CASE NOTES

FUNDUS CHANGES IN UVEO-MENINGITIS*

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THE association of angioid streaks in the ocular fundi with pseudo-xanthoma elasticum, Paget's disease and general arterial disease is well known. The present case is interesting not merely because of the development of a condition similar to angioid streaks which has not hitherto been described in uveo-meningitis, but also because it sheds some light on their causation.

Case Report

A housewife aged 44 complained of bilateral dimness of vision of one week's duration at the time of reporting for treatment in May, 1957. Some photophobia and ocular discomfort were also present. There was no history of antecedent disease. Her teeth were septic and she had experienced joint pains on and off and more recently a constant severe headache.

Examination.—An anterior uveitis affected both eyes with a fine vitreous haze, though the fundi could be seen to be normal. The visual acuity was reduced to 6/12 in each eye, not correctable by lenses.

Treatment.—Atropine drops 1 per cent. thrice and cortisone ointment 2.5 per cent. four times daily quickly brought relief for a time.

Progress.—3 months later she presented herself again with pain, severe curtailment of vision and redness of both eyes, and greying and dropping of hair on the scalp. She was admitted to the Victoria Memorial Eye Hospital, Colombo, on July 25, 1957.

Examination.—The visual acuity in each eye was perception of light. The ocular tension was 21.5 mm. Hg (Schiötz) in the right eye and 13 mm. Hg in the left. Both eyes showed ciliary injection, keratic precipitates, and atropine caused uneven dilatation of the pupils. Both lenses were clear, but the vitreous in both eyes was turbid with floaters precluding a clear view of the fundi. Large retinal detachments were seen in the lower parts of both eyes.

There was bilateral nerve deafness of short duration.

The reflexes were brisk in both arms and legs. The plantar reflexes were flexor.

Laboratory Investigations.—The blood pressure was 100/65 mm. Hg.

White cell count 7,800 per c.mm.; differential count, polymorphs 57 per cent., lymphocytes 46 per cent, eosinophils 3 per cent.

The erythrocyte sedimentation rate was 14 mm. in the first hour and 34 mm. in the second.

The Wassermann reaction (blood and cerebrospinal fluid) was negative.

The cerebrospinal fluid cell count was 2, total protein 20 mg. per 100 ml. Lange 0000000000. Pandy +.

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Treatment.—Cortisone and atropine were continued topically as above. Systemic cortisone was administered as follows: 300 mg. on the first day followed by 200 mg. on the second, and 100 mg. daily thereafter for 15 days, followed by 50 mg. daily for another 15 days. 100 mg. thiamine and 200 mg. ascorbic acid were given twice daily intramuscularly.

Progress.—On August 1, 1957, the patient's hearing was returning, and on August 5 the visual acuity had improved to 6/24 in the right eye and counting fingers at 3 ft. in the left.

Ophthalmoscopy showed a recession of the retinal detachments in both eyes. The entire background of the fundi showed a fine peppery deposit of pigment, but in certain areas the pigment was clumped together in streaks and plaques (Figs 1 and 2) distributed over the sites of the detachments.

FIG. 1.—Left fundus, showing angioid streaks and pigment deposits in the form of sieves.

FIG. 2.—Right fundus, showing angioid streaks.

The streaks resembled those described in pseudoxanthoma elasticum, save for the darker black-brown colour, greater breadth, and curvilinear disposition. These streaks were superficial to the choroidal and deep to the retinal blood vessels. Both discs were hyperaemic with indistinct borders but without the suggestion of papilloedema. By August 15 these streaks had become less dark.

On October 6 the visual acuity was 6/18 in the right eye and 3/60 in the left. The detachments had completely disappeared and the angioid streaks were of a light brown tint.

On January 3, 1958, the eyes remained much the same. Occasional buzzing in the ears and a mild headache were residual symptoms.

Discussion

The symptomatology and course of the illness together with the beneficial effects of steroid hormone therapy leave no doubt that this was a case of Harada's uveo-meningitis, but the occurrence of angioid streaks in this condition has not been reported before. The accompanying fundus drawings suggest that the term "streaks" is inappropriate, and that "sheets" or

“plaques” would be more descriptive. The streaks were black in colour and delineated the limits of the previous retinal detachments. Wherever these streaks terminated there was the appearance of a sieve of pigment stippling the whole fundus like a fine powder.

The subsequent lightening to a brownish tint indicates that the streaks originate in a pigmentary disturbance which is characteristic of uveitis. The streaky aggregation of pigment at the limits of the retinal detachment may be explained by a stretching of Bruch's membrane brought on by a massive exudative choroiditis and concomitant serous retinal detachment. Bruch's membrane was perhaps stretched to the greatest extent at the base of the detachment, and the pigment epithelium (to which it is firmly attached, Wolff, 1948) was also subjected to strain, causing proliferation and migration of pigment. When the detachment receded with absorption of the choroidal effusion, Bruch's membrane also went back into position but showed folds and creases wherever it had been excessively stretched, somewhat resembling the folds seen in Descemet's membrane when a phase of raised ocular tension is followed by a return to low or normal tension. These folds would hold particles of pigment and give the appearance of dark streaks. When the excess pigment was engulfed by phagocytosis a brownish angioid streak would be the result.

This theory agrees with the work of Law (1938), who demonstrated histologically a folding of Bruch's membrane in pseudo-xanthoma elasticum, but the latter depends on an intrinsic defect in Bruch's membrane and not on a stretching process as in the case here described.

REFERENCES

- LAW, W. (1938). *Trans. ophthalm. Soc. U.K.*, **58**, 191.
WOLFF, E. (1948). “The Anatomy of the Eye and Orbit”, 3rd ed., p. 47. Lewis, London.