Neurol Med Chir (Tokyo) 36, 818~821, 1996

Double Pituitary Adenoma

—Two Case Reports—

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Abstract

A 43-year-old male and a 39-year-old male presented with multiple pituitary adenomas with two distinct histological types. The first patient who had multiple endocrine neoplasia type 1 had developed acromegaly due to a growth hormone-releasing hormone (GHRH)-producing pancreatic tumor. Both plasma GHRH and growth hormone (GH) levels decreased to normal after resection of the pancreatic tumor. However, the plasma GH level gradually increased again and magnetic resonance imaging revealed pituitary adenoma formation. Histological examination revealed two different histological types of pituitary adenoma: GH cell adenoma and null cell adenoma. The second patient, with no such genetic condition, had a non-functioning pituitary adenoma. Histological examination revealed two different histological types of silent GH cell adenoma and silent gonadotroph adenoma. Careful histological examination is required to exclude the possibility of multiple pituitary adenomas.

Key words: pituitary adenoma, double pituitary adenoma, multiple endocrine neoplasia type 1

Introduction

Pituitary adenomas with multiple histological types have rarely been discussed. The fragmentation of specimens of adenoma tissue obtained by the transsphenoidal approach may make accurate diagnosis of multiplicity more difficult. Therefore, the actual incidence of double pituitary adenomas in surgical material is unknown. However, almost all pituitary adenomas are solitary tumors with a histologically uniform pattern[6,8] including plurihormonal adenoma.[5,12,16] Therefore, accurate histological diagnosis of pituitary adenoma is considered possible even based on small tumor fragments. Accurate histological diagnosis of plurihormonal pituitary adenomas is also possible based on tumor fragments.[3-5,7,16,18] Multiple pituitary adenoma is usually detected at autopsy,[2,9,11,13,14,17] with an incidence of 8.9% in one large series.[9] When adenoma fragments showed dissimilar histological and immunohistochemical features, two different types of adenomas can be recognized.[10]

Here we describe two cases of histologically double pituitary adenoma and discuss the combinations of immunohistochemical subtypes.

Received February 8, 1996; Accepted June 11, 1996

Case Reports

Case 1: A 43-year-old male was admitted to our hospital with increased pituitary mass and an elevated plasma growth hormone (GH) level in September 1992. His past history was notable for multiple endocrine neoplasia (MEN) type 1. He was found to have primary hyperparathyroidism when aged 31 years. Parathyroidectomy was performed three times between 31 and 34 years to control hypercalcemia caused by primary hyperparathyroidism. Thereafter, he developed acromegalic features. Abdominal computed tomography disclosed a tumor mass in the tail of the pancreas. Hormonal examination revealed elevated plasm GH-releasing hormone (GHRH) level, suggesting that the pancreatic mass was