


**Tadalafil Associated With Anterior Ischemic Optic Neuropathy**

Tadalafil (Cialis; Eli Lilly, Indianapolis, Ind) is used to treat erectile dysfunction. Sildenafil (Viagra; Pfizer, New York, NY), a similar medication, has been associated with nonarteritic anterior ischemic optic neuropathy (NAAION). We describe a patient who developed NAAION after he took tadalafil.

**Report of a Case.** A 59-year-old man with prostate cancer and erectile dysfunction underwent uncomplicated laparoscopic prostatectomy. His only other medical problem was depression, treated with bupropion hydrochloride. The immediate postoperative hematocrit measured 25.2%. The patient was ambulating and hemo-

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**Figure 1.** Swedish Interactive Threshold Algorithm Standard 24-2 pattern deviation plot of the left eye. There is inferior altitudinal visual field loss.

**Figure 2.** Left optic disc. There is edema and a superior nerve fiber layer hemorrhage.
Recurrent Visual Field Defect and Ischemic Optic Neuropathy Associated With Tadalafil Rechallenge

Tadalafil, a selective cyclic guanosine monophosphate (cGMP)-specific phosphodiesterase type 5 (PDE5) inhibitor, enhances penile erectile function in men. Nitric oxide along with cGMP promotes blood flow to and dilation of smooth muscle in the corpus cavernosum of the penis. Phosphodiesterase type 5 inhibitors prevent degradation of cGMP to potentiate erectile function. Tadalafil (Cialis; Lilly ICOS LLC, Indianapolis, Ind) is one of the PDE5 inhibitors approved for erectile dysfunction, which also include sildenafil citrate (Viagra; Pfizer, Inc, New York, NY) and vardenafil hydrochloride (Levitra; Bayer AG, Leverkusen, Germany, and GlaxoSmithKline, Uxbridge, England).

The package insert for tadalafil describes adverse ophthalmic reactions that include blurred vision, changes in color vision, conjunctivitis, eye pain, tearing, and swelling of the eyelids. Some reports suggest that sildenafil use may be associated with nonarteritic anterior ischemic optic neuropathy (NAION).1,3 We describe a patient who took tadalafil 5 times in 1 month. He developed transient inferior visual field loss in the right eye within 2 hours of taking the first 4 doses. After the fifth dose, he developed NAION in the right eye with persistent inferior visual field loss.

Report of a Case. A 67-year-old architect with a medical history of hypercholesterolemia sought care because of vision loss. His medications included atorvastatin calcium, aspirin, and folic acid. He took 20 mg of tadalafil for the first time one morning before sexual intercourse. Within 2 hours, he noted an isolated inferior visual field defect in the right eye that resolved by the time he awoke the following day. On 2 other occasions separated by several days each, he took 20 mg of tadalafil in the morning before sexual intercourse, followed by a similar inferior visual field defect in the right eye that resolved within 24 hours each time. Several days later, he did not achieve an erection after taking 20 mg of tadalafil, but a similar transient inferior visual field defect recurred. Three days later, he took a fifth dose of the drug and participated in sexual intercourse. He noted an inferior visual field defect in the right eye within 2 hours that failed to resolve. He denied systemic symptoms of giant cell arteritis. His erythrocyte sedimentation rate was 5 mm/h.

On examination 14 days later, visual acuities were 20/20 OD and 20/40 OS. His medical records demonstrated baseline acuities of 20/20 OD and 20/40 OS. A right afferent pupillary defect was present. He identified 10 of 10 Ishihara color plates with each eye. Humphrey visual fields showed an inferior altitudinal visual field defect in the right eye (Figure 1). Dilated fundus examination showed hyperemia and edema of the right optic disc (Figure 2) consistent with NAION and a normal left optic disc with a small cup-disc ratio. The remainder of his neuro-ophthalmologic examination was unremarkable, including normal, nontender temporal artery pulses.

Comment. The most common optic neuropathy in patients older than 50 years is NAION. Examination results will show a swollen optic nerve and, typically, an altitudinal visual field defect. The pathophysiology underlying NAION is not well understood. Nearly all patients with NAION have a small, crowded optic nerve head (“disc at risk”), which leads some to believe that a type of compartment syndrome within the confines of the rigid scleral canal may occur.4,5 A microvascular ischemic event leads to axoplasmic stasis and edema,6 compressing the small capillaries of the optic nerve head.7 In older patients these capillaries may exhibit poor autoregulation, leading to more ischemia and axoplasmic stasis. The patient described herein had a disc at risk in the fellow eye, but it is unclear whether PDE5 inhibitors affect optic nerve blood flow.

Several patients have developed NAION between 45 minutes and 12 hours after taking sildenafil, a PDE5