RETINAL DETACHMENT AT THE POSTERIOR POLE*

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THE common feature of the cases to be described in this communication is a retinal detachment localized to, or apparently originating from, the region of the macula; most are myopes and some have posterior staphylomata. Cases of central serous retinopathy are excluded.

Case Reports

Case 1, a male, aged 52, had had a right macular haemorrhage about 20 years previously, and for a period of 4 months had noticed deterioration of the visual acuity of the left eye. The right eye showed a posterior staphyloma and advanced macular degeneration typical of myopia; the left eye had a central retinal detachment occupying the area of a posterior staphyloma (Fig. 1). The visual acuity was 3/60 eccentrically in the right eye with -18 D sph., -3 D cyl., axis 90° , and 6/36 in the left eye with -20 D sph. No hole was found. The inset to Fig. 1 is a diagram of the lower edge of the lesion seen with the fundus slit-lamp. There was no detachment of the vitreous.

FIG. 1.—Left fundus of Case 1, showing a retinal detachment without hole, in the area of a posterior staphyloma. Inset is a diagram of the edge of the area as seen with the fundus slit-lamp.

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Case 2, a male, aged 38, had no knowledge of the time of onset of poor vision in the right eye. The visual acuity was 6/60 in the right eye with -17 D sph., -1 D cyl., axis 60° , and 6/6 in the left eye with -15 D sph., -1.5 D cyl., axis 90° . Fig. 2 shows the area of retinal detachment (dark colour); no retinal hole was found. It seems likely that initially the detachment was localized to the central, staphylomatous area which lies within the dotted line in the diagram. The vitreous was detached; its posterior face lay just behind the lens and its main mass was in the lower part of the globe.

FIG. 2.—Right fundus of Case 2. The dotted line indicates the limits of a posterior staphyloma, while the shaded area shows the part of the retina detached.

Case 3, a female, aged 57, had typical macular degeneration of the right eye which had caused poor acuity for one year. A "floater" had been noticed centrally in the left field 3 years previously, followed, a year later, by a "shadow" temporally and deterioration of central vision. At that time no central hole was noted in the detachment which was present. The visual acuity in the right eye was 6/36 with -7 D sph., and in the left eye hand movements with -7.75 D sph. Fig. 3 (opposite) shows the posterior pole of the left eye as seen with the fundus slit-lamp; there is a localized but deep central detachment with a large hole at the macula and a smaller one supero-nasally. The posterior face of the vitreous lay a short distance behind the lens; most of the vitreous had retracted to the lower part of the globe.

Case 4 (very similar to Case 3), **a female, aged 56**, wore a correction right -10 D sph. and left -0.5 D sph., -0.25 D cyl., axis 90° . The right eye had a divergent strabismus. There had been a complaint of "floaters" in the right temporal field during the 6 weeks before attendance; for the same period a black patch had been noticed in the centre of the right field. A hole at the right macula was surrounded by a wide area of retinal detachment which did not reach the periphery: it was limited nasally by the disc but extended to the equator temporally; above and below, the edge of the detached area described arcs between these two points.

Case 5, a female, aged 72, had lost the central vision of the left eye 5 years previously because of a disciform degeneration, and more recently the same condition had developed

FIG. 3.—Left fundus of Case 3, showing the macular region as seen with slit-lamp; in addition to a macular hole, there is another supero-nasally.

in the right eye. The visual acuity was only "counting fingers" in both eyes and she was emmetropic. There was a hole at the left macula and a wide area between the upper and lower temporal vessels showed a retinal detachment, presumably because of contraction of the "subretinal" haemorrhage and exudate which caused the condition. The ophthalmoscopic appearances were similar to those in Fig. 3.

Two further cases may be mentioned although they may well not strictly belong to this series.

Case 6, a female, aged 24, had a wide area of retinal detachment posteriorly in the left eye extending well beyond the disc and macula; infero-nasally it reached the ora serrata between 6.30 and 8.30 o'clock. About 2 years before the retinal separation took place there had been a posterior detachment of the vitreous. The visual acuity was 6/9 in the right eye with -11 D sph., -1 D cyl., axis 180° , and 6/24 in the left eye with -14 D sph., -1 D cyl., axis 180° .

Case 7, a male, aged 59, had a moderately advanced cataract in the right eye. The left eye showed a wedge-shaped shallow detachment, based at the temporal periphery, the apex of which extended just nasal to the macula; the vitreous showed only a postero-superior detachment. No hole was present in either retina. The visual acuity in the left eye was 6/6 with -5.25 D sph., -1.5 D cyl., axis 65° .

Discussion

Cases 1 and 2 were seen for the first time almost 2 years ago; their discovery stimulated a careful search of the central area of the fundi of high myopes and others, but it has been possible to add only five more cases. It is hoped that the publication of this paper may result in a wider search. However, it must be admitted that this new syndrome of a retinal detachment limited to, or originating from, a posterior staphyloma and without a hole

is probably rare. Indeed, the retina in the area of a posterior staphyloma normally seems to be very reluctant to become detached, especially when choroido-retinal degeneration is marked. It is also necessary to admit that final certainty about the absence of a hole in the retina is impossible. The retina near the disc was carefully searched as being a likely site for holes which would be difficult to see. This form of detachment may be another cause of deterioration of central vision in high myopes, but choroido-retinal degeneration probably precedes it.

Posterior annular detachment of the vitreous with, occasionally, a corresponding ring of retinal detachment has been described by Adamantiadis (1951) and Adamantiadis and Rangabi (1950, 1952). Their cases do not seem to resemble those described in this paper.

Vail (1941, 1946) described two eyes in one patient, which had *peripheral* scleral ectasias overlying retinal detachments without holes. Later Vail (1949) described a series of similar cases in which six of ten eyes had retinal tears.

The findings in Case 2 suggested that a spread to the periphery of the primarily central staphylomatous detachment might account for those cases of simple detachment in which no hole can be found. Accordingly, a search was made of the records of the Detachment Clinic at the Institute of Ophthalmology. To this clinic are referred for assessment cases from the surgeons of Moorfields Eye Hospital and other London hospitals; it is very probable that especially difficult cases tend to be referred, so that one would expect a very high proportion of the hole-less detachments occurring in these hospitals to be included in the Clinic's records. Very few cases of simple detachment in which no hole was eventually discovered were to be found in the records; the majority of them were aphakic and their fundi were difficult to see, or else they had total detachments with retinal folds which might easily have hidden holes. Cases 5 and 6 were discovered in the search of the records.

The mechanism of these detachments is not easy to explain. It is generally held that a hole at the macula may exist without a retinal detachment (Duke-Elder, 1940), and conversely, as for example in Cases 1, 2, 6, and 7, a posterior detachment can exist without any (macular) hole. The evolution of these posterior detachments is probably different, then, from that of the vast majority of peripheral detachments. Even detachment of the vitreous in the area was not regularly present. The likeliest proximate "cause" is the central choroidal and retinal degeneration of myopia which must alter the ability of the two main retinal layers to adhere together; local conditions in Cases 1 and 3 must have bound the two layers together at the edge of the main area of degeneration, thereby preventing spread of the detachment to the periphery. In some of the cases, a localized staphyloma almost certainly contributed to the production of the detachment; in others a more diffuse staphyloma may have been present, though it was not obvious.

One case which is now under observation may yield useful information; oedema is present around the macula but neither a hole nor detachment exists. The visual acuity in the left eye is 6/12 with -7 D sph. No detachment of the vitreous can be seen. In the right eye, which has had a successful operation for peripheral detachment, the corrected visual acuity is 6/6. The clinical appearances are not those of central serous retinopathy.

Differential diagnosis of retinal detachments localized to the central area is important; the cause is less likely to be "simple" when the eyes affected are not myopic. A patient probably not in the category described in this paper, who has recently been examined, has a small, flat, somewhat pigmented area just temporal to the left disc and a detachment round the macula. The visual acuity is reduced only to 6/18. The diagnosis lies between malignant melanoma and choroiditis, probably the former.

Summary

A retinal detachment, without hole, localized to the area of a posterior staphyloma in a highly myopic eye is described (Case 1, Fig. 1). Case 2 (Fig. 2) had a similar condition but the detachment had spread to the periphery inferiorly. Cases 6 and 7 (both myopic) had central hole-less retinal detachments extending to the periphery in one sector. Case 4 had a detachment over a wide area posteriorly, without staphyloma, and a hole at the macula. Case 3 (Fig. 3) had a very localized central detachment with two holes, one at the macula; there was much underlying "myopic" choroidal degeneration. Case 5, an emmetrope, had a central detachment with a macular hole, following disciform degeneration of the macula.

It is suggested that the degeneration commonly seen at the posterior pole in myopic eyes is the main factor in causing these retinal separations, since neither holes nor even detachment of the posterior vitreous were regular findings; a posterior staphyloma played an important part in some cases.

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