Atrophy of the Optic Nerve and Vitamin B6 Deficiency

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In cases of optic nerve disease a tryptophan loading test is now performed. This test, described by Wachstein and Fichtenbaum, gives information about the vitamin B6 activity, on the grounds of the excretion of xanthurenic acid after loading the organism with tryptophan.

We would like to show you 3 patients with optic nerve atrophy, in whom the results of this test were markedly abnormal.

The first patient is a 32-year-old woman with all the clinical and biochemical signs of multiple sclerosis. She had bilateral optic neuritis, associated already with some atrophy of the papilla and resulting deterioration in vision and visual field defects.

The diagnosis of multiple sclerosis had been suspected earlier as her vision had already deteriorated twice as the result of retrobulbar neuritis. She had then reacted favourably to vitamin B complex.

Vitamin B6 deficiency was found in this patient. A marked improvement, both clinically and biochemically, was achieved by giving vitamin B6 alone. The visual acuity and visual fields did not improve, but this could not be expected in the presence of the severe atrophy of the optic nerve.

Two other patients are a mother (64 years old) and daughter (30 years old). The mother has had poor vision all her life, in the last 8 years she has noticed increasing tingling of her hands and recently loss of power. The optic nerve on both sides is atrophic. The original diagnosis was amyotrophic lateral sclerosis.

The daughter has also defective vision and bilateral atrophy of the optic nerve. She has also a positive toxoplasma reaction. In both the tryptophan loading test was markedly abnormal; after giving vitamin B6 the values became normal. In the mother the clinical condition also improved markedly.

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We are not yet sure whether this vitamin B6 'deficiency', occurring in these rather different cases, has any aetiological significance. It seemed worth while to draw your attention to this diagnostic aid, as it also has therapeutic possibilities for patients with optic nerve diseases, for whom no other therapy is known.

Discussion

Waardenburg: Recently a neurologist in Arnhem told me that he was treating a family with amyotrophic lateral sclerosis, who also showed hetero-chromia of the iris. He was unable to say whether Horner's syndrome was also present. Enquiry by neurologist- und ophthalmologist-

geneticists produced a negative answer. I therefore ask you to pay attention to this point if you come across patients with the above disease, and to send me a positive or negative answer.

Philipsen: In the above case of amyotrophic lateral sclerosis heterochromia of the iris was not present.

Janssens Capriles: I have noticed that the dosage and manner of administration of vitamin B preparations varies considerably in different departments. As you now perform quantitative tests can you tell us what is a reasonable dosage?

Philipsen: The above patients were first given intramuscular injections of 50 mg B6 per day. After this the tryptophan loading test became normal. We subsequently gave 25 mg B6 orally. This dosage was found to be sufficient in all cases and the tryptophan loading test remained normal.