

Case Study 13

Central Retinal Artery Embolus

CL is a 70-year-old man who presented with the history of marked reduction of vision in his left eye several days ago. Examination found vision 20/30 OD and OS of hand motions at 1 m. He had a 3+ afferent papillary defect in this eye. Slit-lamp examination was normal, and fundus examination found some narrowing of the retinal arterioles and a faint reddish appearance to the central macula. It was assumed that a vascular event had occurred and a workup was done including erythrocyte sedimentation rate, C-reactive protein, complete blood count (CBC) with platelet level, antiphospholipid antibodies, plasma homocysteine, and a carotid duplex scan. These tests were unremarkable except for 50 % stenosis of both carotid arteries.

He was referred for orbital color Doppler testing. The grayscale B-scan part of the study showed a small high reflective signal in the optic nerve posterior to the lamina cribrosa in the area of the central retinal artery (Fig. 1). This was consistent with embolic material within the artery most likely originating from an atheromatous plaque in the carotid artery, but a cardiac source could not be ruled out, so an echocardiogram was performed and interpreted as normal. A carotid angiogram confirmed an ulcerated atheroma from which the embolus had most likely come. The patient was given the option of medical antiplatelet therapy with aspirin or a surgical endarterectomy.

The sensitivity of echography in detecting intraocular calcification with optic nerve drusen is equally important in the evaluation of leukocoria to

eliminate retinoblastoma. The detection of a mass in a small child has ominous implications regarding morbidity and mortality. There is a long differential diagnosis for leukocoria, but the presence of calcium in a mass found within a child's eye is almost pathognomonic for retinoblastoma. However, according to Bullock et al. [8] it is absent in about 10 % of retinoblastomas, so any intraocular mass in a child must be viewed with suspicion. CT scans accurately detect calcium when it is present in a moderate amount but can miss it when only small scattered deposits are present within the tumor. Wilson states, "more than one imaging modality should be used in the evaluation of suspected retinoblastoma, as calcification may be absent on the computed tomography but present on B-mode ultrasound" [9]. MRI scans are not able to detect calcium in these tumors.

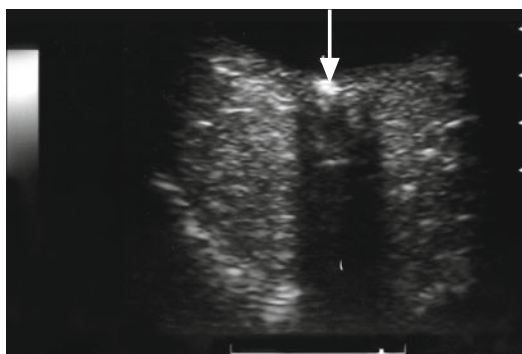


FIG. 1 B-scan of embolic material in central retinal artery (arrow) (Photo courtesy of Dr. Robert Sergott)