



Exfoliation (pseudoexfoliation) syndrome (with or without glaucoma) is associated with clinically significant non-vascular systemic diseases

The Science behind the Tip

The association of systemic vascular dysfunction and vascular diseases with exfoliation syndrome have been extensively studied in the last decades. Recently in the ***Utah project on exfoliation syndrome***, a large database study, an increased risk of a diagnosis of exfoliation syndrome was found in people with a series of systemic non-vascular diseases such as obstructive sleep apnea, pelvic organ prolapse and indirect inguinal hernia.

In addition, it was reported that exfoliative syndrome subjects had an increased risk of chronic obstructive pulmonary disease and atrial fibrillation. These associations are possibly explained by the altered expression of LOXL1, a key cross-linking enzyme in elastic fiber formation and remodeling which explains elastic fibres related dysfunction both in the eye and the whole body. Therefore, active enquiry about systemic non-vascular conditions and obstructive apnea related symptoms are proposed in the routine clinical glaucoma practice when patients with exfoliation syndrome or exfoliative glaucoma are investigated.

References

- 1) Wirostko BM, Curtin K, Ritch R, et al. Risk for exfoliation syndrome in women with pelvic organ prolapse: a Utah Project on Exfoliation Syndrome (UPEXS) Study. *JAMA Ophthalmol* 2016;134:1255-1262.
- 2) Taylor SC, Bernhisel AA, Curtin K, et al. Association between chronic obstructive pulmonary disease and exfoliation syndrome: the Utah Project on Exfoliation Syndrome. *Ophthalmol Glaucoma* 2019;2:3-10.
- 3) Besch BM, Curtin K, Ritch R, et al. Association of exfoliation syndrome with risk of indirect inguinal hernia: the Utah Project on Exfoliation Syndrome. *JAMA Ophthalmol*. 2018;136:1368-1374.
- 4) Shumway C, Curtin K, Taylor S, et al. Association between obstructive sleep apnea and exfoliation syndrome: the Utah Project on Exfoliation Syndrome. *Ophthalmol Glaucoma* 2021;4:260-267.
- 5) Wirostko BM, Curtin K, Taylor SC, et al. Risk of arterial fibrillation is increased in patients with exfoliation syndrome: the Utah project on exfoliation syndrome (UPEXS). *Acta Ophthalmol* 2021 Sep 21. doi: 10.1111/aos.15017. Online ahead of print.

Contributor: Gabor Hollo for the Exfoliation SIG
