



If glaucoma progresses despite seemingly controlled IOP, then it may be worthwhile investigating and treating obstructive sleep apnoea syndrome (OSAS)

The Science behind the Tip

The exact physiopathology of glaucoma is still poorly understood, but the role of vascular dysregulation has become increasingly recognised. OSAS, a common yet underdiagnosed condition, has been associated with autonomic dysfunction, transient hypoxia, decreased ocular perfusion pressure, increased vascular resistance, oxydative stress and changes in IOP¹. Although a large prospective study showed no relationship between OSAS and glaucoma², other studies have reported an increased prevalence of OSAS in glaucomatous patients^{3,5}. Thinning of the retinal nerve fibre layer and a reduction in the visual field indices has been demonstrated in individuals with OSAS^{1,3}.

In the setting of progressing glaucoma with seemingly controlled office-measured IOP and especially with symptoms and signs suggestive of OSAS, it seems reasonable to do polysomnography or, more affordable, ventilatory polygraphy. Although the potential clinical benefits of OSAS treatment on glaucoma and retinal vein occlusion remain unresolved, continuous positive airway pressure therapy merits consideration and has the additional benefit of decreasing cardiovascular mortality and increasing diurnal vigilance, thus reducing road accidents.

References

1. Pérez-Rico C, Guitiérrez-Diaz E, Mencia-Gutiérrez E et al. Obstructive sleep apnoea-hypopnoea syndrome (OSAHS) and glaucomatous optic neuropathy. *Graefes Arch Clin Exp Ophthalmol*, 2014 May 25 (Epub ahead of print).
2. Aptel F, Chiquet C, Tamisier R et al. Association between glaucoma and sleep apnoea in a large French multicentre prospective cohort. *Sleep Med*, 2014;15(5):576-81
3. Xin C, Zhang W, Wang L et al. Changes of visual field and optic nerve fibre layer in patients with OSAS. *Sleep Breath* 2014 May 8 (Epub ahead of print).
4. Bilgin G. Normal-tension glaucoma and obstructive sleep apnoea syndrome: a prospective study. *BMC Ophthalmol* 2014;14:27.
5. Lin CC, Hu CC, Ho JD et al. Obstructive sleep apnoea and increased risk of glaucoma: a population-based matched-cohort study. *Ophthalmology*, 2013;120(8):1559-64.

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