Case Study 14
Retinoblastoma with Fine Calcification

TM is a 2-year-old child who was noted by his parents to have a "wandering" left eye that worsened over several months. They consulted with an ophthalmologist who documented an esotropia of 30 prism diopters and found leukocoria on testing the left red reflex. She noted a whitish pink nasal intraocular mass on fundus examination. She suspected a retinoblastoma and obtained a CT scan for confirmation. No calcium was detected on the scan (Fig. 1), so she referred the child for echography.

B-scan demonstrated a subretinal mass in the nasal fundus that measured 4.6 mm thick by 8 mm by 7 mm in basal dimensions (Fig. 2). Multiple tiny high reflective signals were seen within the lesion consistent with fine calcification. The diagnosis of retinoblastoma was established, and the child was referred to an oncologist for further workup and treatment.

Some pediatric ophthalmologists are now referring children suspected of having retinoblastoma directly for echography and bypassing CT. The optic nerve and brain are then imaged by MRI to rule out intracranial extension of the lesion [10].

Echography is an excellent screening tool in the office for orbital problems such as proptosis. The most common cause of both bilateral and unilateral proptosis is Graves' disease, and echography is a very sensitive and specific modality to evaluate the extraocular muscles. B-scan can demonstrate qualitative muscle enlargement although not to the degree achievable on CT and MRI scans. A-scan adds a quantitative dimension by providing a means to accurately measure muscle thickness. In addition, the analysis of the A-scan spikes within the muscle gives tissue signatures that are characteristic for Graves' as contrasted to other causes of muscle thickening, such as myositis.

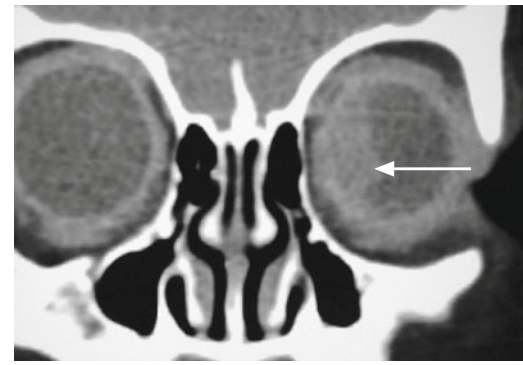

FIG. 1 Computed tomography scan of retinoblastoma (*arrow*)

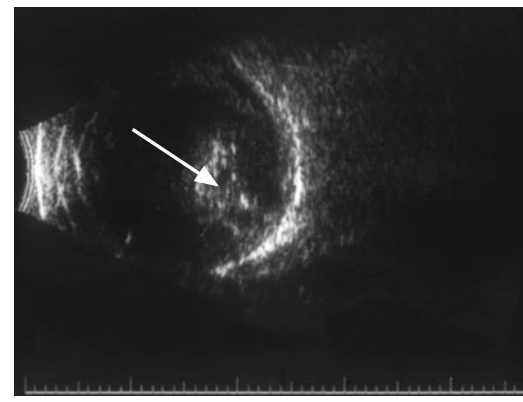

FIG. 2 B-scan of retinoblastoma (*arrow*)

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