

Editorial





Discriminators for optic neuropathy and maculopathy

Editorial

Optic neuropathies and maculopathies are more common causes of visual loss. However, as optic neuropathies and maculopathies can share some common characteristics, the overlapping of the features of these pathologies occur sometimes and this can cause the difficulty in diagnosis and even the important challenges in the management of the underlying exact pathology. The early diagnosis of some neurophthalmological emergencies such as arteritic anterior ischemic optic neuropathy (AION) and optic neuritis is critical. There are several discriminator aspects providing to distinguish between optic neuropathies and maculopathies. ¹⁻⁹ The comparison of all aspects and discriminators of optic neuropathy and maculopathy was given in Table 1.To apply the highlights and discriminators given in table will facilitate to distinguish the optic nerve disease from macular diseases.

Volume 7 Issue 7 - 2017

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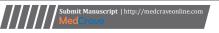
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Received: December 08, 2017 | Published: December 11, 2017

Table I The comparison of all aspects of optic neuropathy and maculopathy 1-9

Feature	Optic nerve disease	Macular disease
Onset	Variable (often acute, subacute)	Variable
Course	Variable (Progressive, transient, or stable)	Mostly slower progression
Visual experience	Shading, clouding, graying, darkening	Central blurring, glaring, photophobia, metamorphopsia
Ocular pain	Maybe occur in eye movements	No usual
Refractive change	No usual	Maybe develop hyperopic shift
VA loss	Variable reduction, even to NLP level	Significantly reduction but not to NLP
Pupils	RAPD in case of unilateral or asymmetrical ON disease	No RAPD, if severe unilateral retinal involvement is absent
CS and brightness	Significantly reduced	Mildly reduced
Color vision	Significantly reduced	Mildly reduced
VF defect	Variable (Central, centrocecal, altitudinal, blind spot enlargement)	Central scotoma
Amsler Grid	Variable scotoma	Central scotoma, metamorphopsia
Pulfrich phenomena	Novaluable	Central macular disease (hole, cyst)
PSR time	Normal (under 30 sn)	Prolonged recovery time (over 90sn)
VER	Abnormal (Large delayed latency and decreased amplitude)	Normal or mildly abnormal (small latency delay)
ERG	Normal	Full field ERG is often normal while multifocal ERG is usually abnormal
FFA	Late phase disc leakage in optic disc edema, peripapillary filling delay or ischemia in AION	Dependent on cause of maculopathy
FAF	Hyperautoflorescence (ON drusen, astrocytic hamartoma)	Variable depend on macular disease
SD-OCT	Increasing or decreasing in RNFL thickness (edema or atrophy) Increasing in peripapillary RNFL thickness (myelinated nerve fiber or cotton wool spot) Decreasing macular GCC (optic neuritis)	Vitreo-retinal interface abnormalities Various intra- or sub-retinal/sub-RPE pathologies in macular region Altering macular retina thickness Altering macular choroid thickness Decreasing macular GCC (antimalarial maculopathy)

VA, visual acuity; NLP, no light perception; RAPD, relative afferent pupillary defect; CS, contrast sensitivity; VF, visual field; PSR, photo-stress recovery; ON, optic nerve; ERG, electroretinogram; FFA, fundus fluorescein angiography; FAF, fundus auto-fluorescence; AION, anterior ischemic optic neuropathy; SD-OCT, spectral domain-optical coherence tomography; RNFL, retinal nerve fiber layer; GCC, ganglion cell complex; VER, visual evoked response; RPE, retina pigment epithelium





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Acknowledgments

None.

Conflicts of interest

The author declares that there is no conflict of interest regarding the publication of this paper.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

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