BILATERAL SYMMETRICAL RETINAL CYSTS*

BY

D. L. E. PAINE

Shrewsbury

BILATERAL symmetrical retinal cysts without detachment of the retina are relatively uncommon, although probably less so than the number of reported cases would suggest. The present example was discovered on routine examination following an injury to one eye.

Case Report

A man aged 47 was brought to the out-patient department having sustained a severe blow from a spanner wielded by a workmate. The right lens of his spectacles had been broken and fragments of it, enmeshed in blood clot from a laceration of his right eyebrow, were lying in the conjunctival sac. These were removed.

Visual Acuity.—6/60 in the right eye; 2/60 in the left (6/60 with his own glasses).

Ocular movements, cover test, and visual fields to confrontation were all normal. Pupils were equal and active, but showed some corectopia upwards and nasally. The left eye was markedly hypermetropic, but disc and macula were both normal, and examination of the rest of the fundus at this stage revealed no abnormality which might account for the poor visual acuity.

The right cornea had an extensive superficial abrasion, with a deep laceration in the temporal half which reached Descemet's membrane in places, but did not penetrate it. The anterior chamber contained some free cells, but iris and lens were undamaged. A clear fundus view was not possible; no serious intra-ocular damage could be seen. After removal of all possible fragments of glass, atropine ointment was instilled, and the eye padded.

After 24 hours the corneal abrasion had healed and fundus examination revealed a circumscribed area of what appeared to be retinal detachment in the temporal periphery, extending inwards for about two disc diameters. The contours of this detachment were smooth and regular, without folds, and the whole had a rather globular appearance. Its colour was the same as that of the surrounding retina, but the retinal vessels which coursed over it were rather darker than normal. No hole or tear could be found, and a diagnosis of post-traumatic detachment was made. A further examination of the left fundus, however, revealed a similar but slightly smaller detachment in a symmetrical situation, thus making the true nature of the condition apparent (Figs 1 and 2, opposite).

The patient had never had any previous eye trouble though his left eye had always been weak. His general health was good, and there were no signs of congenital anomalies.

Visual Fields.—Small defects in the nasal periphery corresponding to the cysts.

Bjerrum Screen.—Normal blind spots.

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FIG. 1.—Right eye, showing retinal cyst in temporal periphery.

FIG. 2.—Left eye, showing slightly smaller cyst in symmetrical position.

Visual Acuity (with correction):

Right 6/5 with	$\frac{+6.5 \text{ D sph.}}{+1 \text{ D cyl. at } 20^\circ}$
Left 6/24 with	$\frac{+6 \text{ D sph.}}{+2.25 \text{ D cyl. at } 30^\circ}$

Maddox Rod (with correction).—Exo 1 with no hyperphoria.

Maddox Wing (with correction).—Orthophoric with no hyperphoria.

Two months after the accident the cysts had not altered in any way.

Discussion

There seem to be two main theories concerning the mode of production of bilateral symmetrical cysts of the retina.

(1) That they are due to a developmental defect, and are thus congenital in origin (Weve, 1935; Kornzweig, 1940; Roveda and Riva, 1951).

(2) That they are an exaggerated form of peripheral cystoid degeneration of the retina (François and Rabaey, 1953).

Some of the facts brought forward to support the first theory are:

(a) The exactly symmetrical position of the cysts in the two eyes.

(b) Microphthalmos is commonly associated with retinal cysts and, as in the present case, these cysts are more common in small hypermetropic eyes. The retinal cysts of microphthalmos are not, however, altogether analogous because they tend to be herniated through a scleral defect near the papilla into the orbit (Neame, 1920; Mann, 1928).

(c) Retinal folds are common during embryonic life, and may persist in small eyes into adult life.

(d) The lower part of the retina is a later evolutionary acquisition, and is therefore more prone to developmental anomalies. This tendency can be seen in the development of branchial cysts in humans from the primitive branchial clefts.

On the other hand, François and Rabaey have clearly proved that bilateral symmetrical cysts can be caused by the confluence and dilatation of the microcysts of peripheral cystoid degeneration. Furthermore, Teng and Katzin (1953), who studied a large number of normal eyes removed *post mortem* for the purpose of corneal grafting, showed that cystoid changes at the ora serrata are part of the ageing process, and that confluence and/or dilatation of the microcysts is of frequent occurrence. In several of their cases quite large cysts were present in the neighbourhood of the ora serrata; these often showed holes in either the internal or external walls. If a hole should occur in the internal and external walls of the same cyst, it is evident that a retinal dialysis would result. This could account for the frequent association between retinal cysts and detachment of the retina.

Teng and Katzin strongly support the theory, introduced by Ochi (1927), that accommodation is responsible, by reason of the motility which it causes in the neighbourhood of the ora, for the development of peripheral cystoid degeneration. This could provide an explanation for the more frequent occurrence of bilateral symmetrical cysts in hypermetropic eyes, in which accommodation tends to be excessive.

There seems to be general agreement that there is a very strong tendency for bilateral symmetrical cysts to rupture ultimately and cause retinal detachment (Weve, 1935; Shapland, 1944; Stallard, 1946; Duke-Elder, 1949; Leffertstra, 1950). In view of this, early operative treatment has been advocated by many authorities (Goulden, 1935; Ridley, 1935; Stallard, 1946), the operation of choice being a local diathermy application. In the present case, it was decided to keep the patient under surveillance.

Summary

A case of bilateral symmetrical retinal cysts is described. The theories of production of these lesions are enumerated and the unfavourable prognosis noted.

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