

Ischemic maculopathy: an occult cause of an irreversible visual loss

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Editorial

In this editorial, I aimed to summarize the ischemic maculopathy (IM) or macular ischemia as a cause of irreversible visual loss because, to date, there is no successful treatment method for this fundus angiographic entity. Ischaemic maculopathy is a vision-threatening disorder because it does not respond to treatment and it causes severe irreversible visual loss. In IM, ischemia can occur in both the retina excluding macula and the macula. The microvascular changes including the breakdown of capillary walls and/or enlargement or blockage of capillaries located near the fovea and the loss of capillaries in the macula are responsible for maculopathy. IM can occur with or without macular edema. It causes painless and gradually severe visual loss in color and sharp vision.¹⁻⁸

Ischemic maculopathy is characterized by as enlarged or irregular FAZ (foveal avascular zone), the loss of perfusion to the capillary network surrounding the FAZ, the presence of FAZ abnormalities, capillary nonperfusion areas in the macula and the presence of microaneurysms at the border of FAZ due to perifoveal capillary occlusion in fundus angiography. IM is not caused by increased by vascular leakage; it is induced by microvascular blockage and enlargement, with capillary loss and adjacent edema.¹⁻⁸ The detection of IM is extremely difficult without the use of fundus angiography. If the visual loss is not explained ophthalmoscopically or optical coherence tomographically, especially in a diabetic patient, IM is usually responsible for unexplained visual loss, even if the clinical stage of the disease is early or mild.¹⁻⁸ Ischaemic maculopathy can occur in non-proliferative or proliferative diabetic retinopathy (DR),

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retinal arterial or venous occlusion, retinal arteritis, retinopathy of prematurity (ROP), ocular ischemic syndrome, talc retinopathy, proliferative or non-proliferative diabetic retinopathy, pars planitis, Sarcoidosis, cytomegalovirus retinitis caused by AIDS, familial exudative vitreoretinopathy, Eales' disease involving the macula.⁵⁻²⁰ Additionally, it has been reported that it can be developed following intravitreal antivascular endothelial growth factor injection.^{21,22} However, it can also develop in the idiopathic form.²³ The common causes of IM have been given in Table 1. The area of FAZ obtained optical coherence tomography angiography and fluorescein angiography ranges between 0.3-0.5 mm in healthy subjects. The measurement of FAZ area and the evaluation of FAZ integrity are very important because the enlargement of FAZ precedes the occurrence of microaneurysms and the diabetic retinopathy in this stage can be reversed.^{24,25} Ischemic maculopathy is an ophthalmoscopically occult maculopathy if there is no associated with cotton wool spots. Thus, the evaluation of FAZ in the cases with clinically and ophthalmoscopically unexplained visual loss is critical for both early treatment and prophylaxis.

Table 1 The common causes of ischemic maculopathy or macular ischemia⁵⁻²³

The causes of ischemic maculopathy or macular ischemia

Nonproliferative or proliferative diabetic retinopathy
Retinal arterial or venous occlusion/obstruction
Embolitic maculopathy (Talc retinopathy)
Ocular ischemic syndrome
Sarcoidosis
Pars planitis
Retinopathy of prematurity
Familial exudative vitreoretinopathy
Eales' disease involving the macula
Cytomegalovirus Retinitis in Patients with AIDS
Intravitreal antivascular endothelial growth factor injection
Retinal vasculitis (especially arteritis)
Idiopathic

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Conflicts of interest

The authors declare there are no conflicts of interest.

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