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Adrenal

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A Case of Aldosterone- and Cortisol Co-secreting Adrenal Corticol Neoplasm with Lipomatous and Myeiolipomatous Metaplasia

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Background: Adrenal lipomatous tumors are uncommon fatty tumors of theadrenal glands with myelolipoma being the most common histologic feature.Adrenal myelolipoma is a benign adrenal cortical neoplasm composed of fat andmyeloid tissue, commonly diagnosed if fat composition of tumor is more than 50% on cross-sectional imaging studies. The myelolipomatous metaplasia is asecondary degenerative change in primary adrenal tumor, usually seen in benignadrenocortical adenomas and rarely in adrenocortical carcinomas and corticalneoplasms of uncertain malignant potential. Adrenocortical neoplasms areclassified as benign or malignant based on modified Weiss score, when the criteriaare not clear, the tumor is classified as a neoplasm of uncertain malignant lesion.As adrenal lipomatous tumors are usually benign and non-functional, patients withthese tumors often do not undergo hormonal evaluation.

Clinical Case: A 58-year-old female with a history of hypertension diagnosed atage 35 years, on five antihypertensive agents and a history of intermittentspontaneous hypokalemia, was found to have a 6 cm left adrenal myelolipoma onnon-contrast computed tomography of the abdomen performed when she presentedfor left flank pain due to nephrolithiasis. The biochemical evaluation showedpotassium of 2.8 meq/l, plasma aldosterone of 65.9 ng/dl with plasma renin activityof 0.1 ng/ml/hr. An overnight 1 mg dexamethasone suppression test showed nonsuppressible serum cortisol of 10.8 μg/dl. DHEAS, and ACTH were measured at24.5 μg/dl and <5 pg/ml, respectively. Left adrenalectomy was performed and onthe following day, morning serum cortisol was 2.3 μg/dl with aldosterone of 6.2ng/dl and plasma renin activity of 4.2 ng/ml/hr. Expectedly patient beganexperiencing nausea, and postural dizziness. Patient systolic blood pressure was inlow100 mmHg. Thus, hydrocortisone therapy was initiated. Immediatelypostoperatively and thereafter, her blood pressure was controlled with noantihypertensive agent, and morning cortisol measured without hydrocortisone for~36 h remained low at 1.2 μg/dL. Pathology showed adrenal cortical neoplasm ofuncertain malignant potential with associated lipomatous and myelolipomatousmetaplasia without atypical mitoses, or lymphovascular invasion, or necrosis, orcapsular invasion, with negative surgical margins. Although mitotic activity in thetumor is lacking, the tumor was designated uncertain malignant potential due to thelarge size (7 cm), and lack of clear cells < 25% according to modified Weiss score.

Conclusion: We report a rare case of aldosterone and cortisol co-secreting adrenalcortical neoplasm of uncertain malignant potential with lipomatous andmyelolipomatous metaplasia. While the majority of cases of myelolipoma arebenign and non-functioning, this case emphasizes the importance of looking forsymptoms and signs pointing to adrenal hyperfunction, thorough hormonal andmorphologic evaluation and, definitive treatment is curative unilateraladrenalectomy.

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