A 28-YEAR-OLD MAN WITH DIABETIC RETINOPATHY

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BACKGROUND

A 28-year-old male with a history of type 1 diabetes mellitus presented with partial vision loss in both eyes. The problem has persisted for several months and has begun to interfere with his daily functioning. He is anxious to hear his prognosis.

MEDICAL HISTORY

The patient was diagnosed with type 1 diabetes mellitus at the age of 5 years. He has no history of hypertension or dyslipidemia. He is taking regular insulin 20 U three times daily and lente insulin 25 U/day.

PAST OCULAR HISTORY

The patient was first treated 8 months ago with grid-pattern photocoagulation to the right eye. He underwent a second grid-pattern photocoagulation 4 months ago.

REVIEW OF SYSTEMS

The review of systems findings shows that the patient is otherwise healthy, with no other symptoms. He has an adequate appetite, has no peripheral pain, and is not fatigued. He has not experienced any recent headaches, dizziness, fever, or chills. He has no reported allergies and is taking no other medications.

FAMILY HISTORY

The patient is the only child of divorced parents. His mother has a history of type 1 diabetes mellitus; his father is in good health. Family history is otherwise noncontributory.

SOCIAL HISTORY

The patient is a mathematics teacher at a local high school. He acts as an advisor to the high school chess team and routinely attends his students’ competitions. He rarely engages in physical exercise because he has always preferred intellectual pursuits. He is single and has no children, but hopes to get married someday and have a family of his own. He has no history of tobacco or recreational drug use. He drinks alcoholic beverages occasionally.

PHYSICAL EXAMINATION

At presentation, the patient appeared to be an alert, observant, cooperative, but slightly anxious adult male. Physical examination indicated the following results: weight, 204 pounds; height, 71 inches; blood pressure, 130/80; and pulse, 80 beats/min. His heart rate was slightly elevated over his normal rate, as shown in his medical records; this elevation was likely caused by anxiety related to his medical examination. Cardiac rhythm was within a normal range, with no murmur detected. No further abnormalities were noted.

OPHTHALMIC EXAMINATION

The best corrected visual acuity of the patient’s right eye was 20/80 and the left eye was 20/25. The extraocular motility examination, confrontation visual field test, and papillary examination were in the normal range in both eyes. The intraocular pressure (IOP) was 15 mm Hg in both eyes.

The slit lamp examination showed normal eyelids and conjunctiva in both eyes. The iris examination
showed no evidence of rubeosis in either eye. The anterior chamber was quiet and the lens was clear in each eye.

The fundus examination of the right eye showed diffuse dot and blot hemorrhages with few cotton wool spots and exudates in the posterior pole. A significant amount of diffuse macula edema was noted (Figure 1). Prior grid-pattern laser scars were noted within the macula. There was no evidence of neovascularization of the disc or elsewhere.

The fundus examination of the left eye showed normal optic disc and retinal vessels. There was a moderate amount of dot hemorrhages and exudates temporally within the macula (Figure 2). Clinically significant macular edema was noted temporal to the fovea. There was no evidence of neovascularization of the disc or elsewhere.

**Studies**

The fluorescein angiogram of the right eye showed diffuse punctate hyperfluorescence with late leakage consistent with diffuse macular edema (Figures 3 and 4). No significant capillary nonperfusion or neovascularization was noted.

The fluorescein angiogram of the left eye showed significant angiographic macular edema temporal to
the fovea (Figure 5). No significant capillary nonperfusion or neovascularization was noted.

The optical coherence tomography (OCT) of the right eye revealed intraretinal cystoid changes and significant retinal thickening consistent with diffuse macular edema (Figure 6). The OCT of the left eye showed no intraretinal cystoid changes or significant central macular thickening (Figure 7).

**Course of Management**

The patient was treated with grid-pattern photocoagulation to the right eye. The left eye was treated with focal photocoagulation temporally within the macula. One month later, the vision of the left eye had improved to 20/20. However, the vision of the right eye had decreased to 20/160 with persistent diffuse macular edema. The right eye was then treated with a 4-mg intravitreal triamcinolone acetonide injection. At the 3-month postinjection follow-up visit, the vision of the right eye had improved to 20/60. The OCT of the right eye showed a significant decrease of retinal thickening (foveal thickness of 207 µm) and resolution of the intraretinal cystoid changes (Figures 8A and 8B). The IOP of the right eye was 33 mm Hg. An antiglaucomatous eyedrop was started on the right eye. At the 5-month post-injection follow-up visit, vision in both eyes had improved: right eye, 20/50; left eye, 20/20. The IOP of the right eye returned to normal and use of the antiglaucomatous eyedrop was discontinued.