**Spectral domain optical coherence tomography (OCT) findings in megalopapilla**

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**Introduction:** Megalopapilla is a congenitally large optic disc [1] that may mimic glaucomatous optic neuropathy but with normal, visual function in most patients. Scattered reports describe optic disc imaging in these patients. However, the nerve fiber layer characteristics using spectral domain OCT (sd OCT) or changes in the macular ganglion cell complex (mGCC) have not been described.

**Objective:** To describe the sd OCT findings of the optic disc and mGCC thickness in two patients with megalopapilla.

**Material and methods:** Two patients with megalopapilla representing a spectrum of changes seen in the condition underwent an ophthalmological exam, glaucoma assessment that included automated perimetry, disc diameter measurement, and sd OCT (Optovue, CA).

**Results:** Case 1- A 38 year old with unilateral megalopapilla. She had mild myopia with 20/20 corrected acuity OU, IOP of 13-15 mmHg OU and a normal anterior segment examination. The right optic disc was large in size and had a vertical CD ratio of 0.8, anomalous retinal vessels and mild peripapillary atrophy typical of type I megalopapilla. The left optic nerve was normal with CD ratio of 0.3 and uniform neuroretinal rim. Automated perimetry showed full visual fields OU. By sd OCT the disc areas were 7.4 mm² OD versus 2.6 mm² OS; an average RNFL thickness of 84.8 µ OD and 102.1 µ OS. Most RNFL thickness sectors were abnormal OD while all were normal OS. mGCC analysis was normal OU. Case 2- A 18 year with bilateral megalopapilla. His visual acuity, intraocular pressures (17 mmHg OU), anterior segment examination were normal. The optic discs were large in size by biomicroscopy with vertical CD ratios of 0.8. Automated perimetry was within normal limits OU. sd OCT revealed disc areas of 4.7 mm² OD and 4.9 mm² OS, and average RNFL thickness of 112.9 µ OD and 102.1 µ OS. OD had sectoral thinning in one segment, and borderline thinning compared to normal values in three segments while OS showed two adjacent thin and three borderline segments. mGCC analysis was within normal range OU.

**Discussion:** The three eyes with megalopapilla being reported had optic discs areas larger than 4.5 mm² (range 4.7 to 7.4) which is consistent with the definition of megalopapilla in the literature [2]. The sd OCT findings in these cases suggest that RNFL thickness measurements by sd OCT in megalopapilla are variable and appear dependent on disc area. RNFL in these eyes becomes more evident as the disc size gets larger as noted in patient 1. This observation is likely secondary to RNFL spreading over a larger peripapillary area. However, the mGCC analysis was normal in all eyes with megalopapilla.

**Conclusions:** RNFL measurements by sd OCT are variable and may be dependent on disc size. Abnormal average RNFL thickness can be seen in the extreme cases but the mGCC analysis appears normal and may be possibly to distinguish RNFL thinning in macrodiscs from glaucomatous nerves by OCT.