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Sir,  
**Optic disc drusen associated with neovascularization of optic disc**

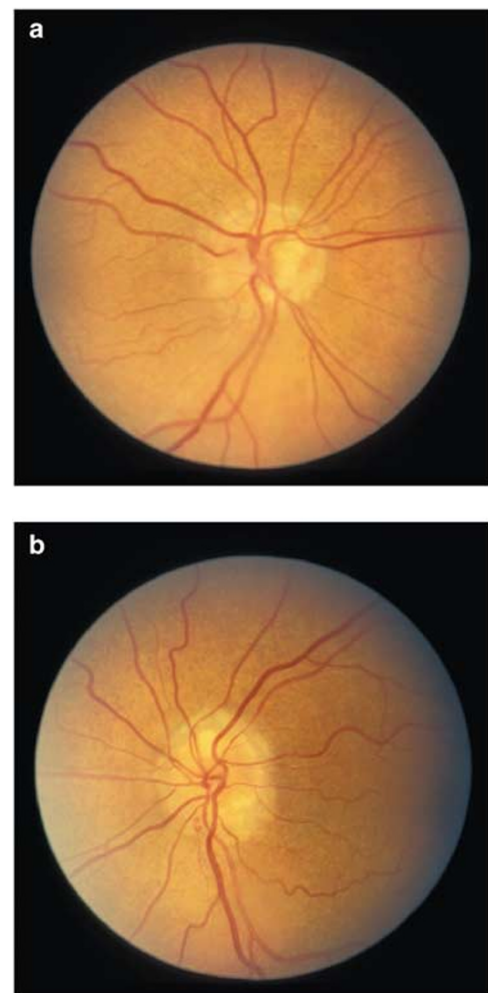
Optic disc drusen are known to be associated with other ocular conditions such as angioid streaks and retinitis pigmentosa and are rarely complicated by peripapillary disciform degeneration, central retinal arterial and venous occlusions. We report a patient who presented with bilateral optic disc drusen associated with bilateral neovascularization of the optic discs (NVD).

#### Case report

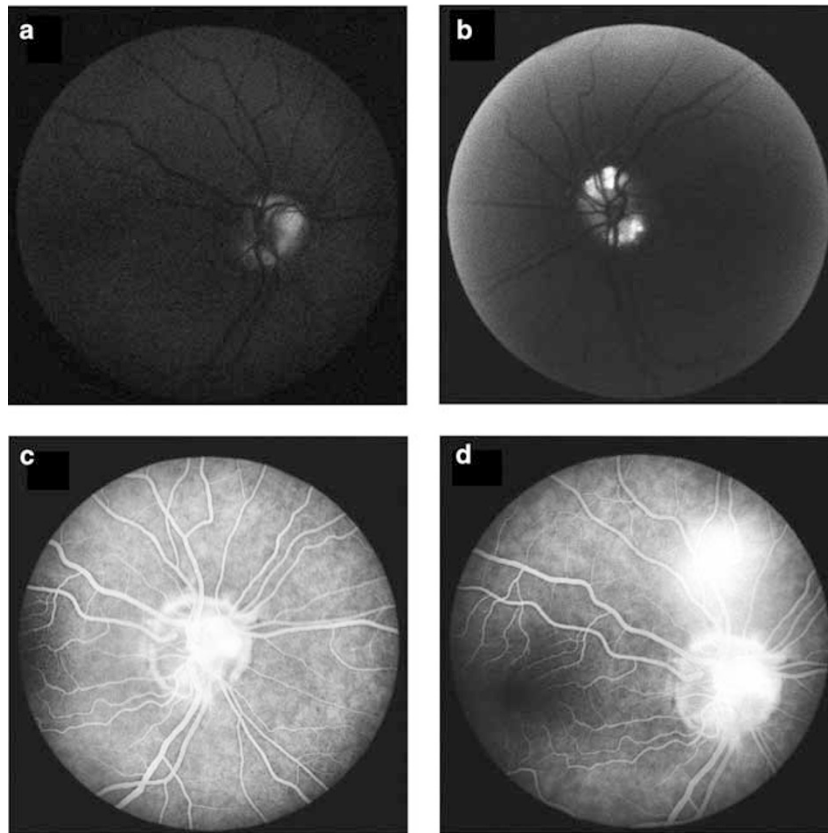
A 54-year-old woman who was asymptomatic was referred following a visit to an optician for a routine eye check. Her visual acuity was 6/4 in the right eye. Her

left eye was amblyopic and had a visual acuity of 6/36. The anterior segments were normal in both eyes with normal intraocular pressures. Posterior segment did not show any evidence of inflammation. Fundus examination showed presence of well-marked optic disc drusen in both eyes (Figure 1a, b). In addition, she had NVD in both eyes with a small optic disc haemorrhage in the left eye. The retinas appeared normal in both eyes. On fluorescein angiography, the preinjection photographs clearly showed autofluorescence from optic disc drusen in both eyes (Figure 2a, b). Fluorescein angiogram also confirmed the NVD (Figure 2c, d) on both sides with normal choroid and retina. Systemic evaluation was normal.

A detailed discussion with the patient about treatment resulted in a decision to perform panretinal photocoagulation in the right eye first. When the patient was reassessed in 4 weeks, the NVD had regressed



**Figure 1** (a, b) Colour fundus photographs showing optic disc drusen and NVD.



**Figure 2** (a, b) Autofluorescence demonstrating optic disc drusen. (c, d) Leakage of fluorescein from NVD on the right optic disc. NVD—Neovascularization of optic disc.

completely. Encouraged by the response, she underwent panretinal photocoagulation in the left eye, which also showed a similar response in 4 weeks. Both her eyes remain stable since the treatment.

### Comment

Optic disc drusen are calcified material in the substance of the optic nerve head. Sacks *et al*<sup>1</sup> presented a hypothesis on the pathogenesis of disc drusen. The presence of drusen may cause blurring of optic disc margins and may be mistaken for papilloedema. The drusen are initially buried but later become visible as irregular, nodular lesions that are bilateral in approximately 75% of patients.<sup>2</sup> Autofluorescence confirms these surface drusen in over 96% of cases. Buried drusen can be reliably detected by B-scan ultrasonography.<sup>3</sup>

Optic disc drusen are known to be associated with various vascular abnormalities in the eye.<sup>2</sup> These include opticociliary shunts, anterior ischaemic optic neuropathy, central retinal artery occlusion, central retinal vein occlusion, peripapillary disciform lesion, and retinal

haemorrhage. Other associations include retinitis pigmentosa and angioid streaks. We are not aware of any association with neovascularization of the optic disc. Neovascularization of disc and peripheral retinal new vessels are associated with conditions causing retinal nonperfusion such as diabetic retinopathy. They may also be seen in the presence of intraocular inflammation without evidence of retinal nonperfusion. The possibility of these abnormal vessels being opticociliary shunts was excluded by fluorescein angiography as there was leakage of dye from these vessels (Figure 2c, d).

NVD is thought to arise from the retinal circulation, but possible origin from the uveal circulation has been reported.<sup>4</sup> The pathogenesis for NVD in this patient is unclear. The presence of enlarging drusen may cause ischaemia that may stimulate development of new vessels at the disc border. Peripapillary choroidal filling defects on fluorescein angiography have been described in patients with optic disc drusen.<sup>1</sup> Growth factors such as vascular endothelial growth factor (VEGF) may also play a role. Expression of VEGF has been found to be more prominent in the nerve fibre layer near the optic

disc in rat retinas.<sup>5</sup> The patient was evaluated for the possibility of underlying causes such as diabetes, ocular ischaemia, vascular occlusion, and intraocular inflammation. We can only speculate on the pathogenesis of the development of NVD as our attempts to identify an underlying cause were unsuccessful.

In our patient, panretinal photocoagulation was effective in achieving regression of NVD within 4 weeks in each eye. The mode of action of panretinal photocoagulation in achieving successful regression of NVD is not clear. Our case highlights the usefulness of PRP in the treatment of NVD even when the pathogenesis is unclear.

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### Sir, Intravitreal triamcinolone for macular detachment following panretinal photocoagulation

Macular oedema often coexists with severe nonproliferative or proliferative retinopathy in diabetic patients. The Early Treatment Diabetic Retinopathy Study (ETDRS), along with clinical experience, have shown that panretinal photocoagulation (PRP) can exacerbate macular oedema and cause visual loss.<sup>1</sup> This effect is proportional to the amount of laser treatment.

Triamcinolone acetonide is a corticosteroid suspension that has been recently used, in clinical and experimental trials, as intravitreal injection, for the treatment of selected pathologic conditions.<sup>2–4</sup>

We report a case of exudative macular detachment following PRP, treated with intravitreal injection of triamcinolone.

### Case report

A 54-year-old man with a 15-year history of type II diabetes mellitus was referred for ophthalmic consultation because of sudden visual loss in his right eye. The patient had a history of and had been medically treated for hypertension and hypercholesterolemia. At the time of presentation, the patient was using insulin (17.5 U twice daily). On examination, his best-corrected visual acuity (BCVA) was light perception in the right eye and 20/40 in left eye. Results of anterior segment examination and intraocular pressure (IOP) measurement were unremarkable in both eyes. Fundus examination in the right eye was prevented by a dense vitreous haemorrhage. In the left eye, a high-risk proliferative diabetic retinopathy (PDR) was present, associated with clinically significant macular oedema and a large foveal hard exudate. After fluorescein angiography (Figure 1a), a PRP was performed in the left eye, in three sessions, of about 900 contiguous burns each, at 1-week intervals, under topical anaesthesia, using a frequency-doubled Nd:YAG laser (532 nm). A combination of focal and grid treatment of the macular region between 500 and 3000  $\mu\text{m}$  from the fovea was administered according to the ETDRS protocol, during the initial session. At 3 weeks after the final treatment session, the patient returned for scheduled evaluation. BCVA was unchanged in the right eye and decreased to 20/200 in the left eye. Funduscopy examination, in the left eye, revealed a large macular detachment, which was confirmed by optical coherence tomography (OCT) (Figure 2a). After informed consent was obtained, 4 mg (0.1 ml) of triamcinolone acetonide was injected through the inferior pars plana, in the left vitreous cavity. At 1