vascularization had proceeded anteriorly. Expression of VEGF in the retina and other ocular tissues was detected at both protein and messenger RNA levels (Figure 2).

Comment. Bevacizumab in this patient was shown to be well tolerated without any signs of toxic effects; in particular, no inflammation, degeneration, or necrosis was observed. Furthermore, the results show that bevacizumab effectively controlled the neovascularization in zone 1, stage 2+ ROP. Vascular endothelial growth factor is a survival factor for retinal neurons and a critical neuroprotectant during the adaptive response to ischemic injury.3 The retina and the proliferating abnormal vessels showed high levels of VEGF expression at both messenger RNA and protein levels. Vascular endothelial growth factor has recently been shown to influence neuronal growth, differentiation, and survival owing to its neurotrophic effects.3-5 Therefore, the dosage of bevacizumab is critical to preserve this effect on the neuroretina for adequate development. In our case, we administered 40% of the adult dose twice. Our results show preservation of morphology and expression of VEGF in the retina.

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Descemet Membrane Rupture Accompanied by Stromal Clefting in Congenital Glaucoma

In congenital glaucoma, larger degrees of corneal distortion are better tolerated by the epithelium and stroma than by the Descemet membrane. A sequential ultrasound biomicroscopical (UBM) examination of the cornea helps demonstrate both the pathophysiological mechanism for the development of breaks in the Descemet membrane as well as an accompanying clefting of stromal tissue causing acute corneal hydrops. Such examinations can provide warning of impending ruptures affecting visual prognosis.

As recently demonstrated via UBM by Nakagawa and colleagues,1 rupture of the Descemet membrane in keratoconus is also often accompanied by clefting of the stroma.

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mal tissue. This leads to acute corneal opacification as well as a permanent scar after healing by secondary intention. A similar final pathway, but with minimal stromal cicatrization due to healing by primary intention, may be present in congenital glaucoma with megalocornea. Imaging with UBM has proved reliable in delineating different corneal layers when compared with histopathological sections and allows for in vivo anatomical studies. We performed UBM image acquisition under general anesthesia in a patient with congenital glaucoma, both prior to surgical treatment and during routine follow-up. Images obtained (Figures 1, 2, 3, 4, and 5) demonstrate mechanical stretching of the cornea leading to rupture of the Descemet membrane accompanied by heretofore unrecorded clefting of the stromal tissue. Imaging of the cornea with UBM can provide information regarding the presence, position, and evolution of potential breaks in the Descemet membrane along with clefting of the stromal tissue in congenital glaucoma.

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Figure 3. The patient did not receive the prescribed topical medications; 2 weeks later, an image was obtained approximately 6 hours after endothelium and Descemet membrane rupture had occurred, producing acute corneal hydrops. The detached portion of the Descemet membrane is slack with rolled edges, and a communication between the anterior chamber and the stroma is clearly visible. A tear and irregularity of the posterior stromal surface are also evident (arrow) where decreased reflectivity was previously noted in Figure 2, indicating stromal clefting that exacerbates corneal edema. Epithelial edema is visibly more significant as a consequence of the break both in the endothelium and Descemet membrane as well as within the stroma. A repeat trabeculectomy procedure was performed.

Figure 4. Two weeks after the break, complications in the contralateral eye necessitated another repeat trabeculectomy. Subsequent to normalization of intraocular pressure and reduction of corneal distention, the posterior stromal discontinuity is no longer apparent with the cleft now already sealed by primary intention (arrow). There no longer is cleavage visible between the Descemet membrane and the stroma on the left side, and endothelial cells can migrate over the stroma.

Figure 5. Three months after the break, during standard follow-up examination. The epithelial layer remains moderately thickened despite continued migration of endothelial cells and laying down of new basement membrane material, now filling the previously noticeable cleavage space between the Descemet membrane and the stroma on the right. Clinically, a barely visible diffuse white scar is present, corresponding to the area of previous stromal clefting (arrow), with the surrounding cornea now transparent.

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