DEFECTS IN VISUAL FIELDS PRODUCED BY HYALINE BODIES IN THE OPTIC DISKS

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The presence of hyaline bodies in the optic disks occasionally produces an appearance that may simulate that of chronic papilledema with secondary optic nerve atrophy. When the glistening bodies are large and lie near the surface, they cause little difficulty in diagnosis, but when they are small and lie buried so deeply within the nerve substance that they are scarcely visible, they may cause a fulness that is difficult to explain. In fact, unless they are looked for specifically, they may pass unnoticed.

Not only is the appearance of the optic disks misleading, but field defects are encountered rather frequently in this condition, either in the form of peculiar contractions or of arcuate scotomas. Such defects may confuse the diagnostician still further. This impairment of vision was mentioned by Reese in his excellent review of the subject in 1940.

In general, however, little attention has been paid to the associated visual defects; therefore, a consideration of this phase of the subject appears to be timely. I have reviewed the cases that I have seen during the past few years, and from the group in which the perimetric fields were plotted I have selected a few diverse types. They largely demonstrate how variable may be the defects.

REPORT OF CASES

CASE 1.—A woman aged 29 complained of nervousness, increased appetite and loss of weight. These were found to be due to exophthalmic goiter, and subtotal thyroidectomy was performed. There were no symptoms refer-

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Fig. 1 (case 1).—(A) right fundus; (B) left fundus; (C) visual fields. Vision was 6/10 in each eye.

Fig. 2 (case 2).—(A) right fundus; (B) left fundus; (C) visual fields. Vision was 6/6 in the right eye and 6/10 in the left eye.

Fig. 3 (case 3).—(A) right fundus; (B) left fundus; (C) visual fields. Vision was 6/7 in the right eye and 6/10 in the left eye.
able to the eyes. Neurologic examination was not performed.

Ophthalmoscopic examination disclosed large hyaline masses in both optic disks. The right was elevated 2 D. and the left 1 D. (fig. 1 A and B).

When the visual fields were plotted, it was found that the normal blindspot of the right eye was enlarged and that a small arcuate scotoma extended upward from the blindspot of the left eye (fig. 1 C).

![Fig. 4 (case 4).—(A) right fundus; (B) left fundus; (C) visual fields. Vision was 6/7 in the right eye and 6/6 in the left eye.](image)

![Fig. 5 (case 5).—Visual fields. Vision was 6/6 in each eye.](image)

Case 2.—A woman aged 46 complained of headaches. For many years they had occurred every few months, but had become more frequent during the past four years and constant for the past four months. The neurologic diagnosis was "involutional change in migraine."

On both optic disks there were piles of hyaline bodies (fig. 2 A and B).

Plotting of the visual fields revealed binasal contraction and small, dense arcuate scotomas pointing downward (fig. 2 C).

Case 3.—A woman aged 49 complained of pain in the back. Large uterine fibroids were found to be the cause of the pain, and abdominal hysterectomy was performed. Neurologic examination disclosed no abnormalities except absence of deep tendon reflexes in the legs. There were no visual symptoms.

On ophthalmoscopic examination, hyaline masses were seen on both optic disks; the right disk was elevated 2 D. and the left 1 D. (fig. 3 A and B).

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The visual fields contained arcuate scotomas; the one in the right eye had broken through to the nasal periphery (fig. 4 C).

Case 5.—A girl aged 15 years had consulted her local oculist because for a year she had been having occasional headaches and thought she might need glasses. On examination of her eyegrounds, he suspected the presence of chronic papilledema, and his suspicion was not allayed when he plotted the visual fields and found binasal contraction. Because of these findings, he asked her to seek further advice at a large clinic. Extensive clinical and laboratory tests and a neurologic examination failed to disclose any abnormalities.

Many hyaline bodies were seen in the optic disks on ophthalmoscopic examination. The fundi were not photographed.

Binasal contraction was demonstrated by plotting the visual fields (fig. 5).

COMMENT

These cases illustrate the usual varieties of defects in the visual fields caused by hyaline bodies on the optic disks. There may be enlargement of the normal blindspots and arcuate scotomas, either in the form of small fingers or of large arms breaking through to the periphery, or there may be peripheral contraction, which most often is below and on the nasal side.