European Journal of Ophthalmology / Vol. 10 no. 4, 2000 / pp. 341-343

SHORT COMMUNICATION

Case report

Bilateral anterior ischaemic optic neuropathy due to optic disc drusen

G.G. KAMATH, S. PRASAD, R.P. PHILLIPS

Department of Ophthalmology, Arrowe Park Hospital, Upton, Wirral - UK

PURPOSE. *To report a case of bilateral anterior ischaemic optic neuropathy due to buried optic disc drusen.*
METHODS. *Case report.*
RESULTS. *A 64-year-old man presented with swollen optic discs and features suggestive of anterior ischaemic optic neuropathy (AION) in the left and right eye on two separate occasions ten months apart. Detailed ocular examination at presentation and systemic investigations did not reveal an underlying cause for the AION. At a later follow-up, optic disc drusen were noted in both eyes as partial optic atrophy had set in. This was confirmed by ultrasound B scan and demonstration of autofluorescence.*
CONCLUSIONS. *In patients presenting with AION uncommon underlying causes must be considered. Routine ultrasound B scan at presentation can easily establish or exclude optic disc drusen as an underlying cause. (Eur J Ophthalmol 2000; 10: 341-3)*

KEY WORDS. *Anterior ischaemic optic neuropathy, Optic disc drusen, B scan ultrasound*

Accepted: February 28, 2000

INTRODUCTION

Non-arteritic anterior ischaemic optic neuropathy (AION) is a common cause of significant visual loss in the elderly. Whilst systemic associations are common, an underlying ocular cause like optic disc drusen is rarely found. We report a case of bilateral sequential AION with buried disc drusen, where subsequent axonal degeneration made the drusen visible.

Case report

A 64-year old man presented with unilateral acute loss of vision in the left eye of four days duration. Visual acuities were 6/5 in the right eye (RE) and counting fingers at one metre in the superior hemifield, in the left eye (LE). The left eye was amblyopic with a previous best-corrected vision of 6/18. Examination revealed a left relative afferent pupillary defect (RAPD) and a swollen left optic disc with splinter haemorrhages. The right fundus was unremarkable and right colour vision was normal. There were no clinical features suggestive of temporal arteritis and a temporal artery biopsy was negative. A diagnosis of non-arteritic AION was made. Systemic workup did not reveal any significant medical conditions.

Ten months later he presented again with a week's history of visual disturbance in the right eye. The visual acuities were 6/5 in RE, 3/60 in LE and right colour vision was normal. On examination he had a persistent left RAPD, swollen right optic disc with splinter haemorrhage (Fig. 1, left). Fluorescein angiography showed diffuse leakage from the optic disc (Fig. 1, right). A month later his right acuity had dropped to 6/12, with impaired red-green colour vision. Further investigations including blood tests for vasculitis, carotid

Presented at EVER 98 (European Association for Vision and Eye Research), Palma de Mallorca, Spain, October 1998

1120-6721/341-03$01.50/0

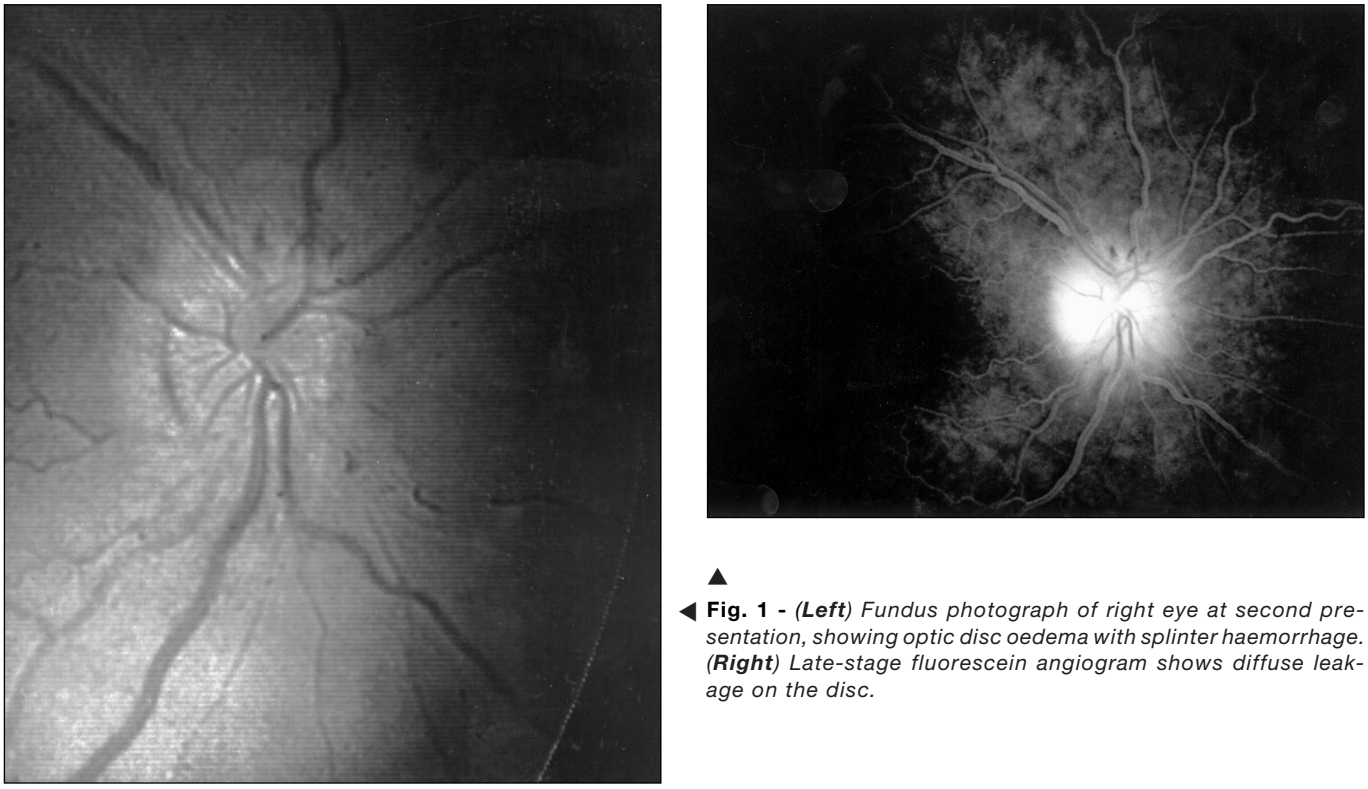

Fig. 1 - *(**Left**) Fundus photograph of right eye at second presentation, showing optic disc oedema with splinter haemorrhage. (**Right**) Late-stage fluorescein angiogram shows diffuse leakage on the disc.*

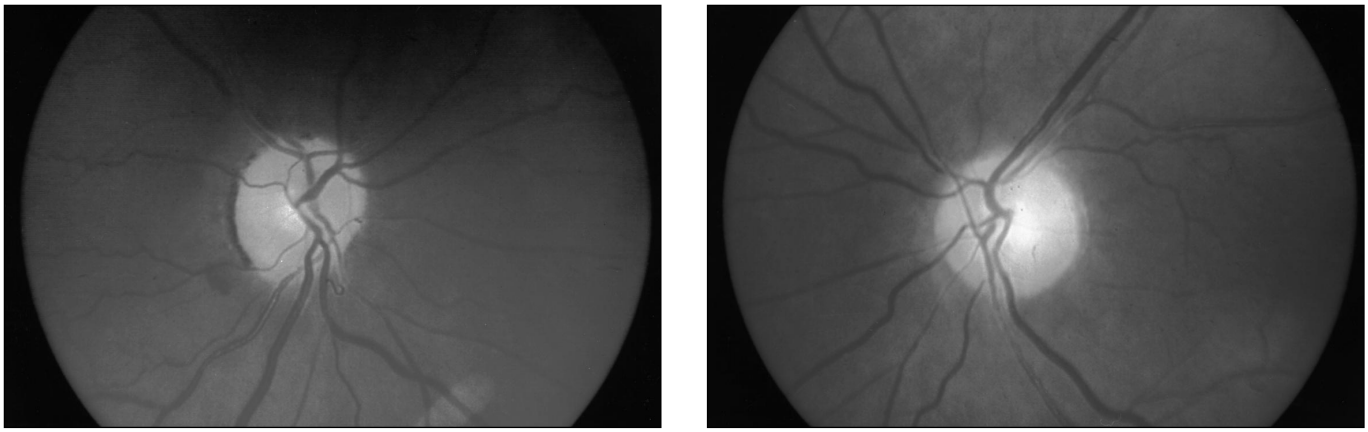

Fig. 2 - *Fundus photographs of right eye (**left**) and left eye (**right**) optic discs two months later. Note central greyish-yellow drusen, pallor of both discs and anomalous vascular branching. A peripapillary haemorrhage is also seen in the right eye.*

doppler study and MRI scan of optic nerve and brain were normal.

Two months later he had noticed a subjective visual improvement and right acuity was 6/9. Fundoscopy at this stage showed pallor of both optic discs due to partial optic atrophy and central greyish-yellow drusen were evident on both sides (Fig. 2, left and right). The drusen showed autofluorescence and ultrasound B scan (Fig. 3) confirmed the presence of optic disc drusen.

DISCUSSION

Optic disc drusen are commonly associated with visual field defects, but visual acuity is only rarely de-

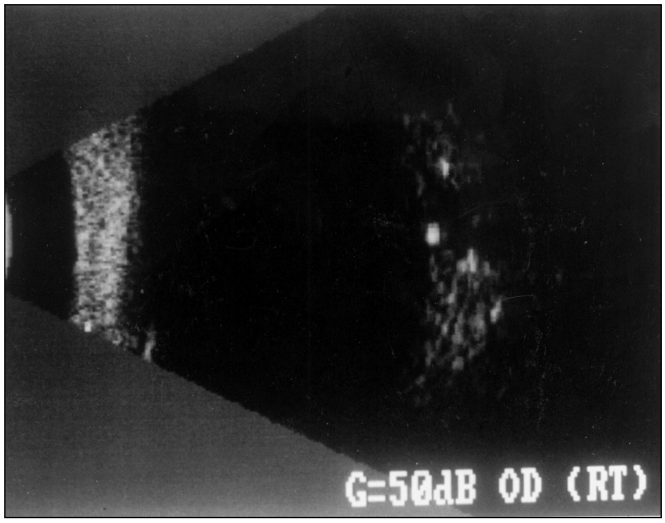

Fig. 3 - *B-scan ultrasound (50-dB gain) of the right eye shows hyper-echoic optic disc drusen.*

creased. Reduction in visual acuity from optic disc drusen maybe due to vitreous, peripapillary retinal or sub-retinal haemorrhage. Other causes include retinal vascular occlusions, associated tapeto-retinal degenerations and optic nerve damage. There are a few reports in the literature of AION associated with disc drusen (1, 2). Our case presented with severe loss of vision in one eye; the fellow eye was affected ten months later to a lesser extent. Although the drusen were buried and not visible initially, axonal degeneration following AION made them evident at a later date.

Disc drusen are associated with small, crowded optic discs (3) with anomalous vasculature (4). Such discs are also anatomically predisposed to AION (5). In this situation a small scleral canal with co-existing unyielding drusen may cause mechanical obstruction of axonal flow and distortion of blood vessels in the laminar and prelaminar regions, leading to ischaemia of the optic nerve head.

Buried drusen are not easily detectable on fundus examination, especially when the presentation is with a swollen hyperaemic disc, but can be established by B scan ultrasound. Non-arteritic AION can be associated with optic disc drusen and we suggest inclusion of B scan ultrasonography in the routine work up of such cases.

Reprint requests to:
Girish G. Kamath, FRCSEd, FRCOphth
Department of Ophthalmology
Arrowe Park Hospital
Upton, Wirral CH49 5PE, UK
e-mail: g.kamath@virgin.net

REFERENCES

1. Gittinger JW Jr, Lessell S, Bondar RL. Ischemic optic neuropathy associated with optic disc drusen. J Clin Neurophthalmol 1984; 4: 79-84.
2. Michaelson C, Behrens M, Odel J. Bilateral anterior ischaemic optic neuropathy associated with optic disc drusen and systemic hypotension. Br J Ophthalmol 1989; 73: 762-4.
3. Mullie MA, Sanders MD. Scleral canal size and optic nerve head drusen. Am J Ophthalmol 1984; 99: 356-9.
4. Rosenberg MA, Savino PJ, Glaser JS. A clinical analysis of pseudopapilledema I. Population, laterality, acuity, refractive error, ophthalmoscopic characteristics, and coincident disease. Arch Ophthalmol 1979; 97: 65-70.
5. Beck RW, Savino PJ, Repka MX, Schatz NJ, Sergott RC. Optic disc structure in anterior ischemic optic neuropathy. Ophthalmology 1984; 9: 1334-7.