MULTIPLE ANEURYSMS OF THE RETINA*

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CASE REPORT

A man aged 37 years was referred to hospital on account of defective vision in his right eye. He had no knowledge of any injury or inflammation in this eye, and had not realized that it was defective until he was medically examined for the Navy at the age of 18 years, since when the vision had not altered. His general health was good, and there was no family history of defective sight.

Ophthalmological Examination

R.V. = 3/60, not improved with + 0.5/+1 ax 90.

L.V. = 6/6, - 0.5/+0.75 ax 105 = 6/5.

The left eye was normal.

The right fundus showed choroido-retinal degeneration at the macula and nasal periphery. Numerous fusiform, saccular, and sausage-shaped aneurysms of the retinal veins and arteries, and capillary micro-aneurysms were seen, mainly below and temporal to the macula. Similar clusters of small aneurysms were present in the periphery at one and three o'clock, associated with branches and tributaries of the superior temporal artery and vein and the superior nasal vein respectively.

The fundus drawing (Figure) shows that a division of the superior temporal artery runs temporally with an area of parallel sheathing; it exhibits several fusiform aneurysms and becomes tortuous and dilated, to return below the macula, ending in a series of sausage-like dilatations, and crossing the tributaries of the inferior temporal vein which have themselves undergone aneurysm formation. Having crossed the venous tributaries, this vessel appears to have communicated with the macular branch of the inferior temporal artery, which also shows parallel sheathing and bears two aneurysms and a small area of scarring which suggests the site of another aneurysm. The majority of the micro-aneurysms are seen in the region where the recurrent superior temporal artery crosses the tributaries of the inferior temporal vein.

General Investigations.—There was no evidence of aneurysms elsewhere in the body and radiographs of the skull and chest revealed no abnormality other than a healed tuberculous focus in the right upper lobe. The urine was sugar free, and a glucose tolerance test showed a normal blood sugar curve with no glycosuria. Wassermann,

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FIGURE.—Drawing of right fundus showing micro-aneurysms and old chorio-retinitis.

Kahn, and toxoplasmosis tests (cytoplasm modifying dye test and rabbit-skin test), were negative. The erythrocyte sedimentation rate was 6 mm. in the first hour. A complete blood count showed no abnormality.

DISCUSSION

It is now known that retinal aneurysms occur either as an expression of abnormal vascular growth, as in angiomas of retinae (Snell, 1927), or as the result of vascular degeneration due to inflammatory, toxic, or nutritional causes. This patient's fundus, as accurately depicted in the drawing, shows evidence of an old choroido-retinitis, and it is reasonable to suppose that this condition gave rise to the periarteritis and periphlebitis of which there is still evidence in the parallel sheathing. In a recent study of the incidence of retinal micro-aneurysms in the non-diabetic subject (Ashton, 1951), it was found that these occur not uncommonly in choroido-retinitis and can readily be seen in the injected retinae from such cases. The gross aneurysm formation seen here is, of course, a rarity, and is probably related to the severity of the original condition. The tortuous and dilated vessel, which appears to connect the superior temporal artery and the macular branch of the inferior temporal artery, may have arisen from a thrombus in the latter vessel. The subsequent degenerative changes in the vessels beyond the obstruction led to the localized and massive formation of aneurysms, when the circulation became re-established from the superior temporal artery, through distended pre-existing capillary connections.

Similar cases have been described. Story and Benson (1883) and Story (1886) watched the development of both venous and arterial aneurysms in the upper temporal quadrant of the right fundus in a patient aged 20 years; these changes were associated with much fibrous thickening along the vessels, so that in places the blood column could hardly be seen. They thought the condition unique but there is no report of a general physical examination and the possible aetiology was not discussed. Doyne (1896) reported a case in which aneurysms associated with a plugged beaded vessel were seen in the macular region; there was a white floccular appearance beneath the level of the retinal vessels surrounding the macula. Here again there was no indication of the aetiology, but there was a history of fever and the condition might well have been of inflammatory origin. Fisher (1903) noted a similar condition in a patient aged 13 years; he described aneurysmal dilatations on the vessels immediately beyond the macula in an upward and outward direction, with white patches of retinal degeneration in the temporal and upper nasal peripheries. These changes were progressive. Fisher was unable to state the cause of the disease but there was a history of rheumatic fever and a family history of tuberculosis, and thus this case also may have been of an inflammatory nature.

From the pathological point of view, therefore, choroido-retinitis appears to be the most likely underlying cause of this patient's fundus appearances but there is nothing in the clinical or pathological examination to suggest its exact aetiology.

SUMMARY

A case of multiple aneurysms of the retina in a male patient aged 37 years is described and the aetiology discussed.

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