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The trap of the displaced blind spot in automated perimetry

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In routine computer programs used with automated perimetry, restriction in the number of tested locations results in poor spatial delineation of the blind spot. To avoid an inadequate interpretation of the recorded data, a number of computer programs¹ exclude the evaluation of points located within the presumed area of the blind spot and its surroundings. These programs leave an empty space in the corresponding area of the result printouts.

This solution is advantageous in most clinical settings. With marked cyclotorsion, however,

the blind spot is displaced to such an extent that it appears in the evaluated portion of the visual field. The condition may be confusing when it occurs in conjunction with a bundle defect, mimicking an absolute scotoma within the area of the nerve fibre defect. This was shown with a patient suffering from Graves' disease which resulted in severe exocyclotorsion and optic neuropathy in the same eye.

Case report

A 57-year-old woman presented with endocrine orbitopathy. Corrected visual acuity was 20/20 in the right eye and 20/25 in the left eye. Relative afferent pupillary defect was found in the left eye. With the patient's head carefully placed in a straight position against the rests, Octopus automated perimetry was performed using the 30° option of the N1 program² (Interzeag AG, Schlieren, Switzerland). In the right eye, visual field was unremarkable. In contrast, in the left eye, the examination showed nasal defects, and a dense scotoma at the inferonasal border of the unchecked area of the blind spot (Fig 1). In that eye, Goldmann kinetic perimetry showed an inferior nasal step; in addition, the blind spot was located some 20° below its usual position, indicating that the absolute scotoma observed with automated perimetry represented a displaced blind spot. Left fundus showed a 25° exocyclotorsion (Fig 2). Ocular motility was impaired in both eyes, with reduction in elevation and abduction. Exophthalmometry was recorded as 14-14/107. Ocular pressure was markedly increased when attempting upgaze.

Comment

Displacement of the blind spot has been described in eyes with cyclotorsion.³ However, no emphasis has been given to the confounding

Figure 1 Left visual field, evaluated using automated perimetry. It demonstrated an inferonasal defect (open arrow), and a displaced, enlarged blind spot (closed arrow), and this is mimicking a profoundly altered area within the bundle defect. Broken line shows the projection of the papillomacular axis into the visual field, as inferred from fundus evaluation.

Figure 2 Left fundus, showing 25° excyclotorsion.

effects resulting from the association of blind spot displacement and bundle defects, when using computer programs excluding the testing of the presumed area of the blind spot, and letting the clinician believe that the blind spot is located within the unchecked surface of the visual field.

Examination of the fundus provides valuable information about the degree of cyclotorsion. Doubtful perimetric findings should be checked, using either manual kinetic perimetry or program options for automated perimetry which are specifically designed for evaluation of the blind spot area.^{2,4}

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IgG-κ extramedullary plasmacytoma of the conjunctiva and orbit

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A rare case of primary extramedullary plasmacytoma of the conjunctiva and orbit is reported. The patient was a 78-year-old woman who presented with tumour of subconjunctiva and orbit in the left eye.

Case report

A 78-year-old woman was referred on 22 October 1990 with a hard mass of the left lower conjunctiva, first noticed 2 months previously and gradually increasing in size. No history of

Figure 1 Facial view showing left-sided conjunctival tumour.

Figure 2 Computed tomography scan: horizontal section through orbit revealing a high density area in the left orbit.

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