Optical Coherence Tomography in Children With Retinoblastoma

To the Editors:

We read with interest the article by Shields et al. on optical coherence tomography (OCT) in children with intraocular tumors and simulating conditions. We agree with the authors that OCT is a useful and well-tolerated diagnostic modality for macular evaluation in children. As it has a higher resolution (10 µm) than ultrasound, it is thus more sensitive than ultrasound in detecting macular edema, surface wrinkling maculopathy, and submacular fluid.

In the authors’ series of 44 eyes, retinoblastoma (10 of 44) constituted a major group. Considering the age group of the patients included, we presume these eyes had healed or regressing tumor lesions. We are interested to know whether OCT can be used to assess the activity status of the tumor mass in these eyes, and we also would like to know if the authors observed any features on OCT that can be used to differentiate active tumors from healed and regressing tumors. Although the ultrasound-generated height and width of the tumor commonly is used to monitor the response to treatment, assessment of true height may not be possible with OCT if the surface tissue possesses high reflectivity leading to posterior shadowing. We would like to know the authors’ experience and their suggestion for follow-up with OCT in eyes with retinoblastoma.

REFERENCES


Parul Sony, MD
Sat Pal Garg, MD
Dr. Rajendra Prasad Centre for Ophthalmic Sciences
New Delhi, India

Reply:

We appreciate the interest of Drs. Sony and Garg in our article on OCT for children. We found OCT to be most useful in the assessment of tumor-related subretinal fluid and intraretinal edema.
With regard to retinoblastoma patients, we generally performed the test in children age 4 years or older as it required a certain level of cooperation. A few of the children had untreated retinoblastoma, and we found OCT useful in delineating subretinal fluid, intrinsic calcification, and intratumoral cavities. However, the technique was limited in this group of patients as the details of the deep tumor were sometimes camouflaged by optically reflective tumor tissue, especially calcification. Ultrasonography still remains the most accurate method for measuring retinoblastoma thickness.

Most of the retinoblastoma patients in our series had been treated previously, and OCT was used for monitoring macular changes such as macular edema. We did not evaluate the usefulness of OCT for judgment of tumor activity, but we believe indirect ophthalmoscopy in the hands of an experienced specialist is the best method to judge retinoblastoma activity. There are many variables in retinoblastoma management that need to be considered, and OCT addresses only the immediate retinal findings in the posterior pole. Other features such as vitreous and subretinal seeds, lateral tumor extension, tumor height, and tumor vascularity are not clearly depicted on OCT. Therefore, we currently believe the role of OCT for children with retinoblastoma is primarily for posttreatment monitoring of macular changes.

Carol L. Shields, MD
Wills Eye Hospital
Philadelphia, Pennsylvania