Part II Clinical Cases

2 Adrenal Cancer

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Case 2.1

History

72-year-old male with previous resection of right adrenal carcinoma, who is being evaluated for recurrent disease.

Findings

There is a large right posterior lobe liver mass (*Figures 2.1.1 and 2.1.2*) measuring 10 cm × 9 cm. Above it, there is a satellite mass of 4.4 cm diameter in the dome of the right lobe of the liver. The left lobe appears uninvolved. The mass extends into the retroperitoneum with intrinsic involvement of the uppermost portion of the right kidney. There appears to be extension into the right renal vein with the mass also adjacent to the right lateral margin of the inferior vena cava. The entire complex is intensely hypermetabolic, consistent with recurrent adrenal carcinoma. No distant metastatic disease is apparent. Incidental notation is made of thoracolumbar scoliosis with asymmetrical disc disease.

Impression

Large intensely hypermetabolic recurrence of right adrenal carcinoma with a 10 × 9 cm mass involving the right lobe of the liver and a satellite mass extending into the dome of the right lobe. There is extension into the upper right kidney and apparent involvement of the right renal vein. The mass extends to the right lateral margin of the inferior vena cava. No distant metastatic disease is evident.

Pearls and Pitfalls

- *PET/CT is an effective tool for determining the extent of tumor recurrence.*[1–3]
- *The sensitivity for adrenal cancer approaches 100% with 94% specificity, and 96% accuracy.*[1–3]

Discussion

The incidence of **adrenal carcinoma** is 1 in 700,000 in the adult population. Most are identified as large, 5 cm or greater, in diameter. The majority (50% to 80%) of the cases

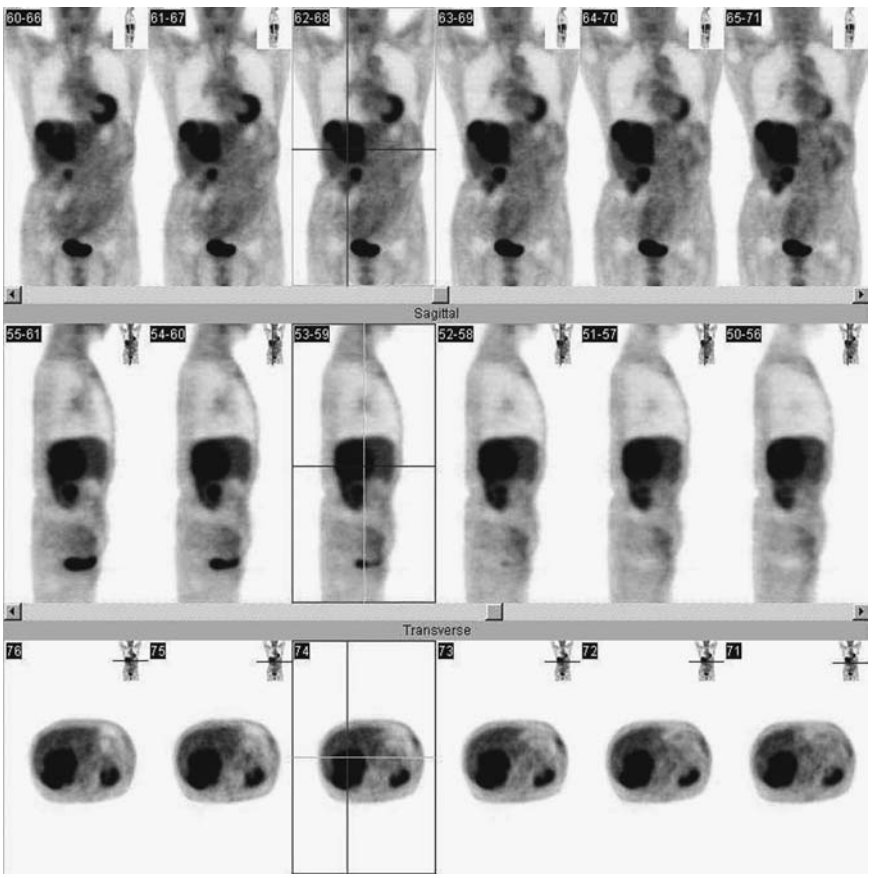

FIGURE 2.1.1.

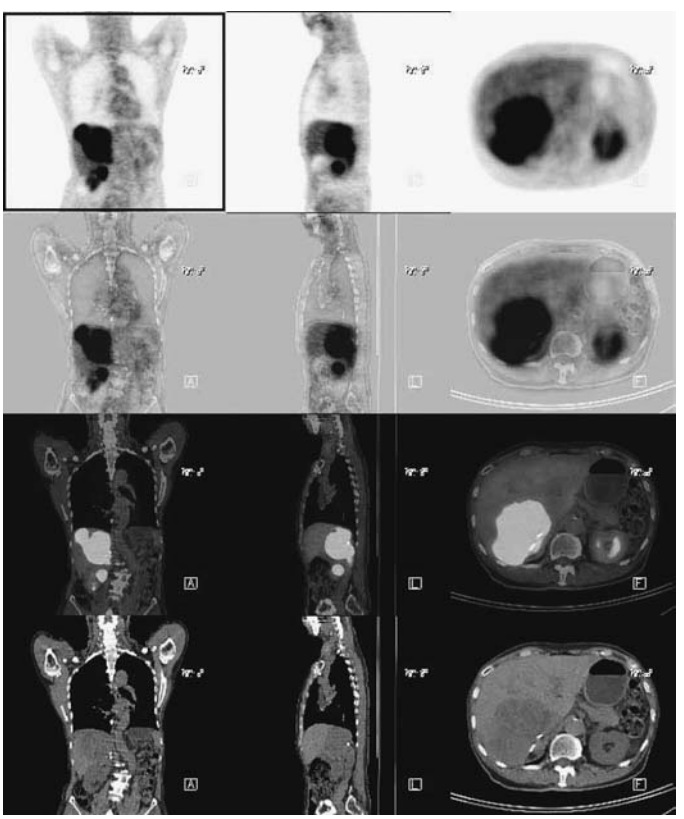

FIGURE 2.1.2.

are functional tumors. Most patients have a clinical presentation of Cushing's syndrome. This cancer peak is in the fourth and fifth decades of life. CT is an excellent tool for the diagnosis of an abdominal mass, with 30% of the patients presenting with calcification. Exophytic renal masses and exophytic pancreatic tail masses are common false-positives on CT. MR can demonstrate the mass as low signal intensity on T1-weighted images and higher intensity on T2-weighted images. However, large adrenal adenomas can be falsely identified as adrenal cortical carcinomas. Ultrasonography can demonstrate the mass with heterogeneity and cystic components suggestive of hemorrhage and necrosis. MIBG (radiolabeled metaiodobenzylguanidine) scintigraphy can differentiate neuroblastomas and pheochromocytomas from adrenocortical cancer. Angiography can be helpful differentiating the tumors from hypernephromas based on vascular characteristics.

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