Myxoedema presenting as epilepsy

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Summary

A case of myxoedema presenting as epilepsy is described. In myxoedematous patients without demonstrable cause for their fits, the epilepsy commonly responds to thyroid replacement therapy alone. In this patient, control of hypertension was ineffective in eradicating fits. The association between myxoedema and epilepsy, though previously reported, is surprisingly uncommon and represents a good prognosis within new epileptics.

KEY WORDS: myxoedema, epilepsy.

Introduction

Epilepsy presenting for the first time in the over-65s, in the absence of a space-occupying lesion, is often attributed to cerebrovascular disease. We describe a case where fits occurred for the first time in a 69-year-old woman and in whom there were no further attacks following treatment of her myxoedema.

Case report

A 69-year-old right-handed woman presented in March 1982 having suddenly become confused and unsteady at home. She subsequently had a grand mal fit in the ambulance. Her blood pressure was 200/100 mmHg, heart rate 92/min (sinus rhythm) and temperature 36.8°C. There were no carotid bruits and no papilloedema. There was a right-sided flaccid paralysis and no response to painful stimuli on that side. There were bilateral extensor plantar responses. A further grand mal fit occurred and she was given diazepam 10 mg intravenously. Twelve hours later she had regained consciousness but the abnormal plantar response and a mild expressive dysphasia persisted for a further 24 hr. Reflexes were symmetrical without a slow-relaxing phase. Further enquiry revealed a gradual increase in weight and lack of energy over, approximately, the previous 5 years. Her

facial appearance had changed and her hair had become coarse.

Investigations revealed haemoglobin concentration 13.5 g/dl and white cell count 6.8×10^9 /litre. Urea, electrolytes, glucose and liver function tests were all within normal limits. The serum sodium was 137 mmol/litre and the calculated osmolality 295 mosmol/litre. Serum thyroxine was low at 37 nmol/litre (normal range 50-140 nmol/litre) and thyroid-stimulating hormone was 39.3 mu/litre (normal range less than 5 mu/litre). Antibodies to thyroid microsomes were present in a titre of 1 in 1,600,000. Fasting triglycerides were 1.5 mmol/litre (normal range 0.2-1.6) and cholesterol was raised at 8.62 mmol/litre (normal range 3-6.5 mmol/litre). Chest X-ray showed cardiomegaly and a computed tomographic (CT) brain scan was normal. The electroencephalogram was diffusely abnormal with irregular theta activity over much of the left hemisphere.

The blood pressure was controlled with methylglucamine and cyclopentiazide and potassium chloride (Navidrex K). She sustained a further grand mal fit before commencement of thyroxine, at which time her blood pressure was controlled at 140/90 mmHg. Oral anticonvulsants were not prescribed.

Follow-up at 10 months revealed a weight loss of 8 kg and no further fits. She continued to require hypotensive therapy when euthyroid.

Discussion

In myxoedema coma, fits occur in 20-35% of cases and are considered a grave prognostic sign (Blum, 1972). However, in the absence of coma, epilepsy associated with myxoedema has been described only infrequently (Evans, 1960; Jellinek, 1962). The distinction is important as the fits of otherwise uncomplicated myxoedema carry a good prognosis and usually cease with institution of thyroid replacement therapy. There is a single report of myxoedema coma presenting in status epilepticus, though in this instance with a favourable outcome (Wood and Holmes, 1977).

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The pathogenesis of epilepsy in myxoedema remains unclear. A ^{133}Xe inhalation technique failed to show significant improvement in cerebral cortex perfusion rates in 6 patients following treatment of their myxoedema (O'Brien and Harris, 1968). In addition, observations in rats suggest that seizure potential varies with thyroid function independently of metabolic rate. If the occurrence of epilepsy in myxoedema is then due to a direct effect of thyroxine—or rather its lack—on membrane excitability, it is perhaps surprising that it does not occur more often.

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