

speaking of broad tendencies rather than of individuals, and again it is possible that not a few of those who reject Western advice on the ground of "female opposition" are really hiding themselves behind the *sahri* (the equivalent of the petticoat). In other words, they are repeating the history that began with Adam's excuse in the Garden, that the woman tempted him and he did eat.

A CASE OF MULTIPLE ANEURISMS OF THE RETINAL ARTERIES.

(*With coloured plate.*)

BY

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ANEURISMS of the retinal artery, apart from those variations in calibre associated with arterial disease, are so extremely rare that I think it may be of interest to ophthalmologists if I report the following case at some length :

Case.

Private C. J., aged 23, service 7 months, was sent up to see me by the medical officer in charge of his base, as he had complained of some blurring of vision. On being questioned, he said he had first noticed that his sight was defective some eighteen months previously, that it was much better now than it had been, but that when he tried to use his eyes for close work, *e.g.*, to read a thermometer, the figures got blurred and seemed to move "up-hill." He also said that when he stooped and raised his head quickly, his eyes ached at the back, and that "discs" and "rings" seemed to float in front of him.

He was a fairly well-developed man, apparently healthy, save for a slight tendency to anæmia. There was no sign of thickening of the peripheral arteries. The urine was reported normal.

Family history.—Father alive ; said to have diabetes, but no eye trouble. Mother died of cancer. Four brothers and one sister, all healthy, and nothing wrong with their eyes, as far as he knows. No history of tubercle or syphilis.

Previous history.—Patient has always been healthy, no serious illness, no injury ; has never worn glasses. He started work as a miner when 16½ years of age, and worked constantly in the pits until two months before enlistment, when he went off work, owing to his vision becoming blurred, and things seeming to go round. The doctor told him then that he had nystagmus. He started work again about ten days before enlisting, and left work to join.

Present condition.—On examination, there is nothing to note externally in either eye; pupils equal and active; tension normal. Slight nystagmus can be elicited in extreme positions of the eyes.

R.V.=6/6 c.+0.5 D. cyl. axis 45° =6/5 partly and J.I.

L.V.=6/5 partly. No refractive error.

L. fundus.—There is some increase of connective tissue round the disc and along the vessels, but there is no sign of medullation at the disc. On following the superior temporal vessels outwards for about $2\frac{1}{2}$ to 3 disc diameters, a large patch of medullated nerve fibres begins to make its appearance (see plate). These fibres start as a compact opaque bundle along the course of the vein, and gradually spread out on either side into long fine silvery threads which follow the line of the main vessels, and gradually fade off into the normal retina about 3 disc diameters further out. At one point the upper of the two main branches of the superior temporal artery crosses behind the vein, and here the artery is almost completely hidden by these fibres. Still further out, and at a lower level, there is another area of medullated fibres, but this patch is much smaller than the first, and is poorly defined, being represented merely by a few faint silvery lines running across the course of the lower branches of the superior temporal vessels.

But the most striking feature in the fundus is the presence of three large swellings along an artery immediately below the first-mentioned patch of medullated fibres; two of these swellings are pale pink with bright reflexes, which gives them a pearl-like appearance, while the third or centre one is of a deep carmine colour.

As the artery along which these swellings are situated presents several other features of interest, I purpose following its course outwards from the disc and describing in detail each abnormality as it presents itself.

The superior temporal artery divides into two branches of equal size at a short distance from the disc (see plate). The upper branch follows the course of the vein, crossing first in front of this vessel, and then, at a short distance further outwards, recrossing behind it. It is upon the lower branch, which runs above the macula and is not involved in the area of opaque nerve fibres, that the aneurisms occur. After giving off two twigs to the macular region, this artery sends a small branch almost vertically upwards and just beyond this point, which is about $3\frac{1}{2}$ to 4 disc diameters from the papilla, there are two small, oval, brightly reflecting spots of a white or pearl-grey colour, lying one beyond the other on the centre of the vessel, with their long axes parallel to its course. There is no increase in the calibre of the artery, and beyond the fact that its normal central light reflex is interrupted by these two spots and that the vessel behind them, except where they actually hide it, shows pink in colour, there is nothing further to note. Immediately beyond the second of these

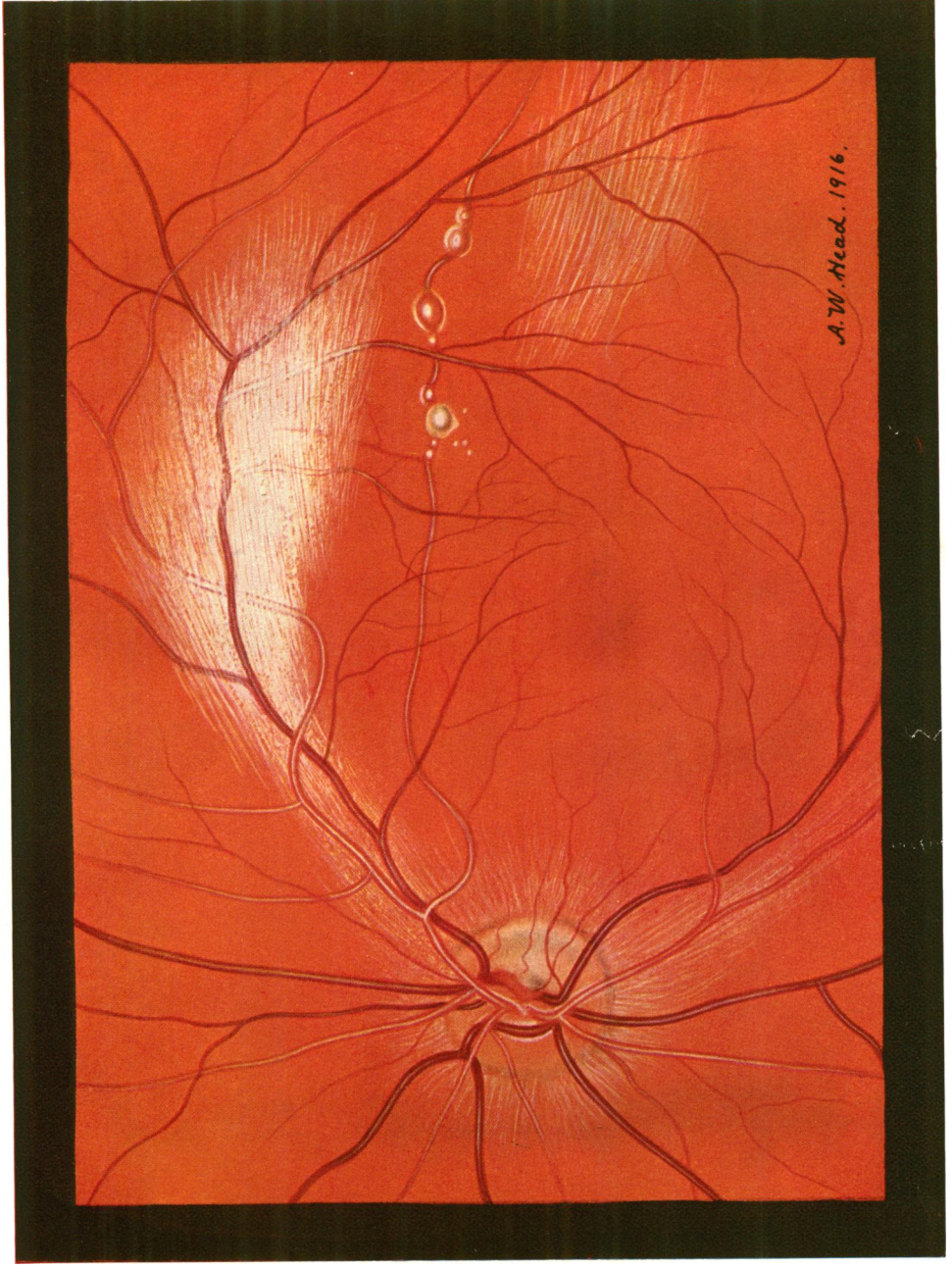


PLATE I.—To illustrate CAPTAIN PRINGLE'S CASE OF "MULTIPLE ANEURYSMS OF THE RETINAL ARTERIES."

two dots is a large fusiform expansion, bulging below rather more than above and in size about $3\frac{1}{2}$ times the diameter of the vessel. At the peripheral end of this expansion and before the calibre again becomes normal, there is a second smaller fusiform expansion about twice as large as the diameter of the vessel. In shape these two are like the two bulbs of the old-fashioned soda-water syphon, the length of the first being about four times, and of the second about twice the diameter of the vessel. The appearance of the first expansion is very striking and can best be compared with that of a pale-pink pearl. On the summit of this expansion and slightly below its centre there is an oval area with bright reflex similar in appearance to that of the first two just described, but longer. Curving above and below this reflex can be seen the pale pink shading of the blood-stream, which has a flattened-out appearance; but this, as well as the colour, is probably due to the fact that the blood is seen through a thickened vessel wall. The second or smaller expansion is also pale pink in colour, with a marked reflex on its upper part. It also shows the usual bright oval reflex on the summit. The lower part has a deeper pink colour, probably because here the blood-stream does not appear to take a straight course through the expansion, but fills its lower half, which apparently has comparatively thin walls, while the walls of the upper half seem to be considerably thickened.

For a short distance beyond this point the artery is normal in all respects. It is crossed transversely by a branch of the superior temporal vein, and gives off a small twig below. Next comes a third pearl-grey spot on the anterior surface of the vessel, similar to the two first described. Here, however, the vessel shows a very slight increase in calibre, but the walls do not appear to be thickened. Narrowing a little, but still with a somewhat increased calibre and curving gently upwards, the artery expands into the fourth and most typical of its aneurisms.

In shape this is exactly like the bulb of a Higginson's syringe, measuring about $3\frac{1}{2}$ diameters of the normal vessel in breadth and 4 to $4\frac{1}{2}$ diameters in length. It is of a deep pink or carmine shade throughout, except at its centre, where it shows a bright oval reflex. The walls appear thickened, as they have a distinct whitish outline, but the whole expansion is perfectly uniform and is apparently completely filled with blood.

Beyond this dilatation the artery becomes perfectly normal for a short part of its course, and is crossed by another twig from the superior temporal vein. It takes a gentle curve downwards, and just at the bottom of this curve it shows yet another dilatation. This one is a reproduction of the first two, but is smaller, being scarcely twice the width of the vessel; it has the same appearance of a pale-pink pearl, and seems to bud out from the anterior wall of the artery, corresponding in appearance rather

with the sacculated type of aneurism. The blood-stream can be seen passing behind rather than through its proximal part, the walls of which appear much thickened, while its distal part takes on a deep pink colour, and seems to become full of blood as it gradually diminishes to approximately the normal diameter of the artery.

The furthest out and smallest expansion follows almost immediately on the last-described before the vessel has quite regained its normal size. It seems to spring from the posterior and upper aspect of the artery, showing above the vessel as a small refractile hemisphere, the slightly enlarged artery hiding its lower half. In size it is only about half the width of the vessel, and is probably composed of thickened wall, as the line of the blood-stream can be seen passing across it. For a short distance, about 2 to 3 disc diameters, beyond this expansion, the vessel is slightly enlarged, but shows no thickening or irregularity of its walls; while for the rest of its course in the ophthalmoscopic field, it is perfectly normal.

In the retina, a little way below the first aneurism, there is a minute refractile spot, and on close examination, one can make out a second still more minute grey speck below the Higginson's syringe expansion. No blood-vessel is in connection with either of these.

No enlargement of either the arteries or the veins on the papilla is apparent, nor can the slightest abnormality be detected on any other of their branches as far as they can be traced towards the extreme periphery of the fundus. As compared with the retinal vessels on the disc of the other eye, beyond the fact that the left superior temporal vein is a little fuller than the right, no difference is observable.

The branch of the artery on which the aneurisms occur is normal in every respect up to the point where the first refractile spot appears.

I was unable to detect any spontaneous pulsation, either in the arteries or in any of the expansions. The venous pulse was well marked on both discs. Pressure on the globe gave very distinct pulsation in the arteries, and this pulsation could be traced into the branch with the aneurisms; but I was disappointed in not being able to produce obvious pulsation in any of the aneurisms themselves or in the artery beyond, although by very closely watching the white outline around the "Higginson's syringe" expansion, I satisfied myself that there was a faint but distinct expansile movement, and that the expansion was definitely reduced in size.

R. fundus.—The inferior temporal and inferior nasal arteries and their branches show dilatations similar to those described in the left eye. The majority of these swellings are situated at the extreme periphery of the fundus, but, owing to the slight nystagmus, they are difficult to see, and impossible to examine in detail. In all, 23 dilatations of varying sizes appear in the ophthalmoscopic field, 9 of these being situated on the inferior temporal artery and its branches, and 14 on the inferior nasal artery and its branches.

They are of exactly the same type as those in the left eye, but are rather smaller in size, possibly because they are more peripherally situated. In none of them, nor in the fundus in their immediate neighbourhood, can any sign of recent changes be detected. Both arteries show some apparent thickening of their walls at one or two points in their course between two dilatations ; but otherwise, except for the aneurisms, they appear normal. Towards the periphery of the field, and lying above the main branch of the inferior temporal artery, some white markings appear in the retina, which are probably of a similar nature to those described in the left fundus immediately between the two larger dilatations. There is evidence of an increase of connective tissue around the disc and along the vessels in its neighbourhood.

Remarks.

Unfortunately, when on active service, one is able to consult but a very limited amount of the literature available on a subject of this nature. As far as I know, however, no similar case has hitherto been described, but I am open to correction on this point. The question may be asked : " Are these true aneurisms ? " Personally, I have no hesitation in saying they are, and this opinion has been endorsed by three ophthalmic surgeons to whom I have shown the case. I do not think any other diagnosis is possible if the following points are considered.—(1) The situation, shape, and general appearance of the swellings ; (2) the fact that the " Higginson's syringe " dilatation is completely filled with blood, and that owing to the thickening of its walls, their continuity with those of the artery is easily established ; (3) that the blood-stream can be traced through the centre of one of the aneurisms, the walls of which have become so thickened that the calibre of the stream is only slightly increased ; and (4) that expansile pulsation and reduction in size can be produced in the largest of the aneurisms by pressure on the globe. Had spontaneous pulsation been present, or even had I been able to produce it markedly by pressure on the globe, it alone would have decided the nature of the swellings ; but as this was so poorly-defined that its presence was disputed by two out of the three ophthalmic surgeons who saw the case. I mention this fact last, giving the other arguments precedence. I think, however, that these furnish sufficient proof, leaving the pulsation out of account.

As regards the origin of the condition, I fear I can go no further than to suggest the probability of its being a congenital abnormality. The patient's health is excellent, and a physician, who kindly examined him for me, reported that he could find nothing wrong, so that the changes in the retinal arteries can scarcely be explained as a manifestation of any general disease which might affect the vascular system. On the other hand, the fundi show definite

congenital defects, both in the patches of medullated nerve fibres and in the increase of connective tissue around both discs. There is also the fact that the eyes have normal vision, and manifest no pathological change in any other part of the fundi. Again, there are no signs of recent changes along the vessels or in the neighbourhood of the aneurisms, such as one would expect to find had the disease been progressive, and although the period during which I had the patient under observation (three weeks in all) was too short to be of any help in deciding this point, the condition certainly did not alter, as far as I could judge.

The possibility of this being an early stage in the condition known as arterio-venous aneurism (18 cases of which have been collected and discussed by Coats in his paper in the *Royal London Ophthalmic Hospital Reports*, Vol. XVIII, on massive exudative retinitis), should, I think, be mentioned, although beyond the fact that this disease mostly attacks healthy males of from 22 to 23 years of age, and that it is generally bilateral, there is no similarity either in the history or in the ophthalmoscopic appearances to the case under discussion. The veins in this case have no connection whatever with any of the aneurisms. A case showing venous communication, together with a patch of medullated nerve fibres was, I believe, reported in one of the ophthalmic journals some years ago.

Referring for a moment to the symptoms complained of by the patient, I do not think these had any connection with the changes found in both fundi, but are more probably attributable to the remaining traces of his nystagmus.

In conclusion, I should like to express my thanks to Col. W. T. Lister, C.M.G., consulting ophthalmic surgeon to the British Expeditionary Force, for his interest in the case, and for his confirmation of the ophthalmoscopic appearances.

BILATERAL GLIOMA OF THE RETINA WITH MULTIPLE METASTASES.*

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A CRITICAL examination of the collected statistics of Wintersteiner¹ on glioma of the retina reveals the fact that when malignant characters are borne by this neoplasm they are shown by the extension and spread of the new growth in two ways, namely:—

*A paper read before the Royal Society of Medicine (Section of Ophthalmology) on Nov. 1st, 1916.