Effect of adenotonsillectomy on choroidal thickness measurements and ocular blood flow in pediatric obstructive sleep apnea syndrome patients

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Conclusion
Our study has not shown any effect of OSAS on choroidal thickness and ocular blood flow levels. One possible reason for this is that the study group included pediatric patients; chronic hypoxia exposure time is shorter in the pediatric population than in adult patients.

Introduction
Obstructive sleep apnea syndrome (OSAS) is a common medical condition in pediatric patients. Many ophthalmological disorders are associated with OSAS. Little is known about the effects of OSAS on the choroid and vascularized tissue. Our aim is to investigate the impact of adenotonsillectomy on ocular blood flow and choroidal thickness in pediatric patients with OSAS.

Methods
The study included 31 pediatric patients with OSAS. All patients were performed adenotonsillectomy. The peak systolic velocity (PSV), end-diastolic velocity (EDV) and resistance index (RI) were measured in the ophthalmic artery (OA), central retinal artery (CRA) using color doppler sonography. All of the subject underwent choroidal thickness measurement. Pediatric sleep questionnaire (PSQ) applied to whole patients. The measurement were made before and after adenotonsillectomy within 6 months.

Results
There was no significant difference PSV, EDV and RI of ophthalmic artery and central retinal artery between preoperative and postoperative measurements (p>0.05). Pediatric sleep questionnaire results were significantly lower postoperative period than preoperative period (p<0.01).

Discussion:
OSAS is a common disease in childhood, and may result in complications if it is not properly treated. A recent study found significantly thinner choroidal thicknesses in the 1,000 μm and 1,500 μm nasal choroidal measurements in patients with OSAS due to adenotonsillar hypertrophy. In our study no significant difference was found between choroidal thicknesses. One possible reason for this is that 6 months may not be improve the choroidal thickness. The another study no statistically difference was found RI of ophthalmic artery and central retinal artery measurement between pediatric patients with OSAS and controls. These results are similar ours. The most studies which were performed with adult patient with OSAS showed that there was a strong correlation between OSAS and ocular blood flow. The reason for this incoherence may be that chronic hypoxia exposure time is shorter in the pediatric population than in adult patients.