Pheochromocytoma-Induced Cardiomyopathy

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Pheochromocytoma-Induced Cardiomyopathy

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A 34-year-old woman presented with recurrent 15-minute episodes of palpitations, lightheadedness, and chest tightness. ECGs obtained during these episodes revealed striking global T-wave inversions that resolved spontaneously 2 hours after each episode (Figure 1). Echocardiography revealed severe left ventricular dysfunction with an estimated ejection fraction of 20%. Cardiac catheterization demonstrated angiographically normal coronary arteries. A 24-hour urine collection for catecholamines showed an epinephrine level of 227 μg (normal, 2 to 24 μg) and a metanephrine level of 3803 μg (normal, 95 to 475 μg). Abdominal/pelvic MRI identified a right adrenal mass (Figure 2). ^{123}I-MIBG scintigram showed marked uptake in a single location corresponding to the right adrenal gland (Figure 3). The patient was diagnosed with an epinephrine-secreting pheochromocytoma and underwent an uncomplicated right adrenalectomy (Figure 4). Three months after surgery, the patient was asymptomatic. A repeat echocardiogram revealed normal ventricular function, and urine catecholamines remained negative.

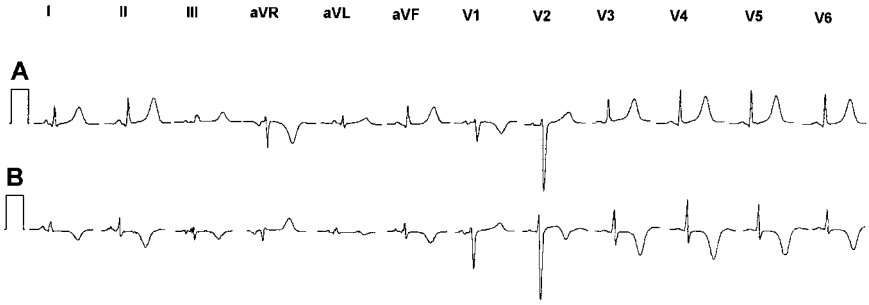

Figure 1. A, Baseline ECG obtained while patient was asymptomatic. B, ECG captured during a symptomatic episode reveals diffuse T-wave inversions.

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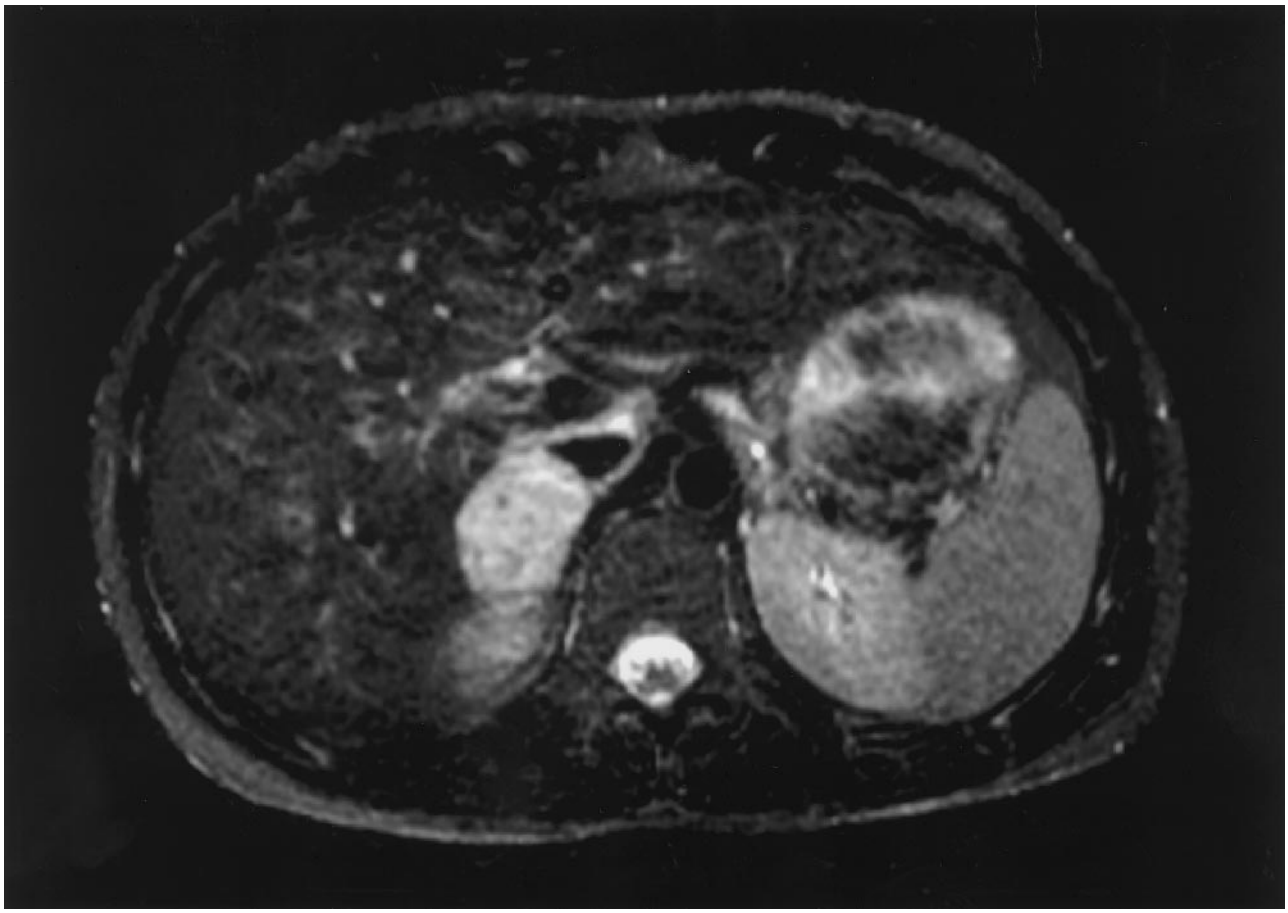

Figure 2. T2-weighted MRI reveals 3.2×2.8×3.6-cm high-signal lesion in right adrenal gland.

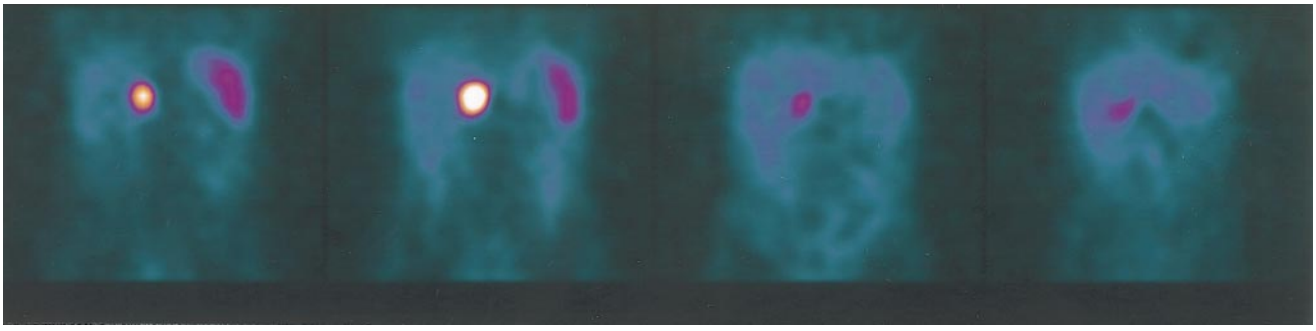

Figure 3. Twelve-millimeter coronal slices of ^{123}I-MIBG abdominal scintigram. Note marked uptake below liver at level of right adrenal gland.

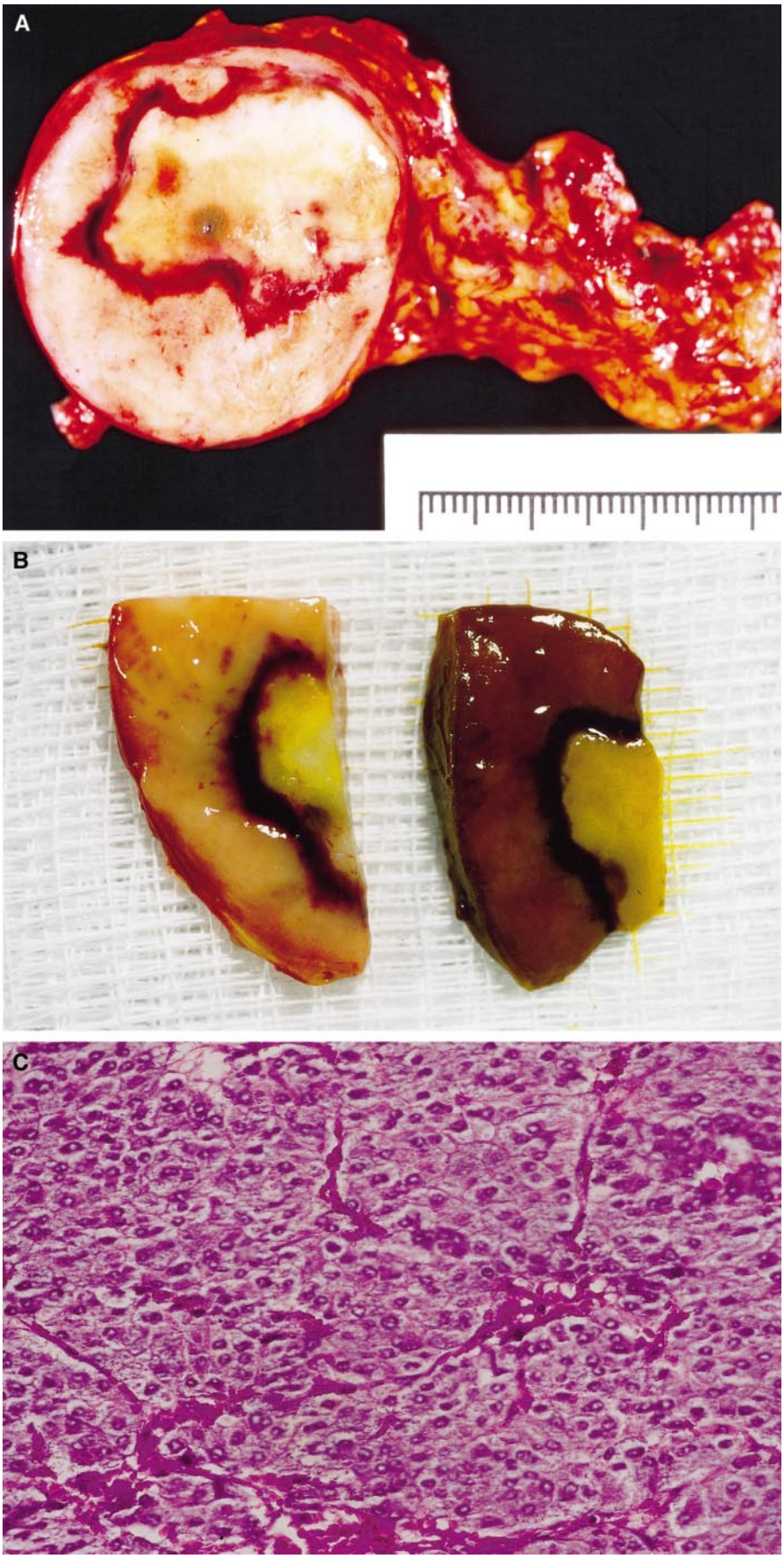

Figure 4. Right adrenalectomy surgical specimen containing pheochromocytoma. A, Gross appearance of bisected 32-g adrenalectomy specimen containing well-circumscribed 3.8-cm tumor with adjacent compressed uninvolved adrenal gland (top right). Necrosis is present, consisting of a 2.5×1.8-cm yellow area within mass surrounded by hemorrhagic rim. B, Portion of tumor before (left) and after (right) immersion in potassium dichromate solution demonstrating characteristic chromaffin reaction (brown) of pheochromocytoma. C, Microscopic appearance of pheochromocytoma consisting of relatively uniform cells with abundant cytoplasm and centrally placed nuclei separated into clusters by vascularized stroma.