

Adrenal incidentalomas showing unilateral concordant visualization by adrenocortical scintigraphy: Comparison with adenomas in Cushing's syndrome

Atsushi TANI, Masayuki NAKAJO, Shinsaku TSUCHIMOCCHI,
Yoshiaki NAKABEPPU and Tomokazu UMANODAN

Department of Radiology, Faculty of Medicine, Kagoshima University

An adrenocortical adenoma causing Cushing's syndrome (Cushing's adenoma) produces a unilateral concordant visualization (UCV) imaging pattern in which the adenoma is only visualized on radioiodocholesterol adrenocortical scintigraphy. But because this imaging pattern is also noted in some patients with adrenal incidentalomas, we examined whether the UCV-incidentaloma was essentially identical with Cushing's adenoma and would develop Cushing's syndrome. The subjects were 9 patients with UCV-incidentalomas (mean size, 30 mm; range, 20–45 mm) and 6 patients with Cushing's adenomas (mean size, 28 mm; range, 25–35 mm). Endocrinological evaluations showed several abnormalities including blunted diurnal rhythm of plasma cortisol within the normal range, low plasma ACTH and/or high 24-hr urinary 17-OHCS levels in 8 of 9 patients with UCV-incidentalomas, but these abnormalities did not meet the diagnostic criteria of Cushing's syndrome. Adrenal uptake of the tracer in the patients with UCV-incidentalomas was not statistically different from that in the patients with Cushing's adenomas and had no relationship with hormonal values in either patient group. Tumor size on CT correlated with the levels of 24-hr urinary 17-OHCS ($r = 0.75$, $p = 0.02$) and plasma cortisol at 7 : 00 ($r = 0.82$, $p = 0.007$) in the patients with UCV-incidentalomas, but not in the patients with Cushing's adenomas. Although 3 UCV-incidentalomas increased slightly in size, none of 9 patients with UCV-incidentalomas has developed Cushing's syndrome for 4 to 52 months. These results suggest that the UCV-incidentaloma may be essentially different from the Cushing's adenoma and unlikely to develop Cushing's syndrome.

Key words: adrenal gland, incidentaloma, Cushing's syndrome, radioiodocholesterol