Bilateral oedema at the posterior pole

Hypersensitivity reaction to Alavac P injection

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Many diseases affecting the eyes are considered to be allergic manifestations (Cooke, 1947), but the retina and optic nerve are involved only rarely; retinitis, detachment of the retina, and optic neuritis may result (Tassmann, 1946).

A contrary view is that retinal oedema was common during the era of serum therapy because of the high incidence of serum sickness. Foods, pollens, and drugs were also frequently incriminated (Boyd and Aaron, 1963).

In the following case, bilateral macular oedema occurred as a hypersensitivity reaction to desensitizing pollen vaccine.

Case report

A man aged 26 years first attended on April 2, 1970, complaining of poor vision in both eyes. The visual acuity in the right eye had deteriorated 10 days previously, followed 2 days later by the left eye; this was associated with metamorphopsia, micropsia, defective depth perception, and positive central scotomata. Initially, the general symptomology was headache, neck stiffness, and extreme lethargy. On the day of onset of the ocular symptoms, he had received an injection of Alavac P (Bencard), which had been prescribed for hay fever and respiratory allergy beginning at the age of 22 years. This was his second annual course, and he was receiving no other medical treatment. There was no history of trauma, pre-existing visual disability, or family history of allergy.

EXAMINATION

The visual acuity was 6/36 and N18 in both eyes. Skiascopy + 4.0 D sph. both eyes. There was no improvement in distance or reading vision with the addition of a plus lens. The pupils were equal and regular with reaction to light and near reflexes. Fundus examination revealed an ill-defined raised greyish area, involving both posterior poles, with mottling at the maculae, and loss of the foveal reflex. The optic disc and retinal blood vessels were normal, retinal haemorrhages and exudates were absent, and the vitreous was clear. Both visual fields charted on the Bjerrum screen showed an absolute central scotoma to white targets (2/2000 and 5/2000).

The patient was admitted to hospital.

INVESTIGATIONS

X rays of the skull and chest, lumbar puncture, and blood studies showed no deviation from normal values.

PROGRESS

On April 2, treatment with oral prednisolone 10 mg. 8-hrly was started. On April 4, the visual acuity in the right eye was 6/12, and in the left eye 6/9. The macular oedema had practically subsided. On April 7, the visual acuity was 6/5 in both eyes. The fundus appearances were normal.

except for slight mottling at the maculae. Reduction in steroid dosage was begun. On April 28, he had no complaints, the visual acuity was 6/4 in both eyes, the macula appeared normal, and the visual fields charted on Bjerrum's screen showed no residual relative or absolute scotomata.

Comment

Necheles (1964) described a case of spontaneous recurrent macular oedema. An episode then occurred after a desensitizing vaccine injection given 24 hours previously. Further episodes occurred when the injection was repeated. The vaccine consisted of extracts of ragwood, grasses, tree pollens, and airborne moulds. Retinal oedema of allergic origin, following the injection of antitetanus serum, was suggested by Bedell (1935). Williams (1933) incriminated pork-insulin and Wiener (1935) suggested tricophyton as allergens causing retinal oedema.

The features of interest in the case described above are the rapid response to prednisolone, the full recovery of visual function, and the absence of eosinophilia. Earlier injections of Alavac P resulted in a gradual increase in local tissue antibodies, *i.e.* the induction of a state of tissue hypersensitivity.

Lesions of the retina due to oedema, haemorrhage, or inflammation may be postulated as allergic in origin but proof is difficult to substantiate. Cooke (1947) stated that, if "some" of the following criteria applied, there was evidence of allergy in the aetiology of the clinical condition:

- (1) History of antecedent allergy.
- (2) History of other allergies in the patient.
- (3) History of recurrent attacks not explained on any other medical basis.
- (4) Blood eosinophilia not due to intestinal parasites.
- (5) Well-marked skin tests.

It is suggested that the present case belongs to the category of an allergic reaction. The risk of retinal oedema after desensitizing vaccines is rare and there is no reason to cease this form of prophylaxis, but the continuation of injections in an affected patient is not recommended.

Summary

A case is described of bilateral posterior polar oedema due to hypersensitivity to Alavac P. This is the second recorded case of retinal allergy to desensitizing vaccine. The criteria for evidence of an allergic aetiology are stated.

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