RESEARCH LETTERS

Retinal Detachment Due to an Outer Retinal Tear Following Laser Prophylaxis for Retinoschisis

We report a case of a schisis detachment due to a tear in the outer retina that occurred shortly after laser prophylaxis for retinoschisis. The clinical course and outcome are described.

Report of a Case. A 55-year-old hyperopic man with no significant ocular history was seen in consultation for photopsias of the left eye and was found to have degenerative retinoschisis bilaterally. The patient was asymptomatic in his right eye. Best-corrected visual acuity was 20/20 OU. Anterior segment examination of both eyes revealed trace nuclear sclerosis. In both eyes, the schisis cavities were located inferotemporally and anterior to the equator. Observation was recommended. Thirteen months later, the retinoschisis in the right eye had progressed posteriorly to within 2 to 3 disc diameters from the fovea. There were no inner or outer wall holes identified in the right eye. The left eye had an appearance stable from that at the initial visit the year before. There was no posterior vitreous detachment in either eye. The patient received barrier laser treatment posterior to the retinoschisis in the right eye (Figure 1).

Seventeen days after the laser treatment, the patient stated that he began noticing a shadow in his vision superonasally in his right eye. He was found to have a neurosensory detachment emanating from the retinoschisis. A large tear in the outer retina had developed immediately anterior to the barrier laser and conformed to the curvilinear shape of the laser (Figure 2). The patient underwent pars plana vitrectomy, internal drainage of the schisis cavity and neurosensory detachment, endolaser treatment, and intraocular gas treatment.

Comment. Posterior extension of retinoschisis cavities without a neurosensory detachment has been reported to occur extremely rarely. According to natural history studies, most cases remain stable and rarely extend to involve the macula. No definitive guidelines exist for laser prophylaxis in these unusual circumstances.

Retinal detachment associated with retinoschisis is rare and is due to holes in the outer retinal layer. The extent of the detachment is limited by the finite amount of fluid contained within the schisis cavity, is usually confined to the area of retinoschisis, and is usually nonprogressive. Outer wall holes are found to be present in 11% to 56% of these eyes, and neurosensory detachment has been reported to occur in up to 58% of eyes affected by outer layer holes. There is no consensus about when to treat because many of these eyes will remain stable.

Our patient presented a therapeutic challenge. Our decision to treat was based on the posterior extension of the schisis cavity threatening the macula and on patient preference. Given the temporal relationship of the laser treatment to the development of the detachment, we theorized that the laser induced the outer retinal tear, which led to development of the neurosensory detachment.

Figure 1. Retinoschisis with a posterior margin encroaching the macula. Moderate-intensity laser photocoagulation has been placed posterior to the schisis cavity.

Figure 2. A neurosensory detachment has developed extending toward the macula. A, There is a large tear in the outer retina curvilinear and paralleling the posterior extent of the schisis cavity. B, Optical coherence tomography shows the schisis cavity, the inner retinal layer, and the tear in the outer retinal layer.
Our case demonstrates that laser treatment of retinoschisis may be associated with retinal detachment due to the development of outer retinal layer defects.

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Rectus Pulley Instability as a Cause of Y-pattern Exotropia Revealed by Magnetic Resonance Imaging

Y-pattern exotropia is a rare condition that cannot be corrected by conventional surgical methods used for V-pattern deviation. It has been proposed that lateral rectus (LR) muscle co-contraction during elevation causes Y-pattern exotropia. However, the precise mechanism is still not known. This article describes a patient with Y-pattern exotropia with pulley instability as revealed by magnetic resonance imaging (MRI). The patient’s condition was improved through rectus muscle transposition.

Report of a Case. An 8-year-old girl had exodeviation during upgaze since age 1 year. She did not have diplopia and had no history of strabismus surgery. She had orthophoria in primary position and downgaze. In upgaze, she had 40 prism diopters (PD) of exotropia at distance and at near. She showed no hyperdeviation in horizontal side gaze but had paradoxical abduction of the normally adducting eye in supraduction (Figure 1A).

High-resolution T1-weighted MRI was performed with a 1.5-T Sigma scanner (GE Healthcare, Milwaukee, Wisconsin). We used a 7.6-cm round surface coil to improve the signal to noise ratio. For obtaining a multipositional MRI, the scanned eye was occluded and the contralateral eye was fixing on the targets at 30° from primary position that were attached to the inside of the scanner magnet. Contiguous MRIs of the 9 cardinal positions of gaze were obtained in the quasi-coronal plane transverse to the axis of each orbit, at 2-mm thickness with a 256 × 192 matrix over a 10-cm² field of view. Digital MRIs were analyzed using the ImageJ program (http://rsbweb.nih.gov/ij/index.html). Analysis of the pulley position was performed as previously described. The pulley position was estimated as the area centroid 10 mm posterior to the globe center; this was compared with the normal range of the pulley position as reported in our previous study.

Figure 1. Preoperative photographs of the 9 cardinal positions show 40 prism diopters of Y-pattern exotropia (A), and postoperative photographs of the 9 cardinal positions show improvement in Y-pattern exotropia (B).