

Multiple Sclerosis Presenting with Sixth Nerve Palsy in a Child

Dr Nada Al-Yousuf. FRCS (Ed), MHPE
Consultant Ophthalmologist & Associate Professor
King Abdullah Medical City
Kingdom of Bahrain



Co-authors: Professor Moiz Bakheit, Hasan Alsetri, Lolwah Aljutaili, Aisha AlHuweis, Abdullah Almutairi

**10TH EVOLVING PRACTICE OF OPHTHALMOLOGY
MIDDLE EAST CONFERENCE**

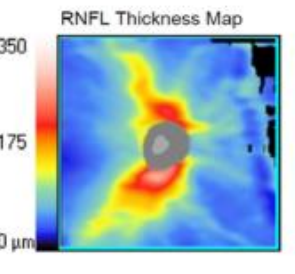
The case report

- Twelve-year-old Bahraini female
- Double vision since one week.
- The diplopia was mainly on looking straight and on right gaze.
- Visual acuity with correction was 0.8 in the right eye and 0.8 in the left eye.
- There was no relative afferent pupillary defect (RAPD).
- Slit lamp ophthalmic examination was normal
- Fundus examination was normal with no swelling of the optic discs of both eyes.

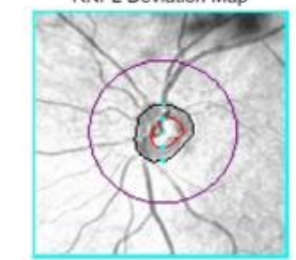
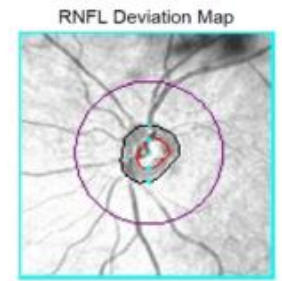
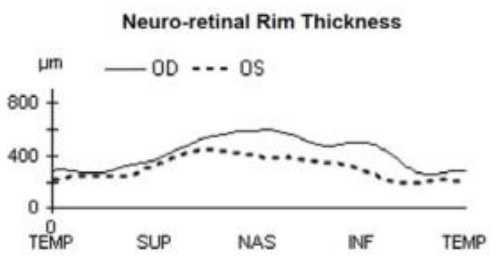
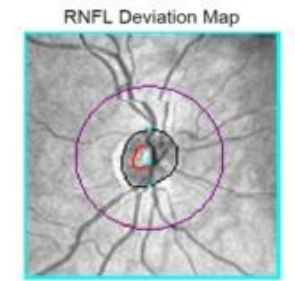
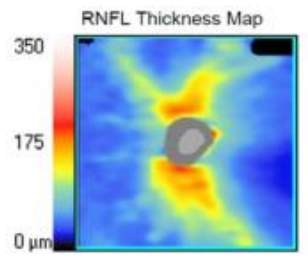


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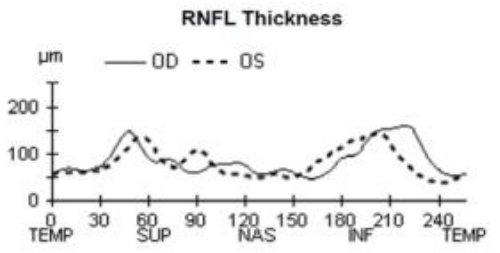
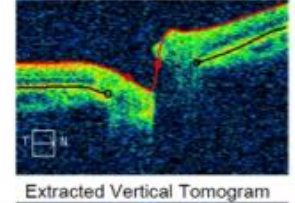




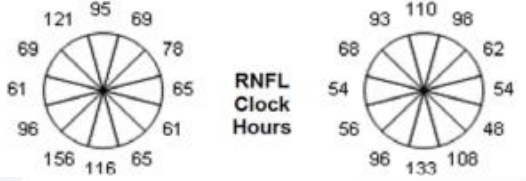
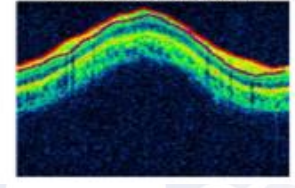
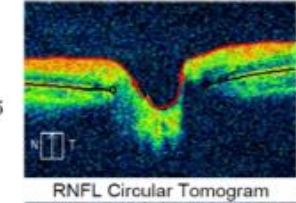
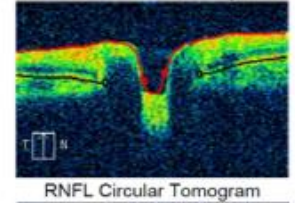
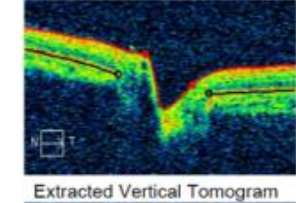
	OD	OS
Average RNFL Thickness	88 μm	82 μm
RNFL Symmetry	58%	
Rim Area	1.27 mm^2	1.04 mm^2
Disc Area	1.47 mm^2	1.45 mm^2
Average C/D Ratio	0.37	0.53
Vertical C/D Ratio	0.36	0.52
Cup Volume	0.052 mm^3	0.122 mm^3



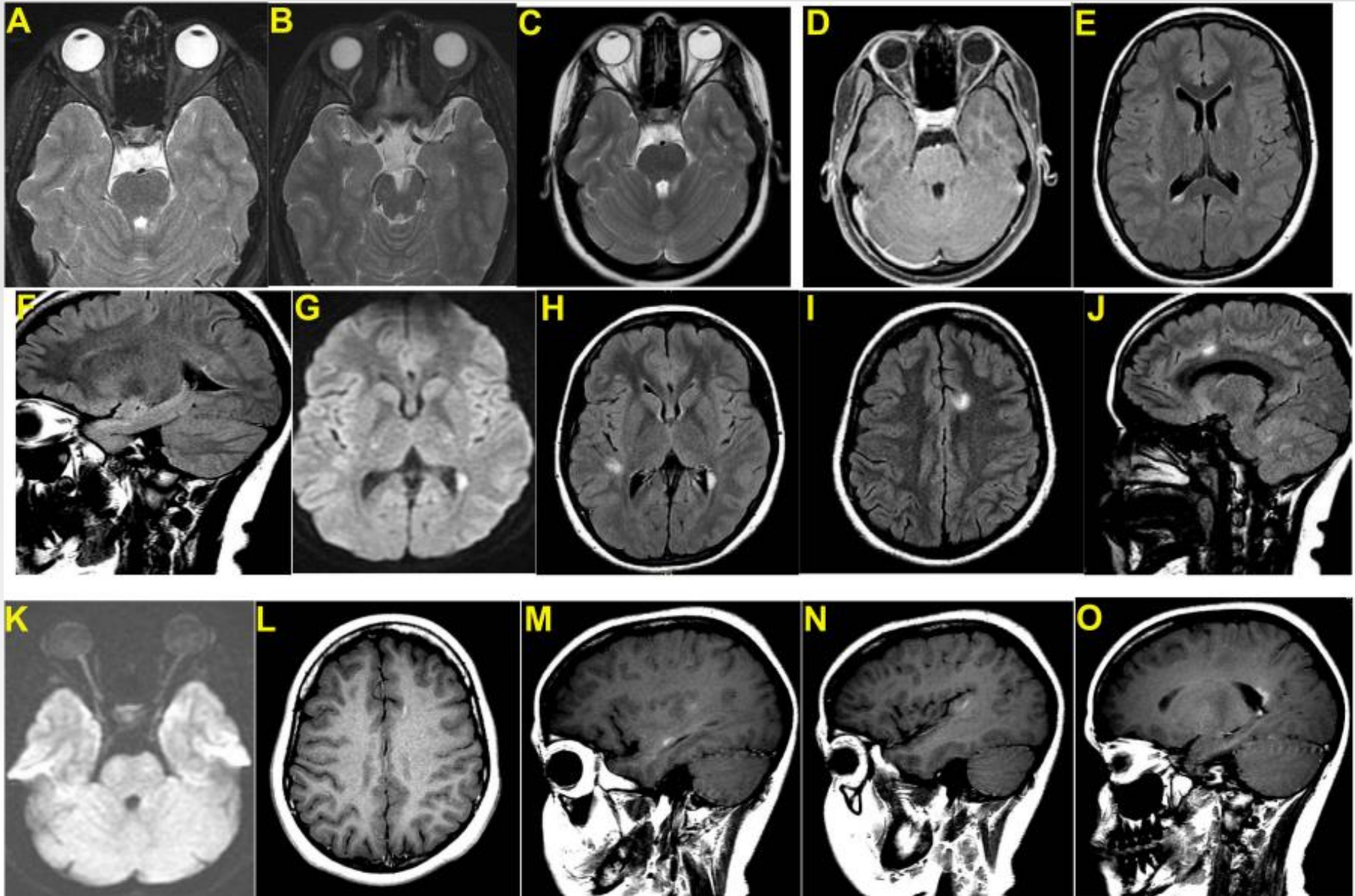
Disc Center (-0.09,-0.03) mm
Extracted Horizontal Tomogram



Disc Center (0.03,0.09) mm
Extracted Horizontal Tomogram



- The RNFL in the nasal quadrant of the right eye and left eye are 68 μm and 59 μm , respectively.
- Both readings are significantly thin compared with normal controls (96 μm).
- The RNFL in the temporal quadrant of the left eye is 55 μm which is severely thin compared with normal controls (73 μm).



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MRI findings

- Multiple periventricular and deep white matter nodular small foci are seen in both cerebral hemispheres including temporal lobes.
- Right optic nerve hyperintensity
- Nodular foci were seen at left frontal high periventricular, left peritrigonal and posterosuperior to right Sylvian fissure, left anteromedial margin of midbrain, and left superior cerebellar peduncle.
- The MRI features were suggestive of demyelinating disease & optic neuritis

Diagnosis of Multiple Sclerosis

- Solu-medrol 500 mg intravenously (IV)
- Omeprazole 40 mg IV and Vitamin D3 (cholecalciferol) 50,000 IU cap weekly for 8 weeks.
- Neurorubine forte tablets (vitamin B1, 6, 12)
- tapering dose of prednisolone 30 mg for 3 days and then reduced by 5 mg every 3 days with 20 mg of Nexium tablets daily.
- One week later, the patient was reassessed with no disability .
- Patient was put on interferon-beta treatment as a disease-modifying drug (DMD)
- Six months later She was fully recovered.

Discussion

- OCT is a useful tool in ON and MS which may reveal thinning in the RNFL in the absence of clinical findings
- Although the MRI findings suggested right eye optic neuritis, there was bilateral thinning of the RNFL on OCT
- RNFL thinning can be evident in the absence of clinical and MRI findings.
- It is not uncommon for children with MS to present with ON. However, sixth nerve palsy, as a presenting sign in pediatric MS, is rare.

Conclusion

- Pediatric multiple sclerosis can present as sixth cranial nerve palsy.
- Clinicians should have a high index of suspicion for early diagnosis and treatment.
- In addition to MRI, optic neuritis can be diagnosed by OCT, even in the absence of clinical signs.
- Future studies to investigate MRI and OCT correlation in optic neuritis, especially in children, are recommended.

