

Tests of Thyroid Function in Chronic Headache Patients

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SYNOPSIS

Chronic, poorly localized headaches have been reported to be a not uncommon presenting complaint in patients with hypothyroidism. A study was performed to test the hypothesis that TSH measurement and TRH stimulation testing would identify some patients with hypothyroidism presenting as headache. Twenty-one patients were tested, and none were found to be hypothyroid by these two measures. Thyroid testing may still be useful where the headache is accompanied by other symptoms of hypothyroidism, however.

(*Headache* 27:351-353, 1987)

TESTS OF THYROID FUNCTION IN CHRONIC HEADACHE PATIENTS

Patients with frequent, near daily headache are commonly seen in neurologic practice. The neurologic history and examination are usually unrewarding, and symptomatic treatment with a beta blocker or tricyclic antidepressant often follows. The author has seen one patient with frequent headache (nearly every day in a typical month) who was given the diagnosis of hypothyroidism after an abnormal TRH (thyrotropin releasing hormone) stimulation test. Subsequent treatment with levo-thyroxine resulted in almost complete resolution of her headaches.

Identification of patients with a treatable cause of headaches such as this would be very desirable, especially if the prevalence of hypothyroidism in headache patients was not very low. A review of the literature revealed several studies which reported a link between hypothyroidism and chronic headache.^{1,2} In both treatment of patients who were hypothyroid and who complained of headache with thyroid extract led to a decrease in headache. In one 1948 study,¹ twenty patients with "chronic distressing headache" were identified in whom the basal metabolic rate was below normal. Their headaches were:

"... usually constant throughout most of the day and often persisted for weeks at a time... relieved

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Accepted for Publication: June 12, 1987

JUNE, 1987

by rest. The headache was characteristically bilateral in its distribution and sometimes localized to either the occipital, the vertical, or the frontal area. In other patients, its distribution was vague. The cephalgia varied in intensity from a dull annoying distress to a severe throbbing ache. It differed quite distinctly from typical migraine in that the headache was not periodic, unilateral, not accompanied by nausea and vomiting".

None of the patients had obvious signs or other symptoms of hypothyroidism. Administration of desiccated thyroid extract brought about "considerable amelioration of headaches" in 17 of their 20 patients. All of these patients were given the diagnosis of hypothyroidism based on basal metabolic rates from -12 to -26.

Another report in 1955² notes that of 118 patients with "minor headache" in which no other cause was found, empiric treatment with thyroid extract led to "relief of their headache," even though in some no laboratory evidence of hypothyroidism was found.

More recent reviews of the subject³⁻⁶ report headache in 14-73% of patients with hypothyroidism. The characteristic headaches are usually described as poorly localized and difficult to describe. One study also describes "atypical facial neuralgia" as a frequent presenting complaint in hypothyroidism.⁷ None of these papers include speculation of the mechanism by which hypothyroidism might cause headaches.

The diagnosis of hypothyroidism, in the past, has relied on identification of symptoms of decreased energy, cold intolerance, weakness, inability to concentrate, constipation, and poor memory and on eliciting signs such as "pseudomyotonic reflexes" or "hung up reflexes," menstrual changes, dry skin, puffy eyelids, and weight gain. Laboratory evaluation of protein-bound iodine fraction, hypercholesterolemia, and basal metabolic rate have been replaced by measurement of basal TSH and TSH response to an injection of TRH. Patients with primary hypothyroidism have an exaggerated TSH response to TRH, and may also have an elevated baseline (unstimulated) TSH.⁸ There may be some patients with normal TSH values who have only an exaggerated response to TRH, so that the TRH stimu-