

# HOSPITAL PHYSICIAN®

## GENERAL SURGERY BOARD REVIEW MANUAL

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## Diagnosis of Functioning and Nonfunctioning Tumors of the Adrenal Gland

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#### I. INTRODUCTION

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For many years, adrenal lesions were most frequently discovered after patients presented with one of several classic syndromes associated with hormone excess or with signs and symptoms related to an abdominal mass. In recent years, with the increased use of various imaging modalities (including ultrasound, computed tomography [CT], and magnetic resonance imaging [MRI]), “silent” adrenal masses have become more frequently encountered.

This is the first part of a 2-part review on tumors of the adrenal gland. The first part describes the approach to adrenal lesions, including confirming the diagnosis in symptomatic patients and determining the functional status of the lesion using a combination of biochemical and nuclear medicine studies. The second part describes the assessment of adrenal lesions using various imaging modalities, assessing the risk of malignancy, determining the need for operative therapy, and choosing the appropriate operative approach. A case patient is presented in each part to highlight features of the management of patients with adrenal masses. Sample board review questions and answers are provided for self-assessment in the second part of the review (“Management of Functioning and Nonfunctioning Tumors of the Adrenal Gland,” Volume 7, Part 3).

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#### II. CASE PATIENT I

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##### PRESENTATION

Patient 1 is a 33-year-old woman with a history of recurrent kidney stones who presents to her internist with an episode of renal colic. A computed tomograph of the abdomen is obtained as part of her evaluation for a recurrent kidney stone. In addition to confirming the presence of a kidney stone (which she eventually passed spontaneously), an incidental 4-cm mass is identified in the right adrenal gland (**Figure 1**). Her medical history is pertinent for depression for which she is taking fluoxetine and buspirone. She reports problems with large mood swings and describes herself as being “oversensitive.” A review of systems reveals that she also has progressive weight gain, palpitations, tremulousness, and easy bruising.

Physical examination reveals a blood pressure of 130/96 mm Hg as well as multiple bruises on her trunk and extremities. She also has violaceous striae on her abdomen, a prominence of cervicodorsal adipose tissue, a rounded face, and truncal obesity. Her diagnostic evaluation yields the following test results: serum potassium of 4.3 mEq/L; a 24-hour urine sample for vanillylmandelic acid (VMA) and metanephrines, which were normal; and a 1-mg overnight dexamethasone