Özet

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Myelinli Retina Sinir Lifleri; Optik Koherens Tomografi; Retina Sinir Fiber Layer Thickness

Abstract
A 19-year-old male presented with low vision in the right eye since early childhood. Best corrected visual acuity was counting fingers at 10 cm and 1.0 in the right and left eyes. There was no relative afferent papillary defect; refraction was -6.50 -1.25 x 110 and -0.25 in the right and left eyes. Biomicroscopic examination and intraocular pressures were normal in both eyes. On fundus examination, there was large, cupped disk, extensive peripapillary myelinated retinal nerve fibers extending along superior vascular arcade in the right eye. Optical coherence tomography showed normal average peripapillary retinal nerve fiber layer (RNFL) thickness with thinning in superior quadrant and abnormal foveal contour in the right eye. Although MRNF not cause changes in average RNFL thickness, may cause serious vision loss by abnormal foveal morphology and anisometropic myopia.

Keywords
Myelinated Retinal Nerve Fibers; Optic Coherence Tomography; Retinal Nerve Fiber Layer Thickness
Introduction

Myelination of the optic nerve begins at the 32nd pregnancy week from the lateral geniculate nucleus and finishes at term. It arrives the lamina cribrosa a short time after birth [1]. Myelinated retinal nerve fibers (MRNF) are not normally found in the human retina, but histopathologic studies have demonstrated that pieces of MRNF contain oligodendrocytes [2]. Williams suggested that a defect in the lamina cribrosa would cause entry of oligodendrocytes into the retina [2]. It was supported by extensive retinal myelination in animals with little or no lamina cribrosa [2].

Anisometropic myopia, strabismus, abnormal foveal morphology, amblyopia and reduced vision may be associated with MRNF [4,5].

In this report, we present optical coherence tomography (OCT) findings in a patient with unilateral peripapillary myelinated retinal nerve fibers.

Case Report

A 19-year-old male presented with low vision in the right eye since early childhood. Best corrected visual acuity was counting fingers at 10 cm and 1.0 in the right and left eyes. Pupils did not show relative afferent pupillary defect; refraction was -6.50 -1.25 x 110 and -0.25 in the right and left eyes. Biomicroscopic examination and intraocular pressures were normal in both eyes. On fundus examination, there was large, cupped disk, extensive peripapillary MRNF extending along superior vascular arcade in the right eye (Figure 1). Optical coherence tomography (OCT) (Spectral OCT SLO, OPKO/OTI Instrumentation, Miami, FL, USA) showed normal average retinal nerve fiber layer (RNFL) thickness with thinning in superior quadrant (Figure 2) and abnormal foveal contour in the right eye (Figure 3). In addition, our patient has had epilepsy and chronic renal failure secondary to vesicoureteral reflux.

Discussion

Peripapillary MRNF can be congenital or acquired. Congenital retinal myelination is a developmental anomaly and the incidence in the population is 0.3-0.6%. Coexistence of MRNF and ipsilateral high myopia, amblyopia, strabismus, optic disk hypoplasia and vision loss has been reported in the literature [4,5]. Gharai et al. evaluated MRNF with OCT and reported that peripapillary MRNF involving the macula can cause foveal ectopia, deprivation amblyopia and vision loss [6]. They suggested that foveal position can be detected only by OCT.

In our case, OCT showed normal average RNFL thickness with thinning in superior quadrant and abnormal foveal contour in the right eye. Peripapillary MRNF extending along superior vascular arcade can explain the decreased thickness of superior RNFL.

In addition, our patient has had epilepsy and chronic renal failure secondary to vesicoureteral reflex, but this association has never been reported in the literature.

In this case, low vision in the right eye with MRNF may have been due to foveal abnormality, anisometropic amblyopia, or optic disk hypoplasia.

To the best of our knowledge, this is the first report of the OCT findings including peripapillary RNFL in a patient with MRNF. Although MRNF not cause changes in average RNFL thickness, may cause to serious vision loss by abnormal foveal morphology and anisometropic myopia.

Competing interests

The authors declare that they have no competing interests.

References