ported. Noonan and Clark\(^1\) reported a case of unilateral serous retinal detachment following unilateral argon laser photocoagulation treatment for threshold ROP. Berman and Deutsch\(^2\) reported a case of bilateral pigment epithelial detachments in a premature neonate being screened for ROP. In both cases, these retinal changes resolved spontaneously without sequelae, and the authors postulated that phenylephrine-induced hemodynamic changes in the choriocapillaris may have been responsible.\(^1,2\) Macular pigmentary changes have been reported following cryotherapy for ROP.\(^3\) Williams and Trese\(^4\) reported a unilateral punched-out macular lesion with pigmentary change in an 11-year-old girl who had been born prematurely but had never received any treatment for ROP.

Phenylephrine drops are an unlikely cause for these posterior segment changes, given their widespread use in preterm infants and the rarity of these complications. We hypothesize that the diode laser treatment in our case may have caused an inflammatory reaction that led to fluid exudation. Fluid collection at the macula may be responsible for subsequent observed macular pigmentary changes, as suggested by Williams and Trese.\(^4\) However, inflammation following treatment would not explain the retinal changes in children who did not receive treatment.\(^1,4\) Different etiological mechanisms may apply in different situations. Individual factors such as very low birth weight, early development and treatment of threshold ROP, and possibly multiple-gestation pregnancy may play a role in the development of subretinal fluid collections in premature infants with ROP.

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Retinal Pigment Epithelium Tumoralike Lesion Arising From an Area Treated With Laser Photocoagulation

Focal hyperplasia of the retinal pigment epithelium (RPE) is a benign condition that can occur as a result of numerous ocular injuries.\(^1,2\) including laser photocoagulation of the choroid or retina in various disease conditions.\(^3\) It appears as an irregular, flat accumulation of black pigment under the sensory retina. It is uncommon for RPE hyperplasia to evolve into elevated, tumoralike lesions. To the best of our knowledge, there has been no documentation of such lesions from their first appearance to full development. This case report documents laser photocoagulation to treat choroidal neovascularization (CNV) associated with age-related macular degeneration evolving into RPE hyperplasia and then a tumoralike elevated lesion.

Report of a Case. In 1991, a 62-year-old African American woman was examined for vision loss in her right eye. Her visual acuity with correction was 20/400 OD and 20/40 OS. She had a subfoveal CNV lesion with subretinal fluid, blood, and lipid components (Figure 1). A fluorescein angiogram showed subfoveal CNV, composed of classic CNV with no occult CNV, that was less than 3.5 disc areas in size.

Laser photocoagulation treatment was applied to decrease the risk of additional severe visual acuity loss.\(^4\) Posttreatment photographs confirmed adequate intensity throughout the area of laser treatment, which covered the lesion in its entirety. One month after treatment, the patient’s visual acuity with correction was 20/800 OD.

Two months later, flat foci of RPE hyperplasia were noted. Additionally, prominent retinal folds were observed, suggesting traction by the fibrovascular tissue (Figure 2). A fluorescein angiogram showed no evidence of recurrent CNV. Hypofluorescence of the center of the lesion suggested laser photocoagulation treatment.

Figure 1. A, A fundus photograph taken at the initial examination shows a subfoveal choroidal neovascular lesion with subretinal fluid, blood, and lipid components. B, A fundus photograph taken immediately after laser photocoagulation shows the laser-treated area not extending over a pseudopod of blood (arrow).
sion, caused by the RPE hyperplasia, was surrounded by a ring of hyperfluorescence associated with RPE atrophy without leakage.

During the next 4 years, areas of pigment evolved into an elevated lesion measuring 1.6 mm × 1.4 mm within a larger area of flat RPE hyperplasia and located at the center of the laser-treated area (Figure 3). Ultrasoundograms (A and B scans) showed a solid highly reflective elevated lesion with a maximum height of 0.96 mm above the retinal surface. The lesion remained stable through July 2001, and the patient's visual acuity remained stable at 20/250 OD.

In 1996, laser photocoagulation was applied for extrafoveal and recurrent subfoveal CNV in the left eye. Flat hyperplastic pigmented lesions developed in this eye as well, but they did not become elevated tumorlike lesions as had occurred in the right eye.

Comment. Shields et al recently described a patient who underwent laser photocoagulation for central serous chorioretinopathy, in which an elevated lesion gradually enlarged, eroded through the sensory retina, and adhered to the posterior hyaloid face. No fundus photographs were available during the development of this hyperpigmented lesion. The same article described another patient with similar findings arising from what presumably began as a toxoplasmosis lesion. Both these lesions were confirmed to be benign by histopathological analysis based on material obtained by fine-needle aspiration.

In our case, the differential diagnosis of the elevated pigmented lesion is similar to what was described by Shields et al. Congenital hypertrophy of the RPE is a benign tumor that rarely can give rise to malignant adenocarcinoma. Choroidal malignant melanomas and choroidal nevi are other possible diagnoses, although small melanomas and nevi do not tend to invade the sensory retina. Unlike the cases described by Shields et al, the current report demonstrates that it is not necessary for the tumor to produce transudative retinopathy.

At our center, CNV is relatively uncommon in African Americans compared with whites, but it is unknown if the patient's race had any relationship to the unusual hyperplasia that developed. More collective experience should provide more information regarding these lesions.

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Figure 2. A fundus photograph (A) and a late-phase frame of a fluorescein angiogram (B) taken 2 months after laser treatment show flat foci of retinal pigment epithelium hyperplasia. Additionally, retinal folds (A) are observed, suggesting traction by the fibrovascular tissue with staining but no leakage of the fluorescein-treated area (B).

Figure 3. A, A fundus photograph taken 4 years after laser treatment shows an elevated lesion measuring 1.6 mm × 1.4 mm (white arrows) within a larger area of flat retinal pigment epithelium hyperplasia (black arrows) and located at the center of the laser-treated area. B, An A-scan ultrasonogram shows a highly reflective elevated lesion (arrow A to arrow B).
In comparison, severe visual loss occurs in 0.03% and 48% of eyes with early nonneovascular age-related macular degeneration (AMD) and neovascular AMD, respectively.1 Macular translocation with 360° peripheral retinectomy (MT360), originally designed for neovascular AMD,3 rotates the retina away from a subretinal lesion onto healthy retinal pigment epithelium, restoring visual function.3,5 We report a case of GA secondary to end-stage nonneovascular AMD treated with MT360.

**Report of a Case.** A 68-year-old man had a 2-month history of blurred vision in the right eye. His ophthalmic history included long-standing reduced visual acuity in the left eye, amblyopia in the left eye, and bilateral pseudophakia. An ocular examination revealed a best-corrected visual acuity of 20/100 OD and 20/64 OS for near, bilateral silicone posterior chamber intraocular lenses, and bilateral GA surrounding the fovea, measuring 4 Macular Photocoagulation Study disc areas (Figure 1A). Fluorescein angiography confirmed the absence of choroidal neovascularization in the right eye (Figure 1B).

An MT360 was performed and involved pars plana vitrectomy with vitreous base shaving, total retinal detachment by subretinal injection of balanced salt solution plus, a 360° peripheral retinectomy, and superior retinal rotation with a modified diamond-dusted soft-tipped cannula (Synergetics Inc, St Charles, Mo).3 After foveal placement over normal retinal pigment epithelium and retinal tamponade with perfluorocarbon liquid, endolaser retinopexy was performed at the posterior margin of the retinectomy and a silicone/poly(methyl methacrylate) lens exchange was performed, followed by direct perfluorocarbon liquid/silicone oil exchange.3 Three weeks later, the patient underwent superior oblique tenotomy, inferior oblique transposition, lateral rectus resection with transposition, and silicone oil removal.3 The best-corrected visual acuity was 20/80 OD at 4 weeks and 20/32 OD at 2 and 6 months. Near visual acuity with a +2.50-diopter (D) add was 20/20 OD at 2 and 6 months. The patient had diplopia controlled with a 20-D base-out prism without perceived tilt. Right funduscopy demonstrated a translocated fovea overlying healthy retinal pigment epithelium with no evidence of atrophic changes, choroidal neovascularization, or retinal detachment (Figure 2A and B).

**Comment.** A small GA lesion treated with limited macular translocation has been reported.6 The 4 Macular Photocoagulation Study disc areas of atrophy seen in this case required more foveal shift than the typical 1200-µm rotation achieved with limited macular translocation, which can be unpredictable. An MT360 can rotate the retina up to 80°, and the postoperative retinal position is predictable.3,4 Complications of MT360 include retinal detachment with proliferative vitreoretinopathy, cystoid

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**Macular Translocation With 360° Peripheral Retinectomy for Geographic Atrophy**

Of people older than 50 years, 0.6% have geographic atrophy (GA); and of those 75 years or older, 3.5% have GA.1 Geographic atrophy is bilateral in up to 56% of cases,2 and severe visual loss occurs in up to 42% of eyes.1

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**Figure 1.** Preoperative fundus photograph and fluorescein angiography of the right eye. A, An area of geographic atrophy measuring 4 Macular Photocoagulation Study disc areas, involving the fovea (arrowheads). The inferior edge of the lesion is highlighted (arrow). B, A late angiographic frame does not show any evidence of choroidal neovascularization.