RECURRENT CHOROIDITIS TREATED WITH CORTISONE*

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CASE REPORT†

History.—The patient, a female, aged 27, came to the hospital on April 14, 1948, complaining of a cloud over the left eye of five days' duration. Previous history included tonsillectomy in childhood, but otherwise no illnesses.

Examination

Right eye: nothing abnormal discovered, vision 6/5.

Left eye: vitreous very cloudy, no lesion seen in the fundus, vision 6/18.

A presumptive diagnosis of acute peripheral choroiditis was made.

Investigation.—A complete general examination revealed no abnormality, except Vincent's angina of the gums.

Treatment

Local.—Gutt. atrop. 1 per cent. twice daily.

Dental.—Novarsenobillon and local penicillin to gums.

Result.—The vitreous gradually cleared, and in 5 weeks the vision in the left eye was 6/6. No choroidal lesion could be seen at any stage.

Recurrences.—On July 14, 1948, there was a similar attack in the left eye.

On January 18, 1949, another relapse occurred in the left eye, and at the same time the vitreous clouded over in the right eye. No choroidal lesions could be seen. The patient was admitted to hospital on January 23, 1949, and given a course of T.A.B. She was discharged after 2 weeks with both eyes quiet, with vision 6/9 in both.

On March 14, 1949, the left eye relapsed and 3 days later the right eye followed. As the infection of the gums had recurred, dental treatment was given as before, and a tooth was extracted.

The patient was not seen again until 9 months later, on December 17, 1949, when both eyes had again relapsed, vision being counting fingers in the right eye and hand movements in the left eye. On admission the chest was x-rayed for the second time and showed no active focus. The erythrocyte sedimentation rate was average 9 mm. (Westergren). Intradermal tuberculin test (purified protein derivative) was first strength negative, and second strength strong positive reaction with enlargement of glands in the axilla. After this reaction the vitreous cleared rapidly. A recurrence of the dental infection at the same time was treated with a course of penicillin, and the

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† This case also appears in a series reported by Lavery and others (1951).

teeth were extracted. At this time also, an infection was located in the left maxillary sinus, and a Caldwell Luc operation was performed on February 17, 1950.

The patient was discharged on March 8, 1950, the eyes being much improved, but 10 days later both eyes relapsed once more. Penicillin injections were recommenced, but as there was no improvement after a week they were discontinued. In view of the reaction to the purified protein derivative tuberculin test, a course of tuberculin injections was commenced, but after the second injection there was a further flare-up in the left eye with the appearance of five whitish exudates in the choroidal periphery below. This was the first time the causative lesions had been seen. The tuberculin injections were stopped, the patient was re-admitted, and a course of 1 g. streptomycin and 20 g. PAS was given daily for 42 days, starting on June 15, 1950. By July 11, 1950, the right eye had cleared almost completely, numerous healed foci could be seen in the lower periphery, and the left eye was considerably improved. However, one day before the course was due to end the left eye relapsed again.

Cortisone Therapy.—At this stage cortisone had become available in limited quantities for clinical trial, and on July 27, 1950, 0.05 ml. (1.5 mg.) cortone acetate was given subconjunctivally in the left eye and repeated every second day for seventeen doses. From the start the vitreous commenced to clear gradually, and at the end of the course the eye was quiet and fundus details could easily be seen. The vision however was only 2/60, as there had been a focus at the macula and this was now atrophic with a small amount of pigmentation around the atrophic area.

On August 30, 1950, the right eye, which had now been quiescent for almost 2 months, presented a large focus in the macular region, about two disk diameters in size; the focus looked very active and was spattered with hæmorrhages, and vision was reduced to hand movements. The next day the vitreous became very cloudy, and the lesion could be seen through it only as a vague, whitish mass. Cortisone by mouth (25-mg. tablets) was then commenced, and its activity checked by eosinophil counts. The dosage given was 100 mg. daily for 17 days, followed by 75 mg. for 4 days, followed by 50 mg. for a further 4 days. The effect on the choroidal lesion was dramatic. In 2 days the vitreous had cleared sufficiently to show that the exudate had diminished in size by about one half. Within 4 days it was no longer visible, and the vitreous had cleared to a remarkable extent. The eosinophil count dropped from 580 per ml. to 240 per ml. in 6 days, and was down to 6 per ml. in 14 days. At the end of the course (September 24, 1950) the right eye was perfectly quiet, and there was no sign of the exudate except for a slightly atrophic appearance of the macula. That this had been damaged was shown by the fact that vision was only 4/60.

The patient was then put on cortisone ophthalmic ointment 25 mg./g. four times daily in both eyes. On November 4, 1950, while she was still on the ointment, there was another severe relapse in the left eye with reduction of vision to hand movements. Oral cortisone was recommenced 4 days later—100 mg. daily for 4 days, followed by 100 mg. by injection for 2 days. The dosage was then reduced to 75 mg., 50 mg., and 25 mg. for the next 3 days and then stopped, and the cortisone ointment was substituted. At this stage the vitreous was clear but no lesion could be seen.

On December 4, 1950, there was a recurrence in the right eye when the patient was in bed with a cold. She came to hospital 3 days later, and on examination an enormous area of choroiditis occupying almost the whole of the lower half of the fundus could be seen. Cortisone intramuscularly 100 mg. was started on December 7, 1950, and given daily for 6 days; on the 7th day the dose was reduced to 75 mg., and for the next 15 days 50 mg. daily was given, then for 2 days 25 mg. daily. Within 2 days

the great mass of exudate was reduced by half, and in 4 days it had disappeared, except for a small area at the periphery. There was still a good deal of vitreous haze and the vision remained at hand movements, but by December 18, 1950 (*i.e.*, 11 days from the start of the cortisone) the vitreous had cleared considerably, and the choroidal exudate was barely visible. By December 29, 1950, the lesion had completely cleared, and the vision was 2/60 in both eyes. The cortisone injections were stopped on December 30, 1950.

Since the cortisone ointment had twice failed as a maintenance measure it was decided to try subconjunctival cortisone for this purpose. On January 1, 1951, 3 mg. cortisone was given subconjunctivally in each eye. This was repeated weekly up to February 19, 1951, *i.e.*, for 7 weeks. On February 26, 1951 (the day on which the subconjunctival injection was due) there was another recurrence in the right eye of a large choroidal exudate, which is at present being treated with cortisone intramuscularly, and has cleared up, though not with quite the same rapidity as on the previous occasions.

SUMMARY AND COMMENT

This is a case of choroiditis which relapsed six times in the right eye and eight times in the left over a period of 2 years and 9 months. A high degree of allergic hypersensitivity is presumed to be the cause; and whether this is due to sensitivity to tubercular toxins as suggested by the severe reaction to the purified protein derivative tuberculin test, or to the septic foci discovered in the mouth and maxillary sinus is not known. Cortisone had a dramatic effect on the inflammatory and exudative results of this hypersensitivity, as shown by the rapid resolution of the choroidal lesions, which disappeared leaving no signs of their presence. Cortisone had an equally dramatic effect on the eosinophil count in the peripheral blood, causing a rapid fall in an originally high count. It is of interest to note that in this case cortisone seemed to produce as rapid a result when given by mouth as when given by injection.

As noted by Woods (1950), cortisone had no effect on the underlying hypersensitive state, and when it was discontinued lesions in the choroid recurred and the eosinophil count rose again. The fact that cortisone ointment failed to prevent the recurrence of the lesions confirms Woods' observation that it does not influence the posterior segment of the eye.

It would obviously be of great importance if some effective local method of giving a maintenance dose could be found, and for this reason a weekly subconjunctival dose of 3 mg. in each eye was tried. A weekly interval was chosen because the subconjunctival deposit takes about that time to absorb, but whether the cortisone is absorbed at the same rate as the suspending agents, and lasts as long as they can be seen, is not known. When almost 2 months passed without a relapse, it was felt that perhaps the answer to the maintenance dose had been found, but the relapse in the right eye on the day on which

the injection was dashed that hope. However, it may be that twice-weekly subconjunctival injections will be sufficient to prevent further relapses, and this it is intended to try. Fortunately, the injections cause practically no local reaction, and are not at all painful.

It is felt that, in this case, had the cortisone been started as soon as the macular lesions occurred, without the unavoidable time-lag of 3 days after onset, the macular damage would have been minimized.

It is also felt that the action of subconjunctival cortisone in such cases is too slow, and that this method should only be used to maintain the rapid resolution that has been initiated by the parenteral method.

Finally, as the action of cortisone does not deal with the underlying cause, no effort should be spared in seeking this out and dealing with it by whatever method is available.

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REFERENCES

- WOODS, A. C. (1950). *Amer. J. Ophthalm.*, **33**, 1325.
LAVERY, F. J., WERNER, L. E. J., O'DONOGHUE, W. D., MACDOUGALD, J., and GUINAN, P. M. (1951). *Brit. med. J.*, **1**, 1285.