Optical Coherence Tomography Findings in Delayed Subretinal Fluid Absorption After Scleral Buckling Surgery

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ABSTRACT
The occurrence of loculated bleb-like delayed subretinal fluid absorption has been reported following scleral buckling surgery and more commonly following pneumatic retinopexy among adults and seldom in children. The authors report the occurrence of delayed subretinal fluid absorption following scleral buckling surgery for rhegmatogenous retinal detachment in a 15-year-old girl, indicating the need for routine optical coherence tomography evaluation in the non-amblyogenic age group of children who have good anatomical but poor functional outcome following retinal reattachment surgery. [J Pediatr Ophthalmol Strabismus 2009;46:54-55.]

INTRODUCTION
The occurrence of loculated bleb-like delayed subretinal fluid absorption has been reported following scleral buckling surgery and, more commonly, following pneumatic retinopexy.1,2 We describe a 15-year-old girl who had a poor clinical outcome 6 months after surgery despite good anatomical success. Optical coherence tomography (OCT) revealed delayed subretinal fluid absorption as the cause of defective vision.

CASE REPORT
A 15-year-old girl who underwent scleral buckling surgery in her left eye for rhegmatogenous retinal detachment involving the macula due to lattice with atrophic holes came for regular follow-up 6 months after surgery with complaints of persistent distortion and defective vision. Her best-corrected visual acuity was 20/60 in the left eye. The anterior segment was normal. On fundus examination, the posterior pole and the fovea appeared normal on indirect ophthalmoscopy and slit-lamp examination using the +90 diopter lens (Fig. 1A). In the area of previous detachment in the inferior quadrant, multiple raised bleb-like lesions simulating multiple pigment epithelial detachments (Fig. 2A) were seen. OCT (Zeiss Stratus; Carl Zeiss Meditec, Dublin, CA) showed the presence of localized subretinal fluid under the fovea (Fig. 1B). Multiple areas of localized neurosensory detachment ranging from ¼ to ½ disc areas were also seen in the area of previous retinal detachment (Fig. 2B).

DISCUSSION
Several reasons have been postulated as possible causes for delayed subretinal fluid absorption following retinal detachment surgery, including chronicity of the retinal detachment, presence of subretinal precipitates, and excessive cryopexy during surgery leading to choroidal vascular insufficiency. This phenomenon is well known to retinal surgeons who routinely perform non-drainage scleral buckle operations and pneumatic retinopexy and the reported incidence is 4.3% over a 5-year period.1,3 Our patient had non-drainage scleral buckling surgery and excessive cryopexy.
Delayed subretinal fluid absorption has been described to occur in diffuse and localized forms.\(^2,4,5\) In the diffuse form, the subretinal fluid persists in the inferior quadrant (usually in a more dependent area), which tends to shift and takes several months to reabsorb. In the localized form, the fluid may involve the macula, tends to be subtle, does not shift, and may be difficult to detect on indirect ophthalmoscopy. These localized pockets, which occur in the absence of open retinal breaks, resemble serous pigment epithelial detachments, range from 1 to 3 disc diameters in size, and may be associated with subretinal precipitates.\(^4,5\) The phenomenon of shallow loculated delayed subretinal fluid absorption that was seen in our patient is sufficiently different and subtler than typical residual fluid associated with non-drainage procedures as previously described.\(^6\)

Loculated pockets of subretinal fluid in the macula have been described to adversely affect the visual prognosis.\(^2,7\) These patients have bothersome postoperative symptoms, which include visual fluctuation, “haze,” and metamorphopsia. Our patient had these symptoms but the macula appeared normal on slit-lamp and indirect ophthalmoscopy except for the small pockets of subretinal fluid in the inferior quadrant in the area of previous retinal detachment. The patient had poor visual outcome despite good anatomical success.

OCT detected the macular pathology and the cause of poor vision in our patient. This indicates the need for routine OCT evaluation in the non-amblyogenic age group of children who have good anatomical but poor functional outcome following scleral buckling surgery for rhegmatogenous retinal detachment.

REFERENCES