Thesis by

Stanley Riseley
107 Guilford Street
Russell Square
London W.C.
Detachment of the Retina. Its Pathological Anatomy, causation and treatment cases.
Detachment of the Retina.
Its Pathological Anatomy, Causation, and Treatment. Cases.

The Retina is a thin membrane which contains the expanded terminations of the optic nerve. It lies internal to the choroid coat of the eye and external to the hyaloid membrane of the vitreous humour. It is continuous behind with the optic nerve, gradually diminishes in thickness from behind forwards from about 1/30 to 1/200 of an inch. It reaches nearly as far forwards as the ciliary ligament and then terminates in a jagged margin, the ra serrata. The membrane is semitransparent in the fresh state. In the posterior part of the retina corresponding to the Axis of the eye in which the sense of vision is most acute is the yellow spot with a depression in the centre called the Fovea.
centralis. The Retina here is very
thin it appears darker than the
rest due to the choroid being seen
through it. About 3/4 of 1/10 of an inch
internal to this is the optic disc,
this is where the optic nerve
enters the eye, this is the blind
spot of the eye + it is the only part
of the retina from which the
power of vision is absent.
The Retina simply lies upon the
choroid except at the optic disc
+ ora serrata where it is attached
to it and it is kept in its position
there by the pressure of the vitreous
body upon it.
Extracts from Priestley Smith's review of Erich Hendensson's Paper on Detachment of the Retina; an investigation of its Pathological anatomy and Pathogenesis etc. (Ophthalmic Review Vol 1. 1888).

Detachment of the Retina, as shown by Leber, in general is caused not by primary exudation from the choroid but by traction of the shrinking vitreous. The show not only the shrinking of the vitreous but the effect of this upon surrounding structures including rupture of the retina. The vitreous undergoes a process of chronic thickening without loss of transparency. Wavy fibers are developed in the substance and its volume decreases, the space so produced is filled posteriorly with serous fluid, but the anterior portion of the retina which is specially
adherent to the shrinking vitreous is drawn inwards by it. The change in the vitreous is allied to senile sclerosis in other lesions combined in many cases with cell proliferation. It is due to a chronic inflammation of the uveal tract.

In 1816, the prevailing view was that the primary exudation, either from the choroid or retina, was the cause of the detachment. In 1854, Graefe and Ault said the primary cause was probably due to hemorrhage or a serous exudation from the choroid. Stellwag pointed out in opposition to this that a healthy vitreous would not permit of the collection of fluid beneath the retina and that the mobility of the detached portion implies the presence of a layer of fluid on each side of it. To him belongs the credit of
showing that previous changes in the vitreous are predisposing causes of detachment of the Retina.

Heinrich Muller put forth the theory that detachment of the Retina is produced by shrinking of the vitreous body. He showed that such shrinking is caused by the production in the substance of the vitreous of bands fibres originating in cataractins and extravasations and that the shrinking may have two results: It may separate the hyaloid membrane with the Retina from the choroid. In more favourable cases it may separate the hyaloid from the retina producing only a detachment of the vitreous instead of a detachment of the Retina. Iwanoff found in many eyes of old people the vitreous shrunken, but not liquefied separated.
in the posterior half of the eye from the retina leaving an
interstice which was filled with fluid.
He also pointed to such detachment of the vitreous as a precursor
and companion of Retinal detachment. He found it in
three myopic, much constricted
eyes which had sustained no
injury and in these cases
attributed it to the distension
of the outer tunic.
Perforations of the detached retina
was at first supposed to be
attributable to haemorrhage or
the excessive pressure of the Sub-
retinal fluid.
Hansen refuted this and pointed
out that the mobility commonly
to be seen in the detached portion
excludes the idea of an inequality
of pressure on the two sides of
the membrane.
De Wicker advanced the question
further by pointing out that, in the absence of perforation, the quite sudden occurrence of a large detachment such as is often met with is inexplicable, for it would imply a sudden disappearance of a corresponding portion of the vitreous, be urged that the rupture occurs first and leads directly to the sudden detachment of a portion of the retina, some of the fluid which was previously collected between the retina and the detached vitreous, passing through the aperture in the retina and so raising it from the choroid and causing it to hang between two communicating layers of fluid.

As regards pressure changes, Schnabel said that intraocular pressure is subnormal in every case of fresh detachment and that the reduced pressure lends
inner role is the essential cause of separation of the Retina from the Choroid and leads secondarily to an effusion of serous fluid between these two membranes.

In support of this theory the "Aspiration Theory," as Anderson terms it, Schnabel points out that the anterior chamber of the eye is often much deepened in these cases, and this he looks upon as proof that the retinal pressure is diminished. This explanation fails because many observers showed the tension, though sometimes reduced, is quite normal in many fresh detachments. Leber in 1882 saw that sudden occurrence of detachment of the Retina too took place with sudden loss of sight in a previously acutely portion of the retina and this he explained,
as De Wecker also did, by
suspecting that the sudden
occurrence of a rupture in the
retina permits the outward
passage of fluid previously
accumulated on its inner
surface.
In 14 out of 27 cases he had been
able to actually see the aperture
in the Retina
He experimented on the behaviour
of aseptic fragments of metal
introduced into the Vitreous of
Rabbits and he found rupture
and detachment of the Retina
due to shrinking of the Vitreous.
He also got the same results
after injection of sterilised Salt
solution.
He demonstrated structural
changes in patients with high
myopia with detachment.
The vitreous body was detached
throughout the posterior half of
the Globe, it presented a finely
fibrinous consistency and in shrinking had dragged the vitreous from its normal position. In evidence of traction from within which ruptures the retina he found the margins of the aperture drawn inwards in all cases never outwards. The three cardinal points in Leber's position therefore are:—

I. Spontaneous detachment of the retina occurs suddenly. It occurs without noticeable changes in the intraocular pressure.

II. It is caused by the shrinking of the fibrinous vitreous, which tears the retina, and in this way leads to its detachment.

Walter, in 1886, analysed 300 cases of Retinal Detachment observed by Horner, with regard to their Etiology. He showed the connection
with progressive myopia, and also a connection with congestive and haemorrhagic conditions of the retina and choroid: in some cases no etiological conditions could be made out. He concluded that subretinal haemorrhage is the starting point in a considerable number of cases.

Henderson admits the connection between haemorrhagic accidents and detachment of the retina but denies that they are due to subretinal effusion and shows that in Anaemia, chlorosis and atroial sclerosis you may get haemorrhage into the vitreous which may clear up and be absorbed and leave no mischief behind, while the changes in the Vitreous may cause shrinking to traction on and detachment of the retina and Rupture.
Statistics show that detachment of the Retina increases in frequency with advance of life due to degenerations in the vascular system. Degenerations of the vessels of the uveal tract impairs the nutrient supply of the vitreous and may lead to shrinking of the vitreous and detachment of the Retina.

Relation of Myopia to Detachment of the Retina.

von Graefe first noted it. He attributes it to extension of the Sclera and choroid and consequent loosening between the choroid and the Retina. Sonders showed that myopic eyes are much more predisposed to detachment of the Retina than others. Statistics of Hartman and Schleck show detachment in
in three per cent in a series of 4,000 myopic eyes.
Hodkinson showed that in a total of more than 1,100 cases of spontaneous detachment of the Retina myopia was present in nearly 80 per cent of cases.

Iwanoff says that in Myopia the vitreous does not stretch with the tunicis of the eye and that detachment of the vitreous leads to detachment of the Retina.
Deber says the vitreous is not merely left behind but it also shrinks through changes in its own substance. This he attributes to choroiditis and the predisposition of myopic eyes to detachment of the retina he attributes to the common presence of choroiditis in myopic eyes.
Statistics show the choroiditis is present in many myopic
those eyes especially in with a high degree of myopia which have not been overused for near objects. It is shown that in these severe cases where choroiditis is well marked, detachment of the Retina is particularly apt to occur.

The above supports Leber's view that the Retinal detachment met with in myopia is due to choroiditis, the sequence of events being:

I. Choroiditis

II. Effusion into and ultimate thinning of the vitreous

III. Separation of the vitreous from the Retina with secondary exudation between the two

IV. Rupture of the Retina by the traction of the Shrunken vitreous

V. Escape of fluid
outwards through the aperture
loosening and separating the
Retina from the chorioc.

The Author discusses the occurrence
of Retinal detachment in
connection with Retinitis
Abluminacea
In 12 cases 7 were female and
5 males; he found that usually
both eyes are affected namely
in 10 cases and two in one
eye only.
In pregnancy detachment of the
Retina runs a favourable course.
In four cases, complete replace-
ment took place in 11 days,
6 weeks, several months and
two years after delivery respecti-
ely.
Restitution of Vision, sometimes
complete, accompanies the
replacement in these cases.
this is ascribed to Malnutrition
of the Vitreous which recovers.
In choroidal tumours the detachment is noted to be larger than is necessary, this is due to changes in the vitreous and consequent shrinking tension.

This is usually not increased unless other causes can account for it than detachment of the retina. In the majority of recent cases it is normal, but later usually becomes subnormal.

In many cases opacities in the vitreous, smoke-like or darker when due to haemorrhage, are seen ophthalmoscopically.

The situation and extent of the detachments are various. In many it may be total, obscuring the entire fundus. The most frequent situation is downwards, next upwards.
Rupture of the Retina was discovered in one third of the cases & the most frequent situation is upwards and outwards. The edges are never rolled outwards.

It seems evident the Rupture occurs before or simultaneously with detachment and when not seen is due to the media, or to its peripheral position.

The Choroid showed ophthalmoscopic changes in 32 eyes of 126 examined. Exudations in 16 and irregularity of pigmentation in 16 more.

Staphyloma Posticum of large extent was present in twenty myopic eyes. The myopia varied from 3 to 8 dioptres.

Refractions was determined in 97 eyes
Myopia present in 58
Emmetropia in 26
Hypermetropia in 13.

The disturbance of vision was sudden in 64 eyes, gradual in 31, and in 31 the manner of occurrence could not be ascertained in the 126 eyes examined.

Detachment of the Retina has been met with though rarely in eyes with glaucomatous excavation of the disc and high tension, the author holds that there is no causal relation between Glaucoma and detachment of the retina although he holds that inflammatory changes in the uveal tract are concerned both in the glaucomatous process and in that of retinal detachment.
The causation of detachment of the retina is a matter for discussion, it has been held to be due to changes taking place external to the Retina. That the changes in this situation are the primary cause, these changes may certainly be the primary causes and in cases of hemorrhage, exudations and neoplasms under the Retina of course the retina is pushed forwards, but supposing the vitreous to be healthy it would be impossible for the Retina to be displaced forwards, and therefore when detachment does occur it is practically certain that changes must have taken place in the vitreous body and this has been satisfactorily demonstrated in a large percentage of cases the vitreous may show opacities and inflammation.
may have taken place in its substance which will lead to its shrinking and the accumulation of fluid between it and the Retina. But the anterior portion of the retina is usually adherent to the shrinking vitreous and is drawn in by it and then a rupture of the retina takes place and the fluid passes through the rupture and thus the retina comes to hang freely in between two layers of fluid which are in communication through the Rupture in the Retina.

The prevailing view early in the century was that the detachment was due to a primary exudation from the choroid of retina and later it was supposed to be due to a haemorrhage or nervous exudation from the
observed, then it was shown by Stellwag that the healthy vitreous would not allow this and that the mobility of the detached part necessarily implies a layer of fluid on each side of the detached part. And he first showed that previous changes in the vitreous were predisposing causes. The shrinking of the vitreous may separate the hyaloidal with the retina from the choroid while in more favourable cases the retina may be left behind. Then Ivanoff found in many eyes of old people the vitreous thinned and separated in the posterior half of the eye from the retina and a layer of fluid between

Perforation of the detached retina was supposed to be
due to haemorrhage or to excessive pressure of the subretinal fluid. This was disputed because the mobility of the detached part does away with the possibility of inequality of pressure on the two sides of the detached retina. De Wecker showed that in the absence of perforation the sudden occurrence of a large detachment is inexplicable for it would imply a sudden disappearance of a corresponding part of the vitreous, therefore he concluded that rupture occurs first and leads to the sudden detachment and the passage of the fluid between the retina and detached vitreous through the rupture and raising of the retina from the choroid. The tension was supposed to be subnormal in fresh cases of
detachment but this has been shown not to be the case because several observers have shown that the tension is usually normal in fresh detachment unless other things are present to account for abnormal pressure but it is admitted that the pressure may become subnormal after a time.

It seems certain that rupture of the retina always occurs in sudden detachment of the retina and loss of sight; this was shown by Leber and de Wecker. In 14 out of 27 cases examined the rupture was actually seen and where not seen it is probably due to its peripheral position or minuteness. He made experiments on the eyes of rabbits on the behavior of aseptic fragments of metal introduced into the vitreous and found that rupture and detachment
of the retina occurred due to the shrinking of the vitreous. He also got the same results after injection of sterilised salt solution. And in evidence of traction from the shrunken vitreous he always found the margins of the aperture of the rupture drawn inwards never outwards. These observations tend to show that the detachment is caused by changes on the vitreous side of the retina and that the rupture occurs because of the traction on the retina by the shrinking vitreous because if it was due to changes on the other side of the retina the margins would be turned outwards. But why, in such cases as haemorrhage or exudation or neoplasms on the chorioidal side of the retina, should not the fluid on the side vitreous push the retina outwards
and hence rupture occur in that direction and the margins of the aperture be turned outwards? This can be explained thus:—The vitreous in all cases of detachment seems to undergo changes due to disturbance of the blood supply and this causes it to shrink and draw the retina inwards and then the pressure of the fluid between the retina and vitreous causes the rupture and even then why should the margins of the aperture be turned inwards, because it seems generally admitted that the fluid passes outwards and it then seems to me that the margins of the aperture would be pushed in front of the fluid, therefore I do not see what difference the way the margins lie can make and why it should be inwards and not outwards.
as seems generally admitted. and why should the inward direction of the margins help us to conclude that it is the changes in the vitreous that cause the rupture. The only thing I see against the margins being turned outwards, is that the retina is lying against the firm choroid or neoplasm etc. Hence when the rupture occurs the fluid can get through the rupture between the retina and choroid and thus push the retina inwards. While there is nothing to prevent the fluid passing outwards, the choroid etc. will prevent the margins of the rupture being pushed outwards.

Andersen admits the connection between haemorrhagia accidents and detachment of the retina, but denies that it is due to the subretinal effusion and
shows that in Anaemia the
you get haemorrhage + effusion
into the vitreous which may
clear and leave nothing,
while the changes in the vitreous
may cause shrinking and so
traction on and detachment
of the retina and rupture.
This also points to the probability
of vitreous changes causing the
detachment and rupture of Retina.
It is stated the detachment of the
retina increases in frequency
with age. I have seen several
cases of detachment of Retina
and I have usually had to deal with
the lesion in young persons.
Myopia is supposed to bear a
relation to detachment of the
retina. This is stated to be
because the vitreous does not
stretch with the lenses of the
eye and Henderson has shown
that in 1100 cases examined
Myopia was present in
80% of cases. According to what has been discussed above, simple myopia will not account for detachment of the Retina because, taking it for granted, that changes in the vitreous and rupture of the Retina are necessary for the production of detachment and that the detachment is produced by traction of the shrinking vitreous, if none of these things are present as in simple myopia, why does detachment of the Retina occur? It does not occur in congenital cases of simple myopia because there we have the eye elongated and probably there is more vitreous present than in an emmetropic eye. In cases of acquired myopia when detachment occurs there are other things present to account for detachment as in one
case had where the patient was fond of boxing and so got blows on the eye, which being more prominent than normal was more exposed to injury and so probably changes were set up in the vitreous which lead to the detachment.

Leber believes that the vitreous thins due to changes in its substance in myopia, and that he ascribes to choroiditis which he says is common in myopic eyes. As statistics show that detachment is very apt to occur in choroiditis this supports Leber's view as in choroiditis you get effusion and exudation into the vitreous, traction on the Retina by the shrinking vitreous and separation of the Retina from the choroid.

This sequence of events points
again to changes in shrinking of the Vitreous as the cause of detachment of the Vitreous Retina.
In choroidal tumours the detachment of the retina is larger than is necessary to allow of the bulging inwards of the tumour, this is attributed to changes in and shrinking of the Vitreous again.
Rupture of the Retina has been discovered in detachment in about one third of 126 cases examined and the usual situation is up & out. It is admitted that rupture always occurs either before or simultaneously with the detachment and when not visible is due to the media or its peripheral situation.
The most frequent situation for detachment is downwards next upwards, when it occurs
upwards it is very liable to spread downwards due to the fluid falling by gravity.
Staphylocoma posticum often occurs and other choroidal changes, in one case I had a large posterior staphylocoma was present.
Detachment of the Retina may be found in Emmetropes myopes or hypermetropes, and though it may occur in eyes of any refraction, in 50 per cent about of the cases myopia seems to be present and it apparently occurs less frequently in hypermetropes than Emmetropia. In most of the cases I have seen myopia has usually been present.
The general conclusions to be drawn as to the causation of detachment of the retina are:

I Traumatic causes such as blows on the eye or punctured wounds of the Sclerotic. The cause of the detachment in the latter cases is due to dragging on the retina in the course of healing.

II Myopic eyes with choroiditis are those most subject to detachment of the retina and in these cases there are secondary changes in the vitreous which causes its shrinking & traction on the retina, rupture and detachment.

III In non-traumatic detachment it is held that disease of the ciliary body and choroid, is the primary cause, this leads to changes in the vitreous which shrinks away from the retina but is attached but in places and fluid lies between
the retina and vitreous. Then the traction on the retina by the shrinking vitreous causes a rent in the retina and hence fluid passes through and we get detachment of the Retina. It appears certain that a rent occurs in the retina, always, in detachment, and that it occurs either simultaneously with or before the detachment.

Vicinus is affected to a varying degree in detachment of the Retina, and is affected in proportion to the amount of detachment. The field of vicinus becomes limited depending upon the situation of the detachment. A patient may complain that he only sees certain parts of objects looked at, for instance, in looking at a person, the body may be seen while the head cannot be seen. In taking the
Field with the perimeter, a certain amount is found to be obliterated corresponding to the extent of the detachment. The examination of the field of vision helps us much in the diagnosis of detachment of the Retina. For example, in one case I had I found a large detachment and on taking the field I found it totally cut off in the lower part. In another case where the detachment was slight I got a very pretty field with a spot on corresponding to the situation of the detachment.

The most frequent situation for detachment is upwards at first and then it falls due to gravity of the fluid and the part at first detached then becomes reattached. The retina always remains attached at
the disc and ora serrata.

Objectively in detachment of the retina may be found:—
the anterior chamber may be deepened and except in recent cases the tension ascertained by the fingers is usually subnormal.

In examining the eye with the ophthalmoscope by the direct method the retina will be found in various conditions according to the amount of the detachment. In simple diagnoses the retinoscopy mirror may be quite sufficient but for accurate investigation, of course, the direct method of examination is the best. Except in recent cases the detachment appears opaque and white because the retina has lost its transparencey and the pigment epithelium is left attached to the choroid.
The detached part is usually
Within the focal length of the eye and the retinal vessels are seen running over it, they appear black. In consequence of the absorption of the transmitted light, and on movement of the eye, the retina is seen to move with a wave-like motion when there is fluid present. The detached part is usually best seen with plus glasses as this part of the eye is usually much more hypermetropic than the rest of the fundus. Of course, where a large amount of myopia is present, the detached part may be best seen with a minus lens.

**Prognosis.**
This should be at any rate guarded. It is never good and in most cases it is bad because the disease is more liable to increase than get better. In
In my opinion the most that can be hoped for is that the disease with care will set no worse. In one case I had the patient was seen by several ophthalmic specialists the detachment was suddenly discovered how long it had been present is not known; the patient was kept at rest in bed in a dull light for sometime and the disease remained stationary and now he is allowed to play games but not to read or use his eyes for near objects more than is absolutely necessary and the disease is not progressing.

Treatment.

This is most unsatisfactory, improvement, if it does take place, seldom remaining permanent. At Moorfields the treatment is usually practically nil. A bad prognosis is given,


and the patient is told to rest in bed as much as possible, tied up with atropine, and potassium Iodide may be given. Other forms of treatment are usually no use and may do more harm than good.

The treatment in those cases which are caused by exudation of fluid beneath the retina, is with the object of getting absorption of the fluid. Thus hypodermic injections of pilocarpine may be used to induce diaphoresis and purgatives and a pressure bandage applied while the patient is to be kept at total rest in bed. If this does not good evacuation of the subretinal fluid by puncture of the sclera may be tried. The puncture should be made where the detachment is most marked and the fluid evacuated. Then the patient should be kept.
at rest in bed and a light pressure bandage applied. In recent cases a good result may be attained by the retina becoming reattached but good results are rare.

When the retina is detached by means of a neoplasm, the treatment is enucleation of the eye ball.

A bold form of treatment is the injection of tincture of Iodine into the vitreous in between the choroid and retina in the hope that the retina may become attached by adhesive inflammation. It seldom does good and may do harm. Thus the only thing to be hoped for in the treatment at present is that the detachment will not increase. Therefore keep the patient at rest in bed in a subdued light. This has, of course, a tendency to impair the general
health, so that must be carefully attended to. Atropine may be used twice a week, or more frequently, to keep the eyes at rest, and a light pressure bandage may be applied. Of course this form of treatment will not do much good, a slight improvement may be hoped for; at any rate the total rest will probably keep the detachment from increasing. Iodide of Potassium may also be used in the hope that some absorption of the fluid may take place.
Cases.

Case I.

S. R. Male, aged 18. A strong healthy lad with a very good family history. He came to me complaining that one day while playing lawn tennis he noticed he was unable to take back hand shots which he had not noticed before, and on closing his right eye he found that everything with his left eye appeared misty and in a room he could at times count the number of people present with his left eye but could not distinguish who they were. He came to me and on testing his vision and refraction found him wearing -4.5 spheres in both eyes and he was under atropine and both pupils well dilated. With the right eye his
Vision without a glass was 5/60 and a - 4.5 sphere improved him more than any other glass with that he could see 4/6 four letters. After what he complained of I was surprised to find that his vision in the left eye without a glass was 6/12 but that this he had to turn his head slightly to the right, or making him look straight at the test type he could not see 6/60 and all things in the room appeared misty. The vision was not improved by glasses. I took him to the dark room and did a retinoscopy and found his Refraction as follows:

- Right Eye, Vertical - 4.5
  Horizontal - 4.5
- Left Eye, Vertical - 3.5
  Horizontal - 3.5

On examining his right eye ophthalmoscopically, the disc appeared normal and there was no sign of progressive myopia.
and the fundus generally appeared healthy and normal and there was no Posterior Staphyloma.
In the left eye the disc was the same as in the right but below and around the macula region white lines and dots were seen giving the retina a wavy appearance and detachment of the Retina was diagnosed.
The right eye was covered up and a straight line drawn and the patient was asked to copy it as near as possible and he drew a wavy line longer than the one he was asked to copy. He was then tested to see whether he had monocular or binocular vision and it was found, the red and green glasses being used and red and green letters, that, in the distance, he only read the red or green letters according as the red or green glass was in
front of his right eye. His field of vision was taken with the perimeter and a scotoma was found corresponding to the disturbance of the retina. The urine was normal and the general health good. The cause was sought. There was no myopia in the family except in the patient's case. He was always active and played football and lawn tennis and was a good boxer. At first he could remember no injury to the eye which attracted his particular attention, but, on thinking, he remembered having a blow on the left eye with a tennis ball about a year previous. The vision of 6/12 with the left eye was considered to be due to effusion under the retina bringing the myopic eye nearer emmetropia and thus improving the vision.
The patient was kept under observation and continued to use atropine, and a week after a slight detachment was found in the right eye in the upper and nasal side of the fundus. This was only slight and near the periphery of the fundus, and the eye had been only casually examined previously as no complaint was made in respect to that eye.

The question was:—Are the lesions of old standing or recent? This was difficult to settle especially in the right as the vision was not affected at all, at any rate it was not of more than two years standing as then his glasses were prescribed and he saw perfectly with both.

The patient was ordered to bed, he was kept in a subdued light and he wore smoked plain glasses, and he was kept under atropine.
At the end of three weeks no change was observed in either eye. The patient was allowed to resume his correcting glasses and go about without using his eyes more than necessary and still no change seemed to take place. He then took the law into his own hands and, although he does not read much, he does everything else in an ordinary way and his eyes seem better no worse.

No hyalitis or other disease was found except the detachment which being slight was probably due to a blow received and a slight effusion under the retina and the hope is, that as the detachment + effusion are slight that the latter may become absorbed in time and leave the eyes normal except for the Myopia.
Case II.
Family history good.
She came to see saying she had broken her glasses and wanted new ones for sewing and reading and that she could see well in the distance except for specks appearing now and again in front of the right eye.
I took her vision and found it was 2/9 +2.16 in each eye and there was a manifest hypermetropia of +.5 D in each eye which gave her 6/6. Nothing of any note could be made out with the undilated pupil except a slight hyalitis in the right eye and as +4 D gave her J1 comfortably in both eyes, these glasses were prescribed.
A week later she returned time saying that since she had had the glasses, she had found her right eye had got worse and that
the specks had disappeared & that vision was lost in her right eye and she was afraid to go about for fear of being run over.

Again took her vision and now found that in the right eye it was < 6/20. The vision in the left eye was as before. She said something appeared late in the right eye like a skin. I put homatropine in the right eye and with an ordinary retinoscopy mirror, a large detachment was found occupying when she looked straight in front of her, the whole of the fundus above the disc and slightly on the macula side of the disc. The detachment was seen with the retinoscopy mirror as a white reflex with the vessels clearly seen upon it running down to, and hooking over the edge of the detachment, where the white
and red reflexes joined. On looking more carefully at the fundus ophthalmoscopically, with the direct method, the disc was best seen with a plus 0.5 D through rather hazy.

The black specks were due to hyalitis, but now none were seen and no opacities in the vitreous, and there had probably been some old choroiditis though none was visible now.

The detachment of the retina was best seen with a +8 D. On the inner side of the disc some faint white lines were also seen indicating detachment in the macula region with a +5 D.

On enquiring into the history, the general family history was good.

Patient said about ten years ago she missed the top stair and fell to the bottom and
injured the right side of her head and she says she lost the right of both eyes, which returned to normal.

About five weeks previous to coming to me, she noticed black specks floating in front of the right eye. Previous to this she had noticed nothing. She was then going to hang out clothes to dry but refrained from doing so on account of the specks. She found other people did not notice them and so took it for bleariness and took aperitifs which did her no good and so she came to the hospital and the above was found.

She had never had cause to complain of her eyes except ten years ago when she had the fall.

The field of vision was taken with the perimeter and was normal above but a large scotoma was
found occupying the whole of the lower part of the field.
She was ordered Sult Atriof Gr IV
twice a day and mixture Pot Jodidi: and a pressure bandage
was applied and she was also
ordered to rest in bed as much
as possible but I did not see
her again.

The interesting points in this
case are.
On the first occasion she came
to me there was no sign of
detachment of the retina and
there was no ground for
suspecting such a thing and
with her glasses she got perfect
vision with both eyes.
Then she came a week after
with the right eye practically
blind and the large detachment
of the retina was found.
The cause of this was probably,
as discussed above, disease of
vitreous body leading to its shrinking and consequent traction on the retina, its rupture and a sudden detachment. However the rent in the retina was not seen.

Case III.
Herbert Holland, aged 80 was seen by me at the Moorfields Eye Hospital came time because he was short sighted and was unable to read. The family history was feinty good.

His refraction was:

R. \( < \frac{60}{60} \pm 2.16 \) with difficulty,
L. \( < \frac{60}{60} \pm 1.70 \).

Neither eye was improved with glasses.

I put him under homatropine and on examining him in the dark was found: an anterior synechia at the upper and inner part of the cornea.
and also a traumatic cataract. I could find no history of any injury to the eye, neither the boy nor father remembering anything about it. In the left eye was found a large posterior staphyloma extending all round the disc. Scattered about the macula region were many silver lines in the retina, and low down in the periphery of the fundus was found a large detachment of the retina, and there was also hyalitis present. As far as I could gather, the vision had become noticeably affected about a week previously. The boy was ordered into the hospital for operation on the right eye in the hope that in dividing the synechiae and removing the cataract, some vision might be obtained in that eye. I am very sorry
I never saw the case again. This seems to be another case where changes in the vitreous caused the detachment of the Retina and there had probably been some chorioiditis, but this I could not make out.