

A series of noninvasive evaluations for bilateral adrenal tumor

Kenji Hirata · Kouzou Kubo

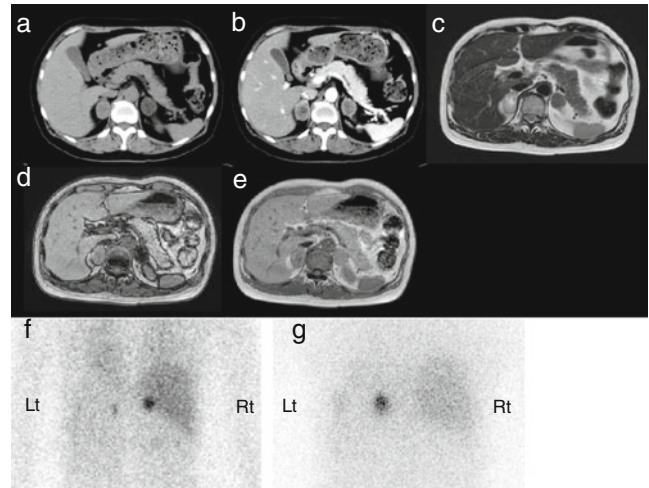
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We present an educational case of bilateral adrenal tumor. A 52-year-old woman underwent abdominal ultrasonography for screening purposes, which detected bilateral adrenal tumor. On non-contrast-enhanced CT, the left adrenal tumor had a low-density area indicating a fatty component (a). Contrast-enhanced CT revealed central necrosis in the right adrenal tumor (b). T2-weighted MR imaging showed that the right tumor had high intensity (c). The left tumor appeared with lower intensity on in-phase MR imaging (d) compared to out-of-phase MR imaging (e), indicating a fatty component. ^{123}I -metaiodobenzylguanidine (MIBG) highly accumulated in the right tumor with preserved physiological uptake in the left tumor (f). The left tumor showed high uptake of ^{131}I -adosterol with no accumulation in the right tumor (g). These results of scintigraphy, consistent with CT and MR findings, suggested that the left tumor was an adrenocortical adenoma and that the right tumor was a pheochromocytoma [1]. Laboratory tests revealed elevated urine metanephrines but normal corticosteroids.

The patient underwent laparoscopic right total adrenalectomy. The right tumor was pathologically diagnosed as a pheochromocytoma with no malignancy. The left tumor was not resected.

Surgery is the primary treatment for pheochromocytoma [2]. In contrast, operation is not recommended for hormonally inactive adrenocortical adenoma less than 4 cm in diameter [3]. This patient had bilateral adrenal tumors, which confused the diagnosis and treatment planning because pheochromocytoma occasionally involves bilateral adrenal glands, especially in multiple endocrine neoplasia [4]. A thorough series of

noninvasive imaging techniques consisting of CT, MRI, and dual adrenal scintigraphy avoided unnecessary and invasive bilateral tumorectomy and thus prevented adrenal dysfunction.



References

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K. Hirata (✉)
Department of Nuclear Medicine, Graduate School of Medicine,
Hokkaido University,
Kita 15, Nishi 7, Kita-Ku, Sapporo, Japan
e-mail: khirata@med.hokudai.ac.jp

K. Kubo
Department of Radiology, Tomakomai City Hospital,
5-20, Shimizu-cho 1, Tomakomai, Japan