Pheochromocytoma combined with unusual form of Cushing's syndrome and pituitary microadenoma

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References

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LETTER TO THE EDITOR

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148–151.

Cushing's syndrome. Immunologic assays of tumor tissues have identified the usual cause as ectopic ACTH production (5, 6). In the present case, the serum ACTH level was normal, suggesting that the pituitary microadenoma might not play a major role in the Cushing's phenomena of this patient. Meloni et al. also reported a patient with a benign adenomedullary tumor associated with bilateral adrenal hyperplasia and Cushing's syndrome (7). Our case involved a unilateral pheochromocytoma containing α-MSH and ACTH-immunoreactive material, and a nodular hyperplasia of the adrenal cortex ipsilaterally. Ito et al. detected α-MSH immunoreactivity in a human pheochromocytoma (8). At least six different molecular forms of α-MSH can be found in human pheochromocytomas (J Gardi, personal communication). It can be speculated that ACTH and possibly other products of pro-opiomelanocortin (via the paracrine route) may trigger catecholamine and cortisol secretion from the adrenal medulla and cortex respectively (9). However, this needs to be investigated further.

Urinary catecholamine levels became normal. Histological examination revealed a typical pheochromocytoma exhibiting a pseudoglandular pattern of growth; the tumor cells were aligned around spaces. Part of the removed tissue displayed a nodule of cortical nodular hyperplasia with both clear and compact cells. ACTH immunohistochemistry revealed no positive cells in the tumor tissue; however, HPLC analysis demonstrated ACTH and various forms of α-melanocyte-stimulating hormone (MSH)-immunoreactive material in the tumor tissue.

Besides pheochromocytomas, extra-adrenal paragangliomas have been associated with Cushing's syndrome. Immunologic assays of tumor tissues have identified the usual cause as ectopic ACTH production (5, 6). In the present case, the serum ACTH level was normal, suggesting that the pituitary microadenoma might not play a major role in the Cushing's phenomena of this patient. Meloni et al. also reported a patient with a benign adenomedullary tumor associated with bilateral adrenal hyperplasia and Cushing's syndrome (7). Our case involved a unilateral pheochromocytoma containing α-MSH and ACTH-immunoreactive material, and a nodular hyperplasia of the adrenal cortex ipsilaterally. Ito et al. detected α-MSH immunoreactivity in a human pheochromocytoma (8). At least six different molecular forms of α-MSH can be found in human pheochromocytomas (J Gardi, personal communication). It can be speculated that ACTH and possibly other products of pro-opiomelanocortin (via the paracrine route) may trigger catecholamine and cortisol secretion from the adrenal medulla and cortex respectively (9). However, this needs to be investigated further.

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