Choroidal involvement

Disseminated choroiditis is the most common presentation and is characterized by multiple deep, discrete, yellowish lesions between 0.5 mm and 3.0 mm in diameter and numbering from 5 to several hundred (Fig 10-11). These lesions, or tubercles, are located predominantly in the posterior pole and may be accompanied by disc edema, nerve fiber layer hemorrhages, and varying degrees of vitritis and granulomatous anterior uveitis. Alternatively, they may present as a single, focal, large, elevated choroidal mass (tuberculoma) that varies in size from 4 mm to 14 mm and may be accompanied by neurosensory retinal detachment and macular star formation (Fig 10-12). Choroidal tubercles may be one of the earliest signs of disseminated disease and are more commonly observed among immunocompromised hosts. On FA, active choroidal lesions display early hyperfluorescence with late leakage, and cicatricial lesions show early blocked fluorescence with late staining. ICG angiography reveals early- and late-stage hypofluorescence corresponding to the choroidal lesions, which are frequently more numerous than those seen on FA or clinical examination (see Fig 10-12). Other manifestations include multifocal choroiditis, frequently with a serpiginoid pattern (multifocal serpiginoid choroiditis, also called serpiginous-like choroiditis; Fig 10-13). In patients with HIV/AIDS, tuberculous choroiditis may progress despite effective antituberculous therapy.

![Figure 10-11 Tubercular multifocal choroiditis with serous retinal detachment. Fundus photography shows multiple pockets of subretinal fluid overlying choroidal tubercles (top left). Fluorescein angiography reveals multifocal leakage (top middle), and indocyanine green angiography delineates hypocyanescence (top right), presumably corresponding to areas of choroidal inflammatory infiltration. Choroidal nodules (tubercles) are revealed by spectral-domain optical coherence tomography (bottom). (Courtesy of Daniel V. Vasconcelos-Santos, MD, PhD.)](image)
**Retinal involvement**

Retinal involvement in TB is usually secondary to extension of the choroidal disease or an immunologic response to mycobacteria and should be differentiated from Eales disease, a peripheral retinal perivasculitis that presents in otherwise healthy young men aged 20–40 years with recurrent, unilateral retinal and vitreous hemorrhage and subsequent involvement of the fellow eye. The disease may be associated, at least in part, to some degree of tuberculin hypersensitivity. Interestingly, a few studies employing PCR-based assays have detected *M. tuberculosis* DNA from aqueous, vitreous, and epiretinal membranes of some patients with Eales disease. Periphlebitis is commonly observed in this setting, and may be accompanied by venous occlusion, peripheral nonperfusion, neovascularization (Fig 10-14), and eventual development of tractional retinal detachment in some cases (see also BCSC Section 12, *Retina and Vitreous*, for additional discussion of Eales disease).