbital cysts are more commonly associated with ONC.[8,9] MGDA are usually associated with intracranial disorders like basal encephalocele, pan hypopituitarism but these features were absent in our patient.

CONCLUSION

The clinical features and ancillary investigations establish the diagnosis of MGDA in our patient. The purpose of reporting this case is to report the existence of MGDA and to differentiate it from the other excavated anomalies of the optic nerve head which could differ in their management and prognosis. Treatment is directed towards preventing and treating the complications like retinal detachment.[3] Research is being performed to explore the possibilities for the treatment and prevention of this disease.[4]

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