Clinical Reports

Parathyroid hyperplasia associated with thymoma

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Summary: The case of a 65 year old female with myasthenia gravis and hypercalcaemia is presented. Failure of medical control of the myasthenia necessitated thymectomy at which time parathyroid exploration was also carried out. This revealed parathyroid hyperplasia and a thymoma. This association has not been previously documented in the literature.

Introduction

The aetiology of primary hyperparathyroidism is uncertain. We report a case of parathyroid hyperplasia associated with a thymoma. We can find no previous published report of such an association.

Case report

A 65 year old female was diagnosed as having myasthenia gravis in 1981. This was successfully managed with pyridostigmine and propantheline. At that time her serum calcium was normal (2.59 mmol/l). In 1983 her serum calcium was noted to be raised at between 2.66 and 2.74 mmol/l. An endocrinological consultation was arranged at this point and the possibility of benign familial hypercalcaemia was considered, though hyperparathyroidism was not ruled out. An expectant policy was adopted and the patient's calcium level has varied between 2.6 and 2.8 mmol/l since that time. Over the years three parathyroid hormone assays all showed detectable levels of the hormone, within the normal range. As a result, it was thought that the patient had mild primary hyperparathyroidism.

At the beginning of 1987 she began to develop some difficulties with chewing and swallowing and limb weakness consistent with deterioration of the myasthenia gravis. This did not respond to medical management and she was referred to the surgical endocrine unit for thymectomy. It was felt that parathyroid exploration was justified as part of this procedure. The parathyroids were approached through a cervical incision and four parathyroids were identified. Micro-

scopy of frozen sections of biopsies from each gland revealed nodular hyperplasia and three and a half glands were removed. The cervical extension of the thymus was mobilized through the cervical incision and the rest of the gland was removed through a median sternotomy. At operation, a hard mass was felt in the thymus which necessitated removal of a patch of pericardium to which this mass was stuck. At routine histological examination the left superior gland measured $10 \times 6 \times 4$ mm and the left inferior and right superior measured $7 \times 5 \times 3$ mm each. Each gland contained multiple nodules composed of chief or oxyphil cells. The intervening parathyroid tissue looked unremarkable in many areas and contained abundant fat. The patient herself was well nourished and was nearly 10% over her ideal weight for height. From these findings the diagnosis of nodular hyperplasia was confirmed. Histopathological examination of the thymus revealed a lymphocytic thymoma which is probably benign. Postoperatively her serum calcium level returned to normal and her general well being and strength improved. The dose of her myasthenic drugs is at present being reduced.

Discussion

Thymoma is associated with a wide spectrum of diseases, the most common of these being myasthenia gravis, red cell aplasia, non-thymic cancers and hypogammaglobulinaemia.¹ Endocrine disorders associated with thymomas include Cushing's disease, hyperthyroidism, Addison's disease, macrogenitosomia praecox and panhypopituitarism.¹ We believe this to be the first recorded case of hyperparathyroidism associated with thymoma. Carcinoid tumours of the thymus in patients with multiple

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Accepted: 1 November 1988

endocrine neoplasia (types I and II) have been described by many authors²⁻⁵ and most of these cases have been associated with hyperparathyroidism. Despite the recent identification of a specific circulating parathyroid cell growth factor,⁶ the aetiology of parathyroid hyperplasia remains obscure. A possible link in this case between the thymoma and the parathyroid hyperplasia is the secretion of a factor from the thymoma to stimulate the parathyroid glands.

We have no way of knowing what contribution

hyperparathyroidism might have made to the deterioration in the patient's muscle strength but it is now clearly recognized (and objectively shown by measuring maximal isokinetic muscle strength) that hyperparathyroidism may be associated with muscle weakness and that this muscle weakness can be reversed by successful treatment of the hyperparathyroidism.⁷

Though it is impossible to draw any conclusions from one case, we feel it is important to record this association.

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