



## LETTER TO THE EDITOR

## Optical coherence tomography (OCT) findings in obstructive sleep apnea



We have read the article by Mentek et al., however, we believe some discussion would be of benefit [1]. The authors describe vascular disorders of the retina and optic nerve in patients affected by obstructive sleep apnea (OSA). When reviewing results of eye tests in this disease it is necessary to mention that OSA itself presents alterations in particular ophthalmic examinations.

Most current literature confirms the usefulness of optical coherence tomography (OCT) in neurodegenerative diseases, and in OSA [2]. The authors present that the analyzed studies agree that OSA patients with no signs of optic neuropathy, notably glaucoma, often demonstrate a significant decrease in retinal nerve fibre layer in OCT.

Furthermore, individuals affected by OSA manifest OCT changes of the macular region as well. In the study by Casas et al. patients with severe OSA had significantly lower temporal inner macular thickness than those with mild-moderate OSA [3]. Xin and associates revealed that not only macular thickness, but also subfoveal choroidal thickness is lower in OSA patients than in control [4]. Although not excluding patients with hypertension could be a confounding factor of the aforementioned study, these differences were confirmed by Bahyan et al. in patients without systemic diseases [5]. Long-term structural changes of the retina and choroid in patients with OSA is presumably related to intermittent hypoxia influencing retinal and choroidal blood supply. Interestingly, OCT-angiography, which is a new and powerful imaging modality, presents decreased vessel densities in the peripapillary and parafoveal areas in OSA patients [6]. Patients affected by OSA have also reduced retinal sensitivity measured in standard automated perimetry [7].

When pointing out future directions retinal oximetry ought to be mentioned. Retinal oximetry is a quick non-invasive eye fundus imaging modality that evaluates saturation of retinal arterioles and venules based on spectrophotometry. It has already confirmed its value in diabetic retinopathy, central retinal vein occlusion, retinitis pigmentosa, glaucoma and Alzheimer's disease [8]. Current research is focused on neurodegenerative diseases, and retinal oximetry cameras are currently available commercially.

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**Conflicts of interest**

No conflicting relationship exists for any author.

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