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MEDICAL MEMORANDA

Severe Hypothyroidism—an Early Complication of Lithium Therapy

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It is well recognized that treatment with lithium may cause thyroid abnormalities. Non-toxic goitre and impairment of thyroid function detectable by biochemical tests but without clinical manifestations have been reported. Overt hypothyroidism is uncommon. The following case is noteworthy in view of the rapid development and subsequent regression of clear-cut hypothyroidism during and after a short course of lithium treatment.

Case Report

A 48-year-old woman was admitted to hospital suffering from her fourth depressive illness in 10 years. Several milder depressive swings and hypomanic episodes had also been observed. She had no family or personal history of thyroid disorder. The admitting doctor queried the possibility of delayed tendon reflexes (not confirmed by other observers) and requested a P.B.I. estimation, which was 5.8 μg (normal 3.3-7.8 μg)/100 ml. There were no other symptoms or signs of thyroid disease. The E.S.R. was 3 mm in one hour. The depression remitted in hospital without specific treatment, but in view of the history of a recurrent affective disorder lithium carbonate was prescribed. Satisfactory blood levels were established without difficulty and she was discharged apparently well.

Seven weeks after beginning lithium, however, she complained of mild depression, tingling in the hands, and a hoarse voice. She returned a week later, when she was unequivocally myxoedematous, complaining of drowsiness and undue sensitivity to cold, with swelling of face, fingers, and ankles, moderate soft thyroid enlargement, a hoarse voice, exertional dyspnoea, bradycardia, and definitely delayed tendon reflexes. The P.B.I. was 0.8 μg /100 ml, and the E.S.R. 4 mm in one hour. She had stopped lithium three days previously. No treatment was prescribed, and she was closely observed as an outpatient. Two months later she was clinically euthyroid except for a mild improving bilateral carpal tunnel syndrome. Three months after stopping lithium the P.B.I. was 3.4 μg /100 ml, and after a further four months it had risen to 4.0 μg /100 ml. During the subsequent two years she required medical attention for mild depressive episodes, none of which

necessitated admission. She otherwise remained well, and on examination 26 months after stopping lithium was without any symptoms or signs of thyroid disorder except for a unilateral mild carpal tunnel syndrome. At that time the P.B.I. was 4.2 μg /100 ml.

Comment

Lithium administration may be followed, sometimes within a few weeks, by a decrease in the amount of thyroxine secreted by the thyroid (Sedvall *et al.*, 1968; Shopsy, 1970). A few patients develop goitre, usually as a "late" side effect occurring after months or years of lithium therapy (Schou *et al.*, 1968). There have been few reports of overt hypothyroidism. Wiggers (1968) reported the occurrence of clinical and biochemical myxoedema in a patient five months after beginning lithium. Shopsy *et al.* (1969) described the case of a middle-aged woman who was found to be hypothyroid with a goitre after taking lithium for two years. Investigation suggested that she suffered from an underlying chronic thyroiditis. Rogers and Whybrow (1971) described two cases of clinical hypothyroidism, one developing after 20 months and the other after three months of lithium therapy. Both patients, however, had received a variety of other psychotropic drugs, and in the second case symptoms suggestive of hypothyroidism were noted before treatment with lithium was begun.

While these studies suggest that the thyroid abnormalities associated with lithium therapy are not only unusual but relatively mild, this case shows that severe and potentially dangerous hypothyroidism can develop rapidly in a patient in whom there was no clinical or biochemical evidence before treatment began to suggest thyroid insufficiency. It adds pertinence to the request of the U.S. Federal Food and Drug Administration that thyroid function be assessed both before lithium treatment and at regular intervals while it continues. Perhaps this procedure should be adopted more widely in Britain.

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