



When glaucoma is not glaucoma

The Science behind the Tip

An increased excavation of the optic nerve head is usually associated to glaucoma, but other optic neuropathies may also display an increased excavation thereby resembling glaucoma.

While hereditary, vascular, infectious, or nutritional (including methanol-induced) causes may be suspected by a thorough medical history, compressive opticopathies in addition can have distinctive clinical features: age below 50, visual acuity below 6/12, pale optic nerve rim, vertical axis of visual field defects, dyschromatopsia or sudden onset of symptoms, and should prompt neuroradiological imaging^{1,2}. These features carry high specificities, however sensitivities are quite low³. OCT can aid in differentiation between glaucomatous versus compressive opticopathy showing more pronounced temporal and nasal reduction of macular and circumpapillary parameters in compressive opticopathies. Still, in ambiguous cases clinical alertness should be high^{4,5}.

References

- 1) Piette SD, Sergott RC. Pathological optic-disc cupping. *Curr Opin Ophthalmol* 2006;17(1):1–6 doi: 10.1097/01.icu.0000193072.17122.f3
- 2) Dias DT, Ushida M, Battistella R, et al. Neurophthalmological conditions mimicking glaucomatous optic neuropathy: analysis of the most common causes of misdiagnosis. *BMC Ophthalmology* 2017;17(1):2 doi: 10.1186/s12886-016-0395-x
- 3) Greenfield DS, Siatkowski RM, Glaser JS, et al. The Cupped Disc: Who Needs Neuroimaging? *Ophthalmology* 1998;105(10):1866–1874 doi: 10.1016/S0161-6420(98)91031-4
- 4) Lee EJ, Yang HK, Kim TW, et al. Comparison of the Pattern of Retinal Ganglion Cell Damage Between Patients With Compressive and Glaucomatous Optic Neuropathies. *Invest Ophthalmol Vis Sci* 2015;56(12):7012-20. doi: 10.1167/iops.15-17909.
- 5) Laowanapiban P, Sathianvichitr K, Chirapapaisan N. Structural and functional differentiation between compressive and glaucomatous optic neuropathy. *Sci Rep.* 2022;12(1):6795. doi:10.1038/s41598-022-10269-x