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Annals of Case Reports

Totsuka S, et al. Ann Case Rep: ACRT-185.

Letter to the Editor

DOI: 10.29011/2574-7754/100085

Investigated the Thickness of the Neural Layer in the Macula of the Retina in Individuals with Amblyopia

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Citation: Totsuka S, Goseki T, Ishikawa H, Shoji N (2018) Investigated the Thickness of the Neural Layer in the Macula of the Retina in Individuals with Amblyopia. Ann Case Rep: ACRT-185. DOI: 10.29011/2574-7754/100085

Received Date: 01 June, 2018; **Accepted Date:** 06 June, 2018; **Published Date:** 14 June, 2018

Letter

As Amblyopia is often a diagnosis of exclusion [1]. Structural lesions in eyes with amblyopia generally cannot be observed through eye examinations [2]. However, structural changes in the retinas of amblyopic eyes have recently been observed using high-precision optical coherence tomography (OCT) [3]. This study investigated the thickness of the neural layer in the macula of the retina in healthy individuals, and in individuals with anisotropic amblyopia or strabismus amblyopia, and then visualized abnormalities using a significance map.

The study included 26 healthy individuals, 39 individuals with anisometropic amblyopia, and 39 individuals with strabismic amblyopia (mean age: 6.1 years, range: 3-8 years; visual acuity=logMAR score of 0.1 or lower). Refractive error ranged from +2D to +10D. The thickness of the myelinated retinal nerve fiber layer (mRNFL), the ganglion cell layer + inner plexiform layer (GCL+), and the ganglion cell layer + inner plexiform layer + myelinated retinal nerve fiber layer (GCL++) were measured using optical coherence tomography (3D OCT 2000 Series: TOPCON, Japan). Abnormalities were defined as being found in less than 5% of entries in the normal database, and the total thickness values were used to compare the nasal retina and temporal retina.

There were no significant differences in mRNFL, GCL+, and GCL++ thickness between healthy eyes and eyes affected by strabismic/anisometropic amblyopia. Conversely, the total number of abnormalities in mRNFL thickness on the nasal and temporal sides of the retinas of healthy individuals, those with individuals of anisometropic amblyopia, and those with individuals of strabismic amblyopia were 6.0±5.2/10.7±6.2，10.5±8.2/13.5±7.1，and 13.8±10.3/17.8±10.8, respectively; there were significantly more abnormalities on the temporal side of the retina ($p<0.05$) (Figure 1). There were no significant differences in GCL+ or GCL++ thickness.

There was no difference between the mRNFL in healthy eyes and those with strabismic/anisometropic amblyopia, but there was a significant difference in mRNFL thickness between the nasal and temporal sides of the retina. This difference was more pronounced in eyes with strabismic amblyopia.

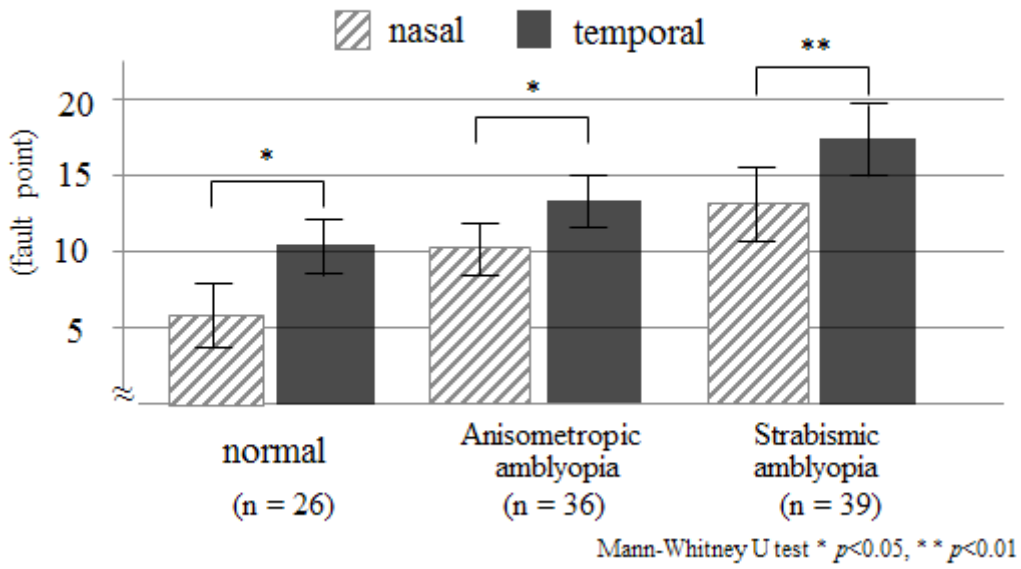

Figure 1: Fault point of mRNFL.

There was a significant difference in mRNFL thickness between the nasal and temporal sides of the retina. This difference was more pronounced in eyes with strabismic amblyopia.

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