

# Detachment of the Retina

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Two distinct forms of detachment occur; one, which is seldom met with, in which the hexagonal layer is separated from the choroid; the other in which the retina is detached from the hexagonal pigment layer, which remains *in situ*. In the former case visual acuity is diminished, but by no means lost over the detached area, since the hexagonal layer continues to nourish the outer layers of the retina, while the inner layers are nourished by the fluid which circulates throughout the vitreous. In all cases of detachment hyperopic astigmatism becomes apparent over the detached area because every millimeter of separation requires at least three diopters of plus power to correct it. The astigmatism is still more pronounced, and so irregular that no lens can correct it. We need only consider the second form, since the first one is exceedingly rare: I have only met with two or three cases in all my practice.

Detachment may frequently follow a blow on the eye, or even a fit of coughing or retching as in sea-sickness. I have seen a case of detachment consequent upon a fall during gymnastic exercises. Loss of vitreous from any cause may readily lead to a detachment, and even cutting through the cornea for an iridectomy has been known to produce it by the sudden release of pressure caused by the escape of the aqueous. High myopia, owing to the hyalitis which so frequently accompanies it, is a common cause of detachment. It is one of the unfortunate sequelaë that one has to warn such patients against. In fact any severe inflammation accompanied by exudates into the vitreous may bring about detachment.

Syphilis, so prominent a factor in many deep-seated eye diseases, is undoubtedly responsible for many cases, and detachment is occasionally met with during the course of such other diseases as dropsy, the albuminuria of pregnancy, Bright's disease, rheumatic fever, etc. The patient is usually myopic to begin with, or, at any rate rarely hyperopic, and the ocular tension is subnormal.

The retina may be detached in two ways: first, by being pulled away from its bed, by the shrinking of the vitreous, the formation of false membranes, or bands of new formative tissue, such as we find occurring in hyalitis, and cyclitis; or lastly as the result of hæmorrhages in front of the retinal vessels, and their occasional sequel,

namely retinitis proliferans: or secondly, the retina may be pushed away from its bed, as the result of hæmorrhages in the choroid, together with the formation of exudates and lymph accumulations during albuminuric retinitis, and other forms of deep-seated inflammation.

## Ophthalmoscopic Signs

As a rule detachment takes place suddenly and without warning. The patient wakes up in the morning, and notices that part of his field of vision is cut off from one eye or else a cloud appears in front of the objects before him. In slight cases of detachment or in such cases where the detachment has just commenced, ophthalmoscopic examination shows a series of faint rippling in the fundus arranged in parallel lines, closely resembling the appearance of a sandy beach when the tide is running out. In more advanced cases, the retina appears as a dirty-looking grey membrane, sometimes it is nearly transparent, while in old cases the retina is bleached and appears as an opaque white crumpled membrane, especially at the top of the folds. The retina is stretched into wave-like folds, and the vessels on it have no bright streak, but are of a dull chocolate colour and very tortuous.

Since the retina is pushed forwards into the vitreous, the detachment should first be examined by the indirect method, that is to say by means of the long-focus mirror, or otherwise it might be easily overlooked. In order to see all parts of the retina, the focus must be adjusted by means of convex lenses behind the mirror, assuming, of course, that the patient is emmetropic. Moreover these lenses will require changing for each part of the retina in turn.

Sometimes the detachment is so faint that it can only be seen at some particular angle, or it may be limited to a particular ridge. Should there be any fluid behind the detachment one will notice a slight trembling of the retina at that spot. Sometimes a hole or rent may be perceived. Perhaps the most characteristic signs of all are the dark chocolate colour of the retinal vessels, and the absence of the light streak. The whiter the folds the older will be the detachment. In the earlier stages the retina still keeps its transparency, and the grey colour is more or less wanting.

The detachment may begin either above the disc or below. The tendency of all detachments

is to increase in size and prominence. It is often the case that a detachment above the disc will force its way downwards by reason of gravity, and bulge forwards. This bulging is very apparent when focused.

The macula as a rule is not involved at first, but the central vision is often obscured by a fold of the retina covering it. When this occurs the vision becomes greatly reduced. Very often on careful focusing vitreous opacities and gauze-like membranes can be observed. Should the macula be involved, it will appear bright cherry red, surrounded by a hazy whitish zone, just as is the case in embolism of the central artery. Since the retina is bound down both at the disc and at the periphery, the retina is liable to be torn near, but never at these parts. No amount of force can separate the retina from the disc.

When the detachment is due to a blow or concussion, there is a good chance of partial recovery, but when due to other causes above mentioned, temporary benefit is all that can be hoped for, and even when the treatment has restored the retina to its normal position, relapses almost invariably occur, finally ending in blindness over the detached area, and later on it may spread over the greater part of the field.

### Possible Causes of Detachment

Detachment is frequently produced by exudates, serous effusion, or hæmorrhages, which push the retina forward, but a great many cases are undoubtedly produced by contraction of the vitreous in places, either from the organisation of exudates, or from a fibrillar thickening or condensation occurring in its structure, or else from the formation of a thin false membrane on the surface of the retina, whereby the retina is first torn, and then pushed away from its bed by the percolation of fluid underneath. This fluid always tends to accumulate behind the retina, and one of the objects of the surgeon is to promote its escape by natural means by keeping the eye fixed in one position, the patient being strictly confined to bed for a week or more, or by retinal puncture through the most prominent part of the detachment. Often this can only be done by first dividing one of the muscles so as to enable the eye to be rotated sufficiently to get at this spot.

Another method which I am greatly in favour of, and have had several successes with it, is to make a scleral puncture behind the bulge, into the cavity formed by the fluid, and then after letting out all the fluid possible, to insert the point of a galvanic cautery through the puncture and cauterise the retina and sclera at that spot. By this means an inflammatory adhesion will be

produced there. If this can be done at more than one spot, there is a fair chance of recovering useful vision, indeed I have on one or two occasions recovered nearly all the vision in that eye. But as a rule the results are exceedingly disappointing. Unfortunately whatever treatment is carried out, the exciting cause still remains (unless it has been due to a blow or shock) and as this cannot be got rid of, relapses usually occur. When the detachment is due to a violent blow or to a fit of coughing, the prognosis is good, and the retina will very often return to its bed of its own accord, especially if the fluid behind be evacuated.

### The Benefit of Tinted Lenses

In the other class of cases, the favourable results tabulated by some surgeons are apt to be misleading, since they are recorded too soon after the operation. I cannot boast of more than six per cent. of my cases which have permanently benefitted by an operation. Is there then no hope for the unhappy patient? There is.

I discovered the fact that the wearing of spectrum-blue goggles following certain directions increases the field of vision and also the visual acuity to a surprising extent, the areas extending in some cases from a mere fraction of the field to nearly the normal boundary, and the vision has been increased from perception of light (P.L.) to 6/18 or 0.33. I obtained an increase of the field in 35 out of 42 cases so treated. I have never published my results which occupy about forty pages of manuscript, since I never obtained positive proof that the retina went back to its original position. Nevertheless the fact remains regarding the improvement of vision and the remarkable increase of the visual field. The spectrum blue glass cuts off both ends of the spectrum, those rays longer than the "D" line being entirely absorbed, while all the blue, green and green-yellow rays come through.

**Detachment of the retina is always a serious condition. Optometrists seldom see these cases until after the Ophthalmologist has done all he can do.**

**We would suggest that such cases may be benefitted by the following Syntonic prescription:- L- $\mu$ 0. If improvement becomes apparent after ten sessions then alternate the  $\mu$ 0 one session with L- $\alpha$ 0 at the next session and continue alternating.**

**CAUTION:- L- $\alpha$ 0 should not be used longer than four minutes in the beginning to prevent fatiguing an already weakened retina.**