



Figure 6-23 Ophthalmic artery occlusion. Fundus photograph montage of the left eye of a 44-year-old woman after ipsilateral injection of synthetic calcium hydroxyapatite gel into her left lateral lower eyelid for cosmetic purposes. Sudden loss of vision ensued to the level of no light perception. An ophthalmic artery occlusion occurred from presumed retrograde flow of the cosmetic filler into the ophthalmic artery by way of anastomotic arteries in the orbit bridging the internal and external carotid circulations. The white filler material is visible in the retinal circulation and choroidal blood vessels. (Courtesy of Kathryn Sun, MD, PhD; Thomas F. Essman, MD; and Brenda Schoenauer, CDOS.)

Paracentral Acute Middle Maculopathy

Paracentral acute middle maculopathy (PAMM) refers to macular lesions with changes in the inner nuclear layer on SD-OCT. The primary etiology in PAMM may be ischemia of the deep capillary system, which is responsible for blood supply to the middle retina.

The typical presentation is acute onset of diminished central visual acuity (although Snellen measurement of 20/20 is possible) or paracentral scotoma. Ophthalmoscopically, the lesions may appear only as subtle parafoveal gray-white spots or wedges. Compared with cotton-wool spots, the retinal whitening associated with PAMM lesions is more distinct, duller gray-white, less opaque, and deeper in the retina; also, it is not distributed along the NFL. However, these lesions are evanescent and may resolve before clinical examination takes place. In such cases, the characteristic hyperreflective bands on SD-OCT should still be detectable (Fig 6-24). Over time, PAMM lesions typically resolve with thinning of the inner nuclear layer, resulting in persistent paracentral scotomata.

PAMM is primarily a disease of retinal ischemia and often seen in association with retinal vascular occlusion. Evaluation in suspected cases includes imaging and systemic workup for cardiovascular risk factors and sickle cell disease.

Chu S, Nesper PL, Soetikno BT, Bakri SJ, Fawzi AA. Projection-resolved OCT angiography of microvascular changes in paracentral acute middle maculopathy and acute macular neuroretinopathy. *Invest Ophthalmol Vis Sci*. 2018;59(7):2913–2922.

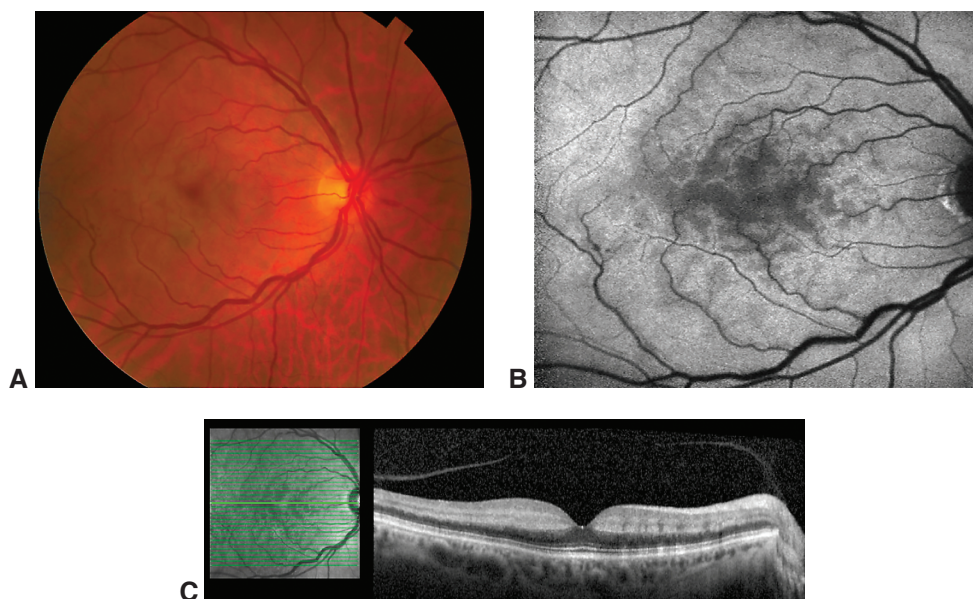


Figure 6-24 Paracentral acute middle maculopathy (PAMM). A 57-year-old woman presented with acute visual defects that she described as “lacy patterns” in her vision. **A**, Fundus photograph shows ill-defined grayish lesions in the macula, corresponding to intraretinal opacification. **B**, Fundus autofluorescence highlights the blocking defect of the perivenular retinal opacification. **C**, SD-OCT shows hyperreflectivity of the inner nuclear layer, more patchy nasally and more continuous temporally. These clinical and imaging findings are consistent with PAMM. (Courtesy of Amani Fawzi, MD.)

Arterial Macroaneurysms

Retinal arterial macroaneurysms are acquired ectasias of the first 3 orders of retinal arterioles. Large macroaneurysms can actually traverse the full thickness of the retina. Vision loss may occur from embolic or thrombotic occlusion of the end arteriole (*white infarct*) or from hemorrhage in any retinal layer. Other retinal findings may include capillary telangiectasia and remodeling, as well as retinal edema and exudate involving the macula (Fig 6-25). Often, there are multiple arterial macroaneurysms, although only 10% of cases are bilateral. Arterial macroaneurysms are associated with systemic arterial hypertension in approximately two-thirds of cases and may occur in the area of previous vascular occlusions. Systemic blood pressure should be measured at the time of diagnosis, and the patient should be referred for further evaluation.

Typically, the macroaneurysm closes and scleroses spontaneously, with accompanying resorption of related hemorrhage. Reopening of the macroaneurysm and rebleeding are rare. Thus, initial management is usually observation. Laser photocoagulation treatment may be considered if increasing edema in the macula threatens central vision. In most instances, closure can be achieved with moderate-intensity laser treatment of the retina, performed immediately adjacent to the macroaneurysm, using 2–3 rows of large-spot-size (200–500 μm) applications. Some specialists prefer direct treatment. Caution