CRATER-LIKE HOLE IN THE OPTIC DISC*

BY

REDMOND SMITH

London

CASES showing a crater-like hole in the optic disc accompanied by a field defect have been only infrequently described in the literature. A series was reported by Rosen (1948). The usual features mentioned are well typified in the case reported below.

Case Report

A man aged 44, a property manager, had noticed several years before, when the right eye was affected by a sty, that his left vision was defective. He thought that his left eye had always been weaker than the right and he had worn glasses since childhood. He had never had pain or seen halos and there was no family history of eye defect. His general health was good.

Examination.—The anterior segments were normal and the media clear. The globes were of equal size.

Right eye showed an inferior crescent to the optic disc. Vision was 6/18

$\bar{c} \begin{smallmatrix} -2.00 \\ +3.00 \end{smallmatrix} \times 120$. There was no field defect.

Left eye showed a deep narrow crater in the lower part of the disc into which the retinal vessels dipped. In the depths of the crater the vessels could be seen describing a loop downward as though lining a cystic space.

The lower half of the fundus was considerably paler than the upper. The choroidal pattern was clearly visible as in an albino, whereas the upper fundus was normally coloured (Fig. 1). Vision 6/36 pt.

$\bar{c} \begin{smallmatrix} -0.50 \\ +2.50 \end{smallmatrix} \times 50$. Perimetric examination showed an upper temporal quadrantic defect which was enlarged to loss of the complete upper half of the field on the screen. A curious feature of the field loss was the fact that the quadrantic

FIG. 1.—Drawing of left fundus

* Received for publication September 15, 1952

FIG. 2.—Fields in case of crater-like hole in the optic disc. The Bjerrum-screen field has been transposed on to the perimeter chart to save space.

defect had its apex at the fovea and not at the disc as might be expected (Fig. 2).

The ocular tension remained within normal limits during a 48-hr. in-patient check up.

Discussion

Clinically such cases are usually found accidentally at routine examination. The large field defect is a relatively constant feature although smaller scotomata may occur (Duke-Elder, 1941) and there may be macular changes. A case described by Rosen (1948) had a completely albinotic fundus and an atrophic iris.

The differential diagnosis from glaucoma is made on the localized nature of the pit which is usually in the lower temporal quadrant of the disc and is

surprisingly small in view of the large field defect. In the case described above, it may be that the size of the field defect was partly attributable to the defective pigmentation of the lower half of the fundus. This area could be regarded as a minimal choroidal coloboma.

According to Duke-Elder the pathology consists of an out-pouching of the secondary optic vesicle, the cyst lining containing retinal elements. Mann (1937) points out that the last part of the foetal fissure to close and to acquire full pigmentation is a small area at the lower margin of the disc. She describes two types of ectasia in this region; an intra-neural type which probably corresponds to the crater-like pit, and an extra-neural in which the ectasia is outside the disc edge.

Whereas the intra-neural type usually remains as a small pit, the extra-neural may enlarge to form a cyst presenting the well-known combination of microphthalmia with cyst. There is a case, however, described by Greear (1930) in which the optic nerve itself was much distended by a large cyst.

Summary

A case is described of a crater-like pit in the optic disc associated with a large field defect. It was thought to be a congenital anomaly.

My thanks are due to Dr. Margaret Falconer and Mr. F. A. Williamson-Noble for their kind permission to examine this case and to use the facts here reported.

REFERENCES

- CALHOUN, F. P. (1930). *Arch. Ophthalm.*, Chicago, 3, 71.
 GREEAR, J. N. (1942). *Ibid.*, 28, 467.
 DUKE-ELDER, S. (1938). "Text-Book of Ophthalmology", vol. 2, p. 1266. Kimpton, London.
 MANN, I. (1937). "Developmental Abnormalities of the Eye", pp. 82-102 and pp. 124-127. University Press, Cambridge.
 ROSEN, E. (1948). *British Journal of Ophthalmology*, 32, 465.