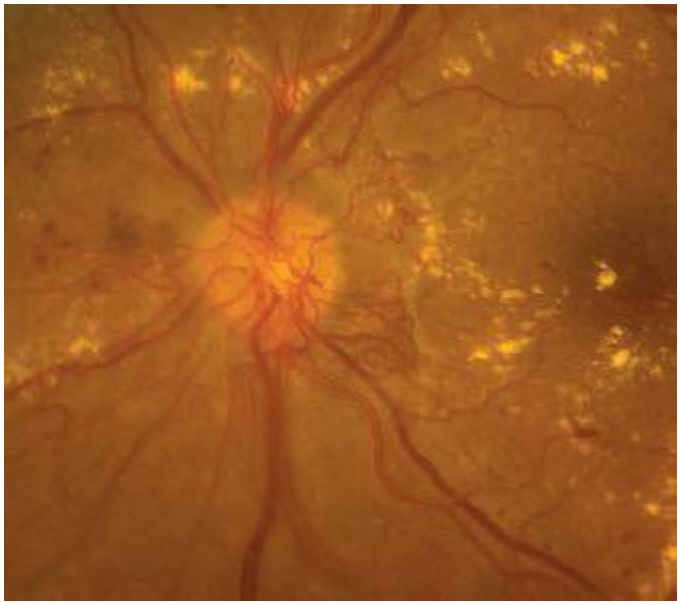

FIGURE 40e-6 Optic disc neovascularization in a patient with severe proliferative diabetic retinopathy. Multiple hard exudates are also present.

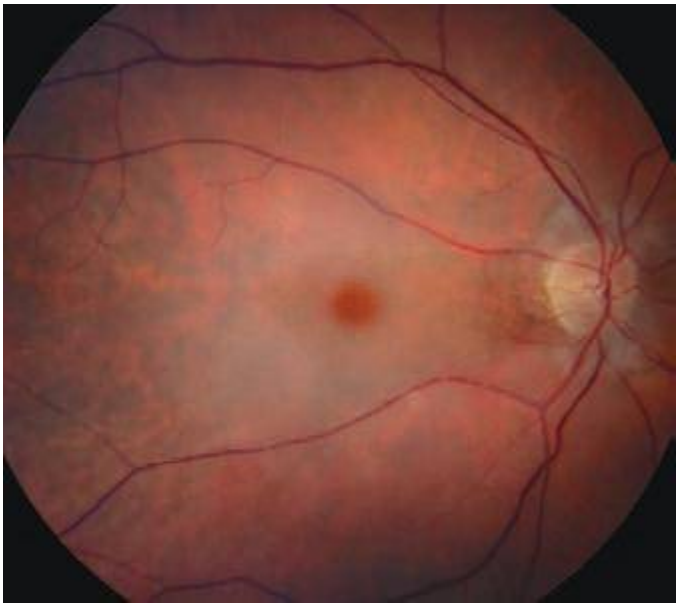

FIGURE 40e-7 Cherry red spot at the macula and cloudy swelling of the macula in a patient with central retinal artery occlusion due to embolus originating from a carotid artery atheromatous plaque.

fragile and have a high risk for hemorrhaging, often causing visual loss. Diseases associated with retinal neovascularization include conditions that cause severe retinal microvasculopathy, especially diabetic and sickle cell retinopathies (Table 40e-3), intraocular tumors, intraocular inflammation (sarcoidosis, chronic uveitis), and chronic retinal detachment.

RETINAL EMBOLI

Common sources of retinal emboli include carotid artery atheromatous plaque, cardiac valve and septal abnormalities, cardiac arrhythmias, atrial myxoma, bacterial endocarditis, septicemia, fungemia, and intravenous drug abuse.

Platelet emboli are yellowish in appearance and conform to the shape of the blood vessel. They usually originate from an atheromatous plaque within the carotid artery and can cause transient loss of vision (amaurosis fugax). Cholesterol emboli, otherwise termed Hollenhorst plaques, are yellow crystalline deposits that are commonly found at the bifurcations of the retinal arteries and may be associated with amaurosis fugax. Calcific emboli have a pearly white appearance, are larger than the platelet and cholesterol emboli, and tend to lodge in the larger retinal arteries in or around the optic disc. Calcific emboli often result in retinal arteriolar occlusion. Septic emboli can cause white-centered retinal hemorrhages (Roth spots), retinal microabscesses, and endogenous endophthalmitis. Fat embolism and amniotic fluid embolism are characterized by multiple small vessel occlusions, typically causing cotton-wool spots and few hemorrhages (Purtscher's-like retinopathy). Talc embolism occurs with intravenous drug abuse and is characterized by multiple refractile deposits within the small retinal vessels. Any severe form of retinal artery embolism may result in retinal ischemia and its sequelae, including retinal neovascularization.

CHERRY RED SPOT AT THE MACULA

Cherry red spot at the macula is the term used to describe the dark red appearance of the central foveal area in comparison to the surrounding macular region (Fig. 40e-7). This appearance is most commonly due to a relative loss of transparency of the parafoveal retina resulting from ischemic cloudy swelling or storage of macromolecules within the ganglion cell layer. Diseases associated with a cherry red spot at the macula include central retinal artery occlusion, sphingolipidoses, and mucolipidoses.

RETINAL CRYSTAL DEPOSITION

Retinal crystals appear as fine, refractile, yellow-white deposits. Associated conditions include infantile cystinosis, primary hyperoxaluria, secondary oxalosis, Sjögren-Larson syndrome, intravenous drug abuse (talc retinopathy), and drugs such as tamoxifen, canthaxanthin, nitrofurantoin, methoxyflurane, and ethylene glycol. Crystals may also be seen in primary retinal diseases such as juxtafoveal telangiectasia, gyrate atrophy, and Bietti's crystalline degeneration. Old microemboli may mimic retinal crystals.

RETINAL VASCULAR SHEATHING

Vascular sheathing appears as a yellow-white cuff surrounding a retinal artery or vein (Fig. 40e-8). Diseases associated with retinal vascular sheathing include sarcoidosis, tuberculosis, toxoplasmosis, syphilis, HIV, retinitis (cytomegalovirus, herpes zoster, and herpes simplex),

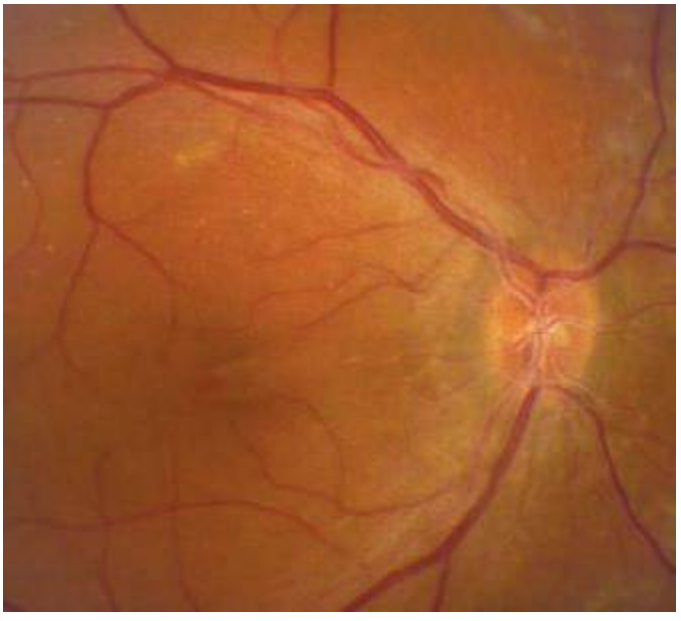

FIGURE 40e-8 Vascular sheathing over the optic disc in a patient with neurosarcoidosis.