

Aldosterone- and cortisol-co-secreting adrenal adenoma in an adolescent girl: a case report

Serap Baydur Sahin¹, Ahmet Hamdi Aktan², Osman Zikrullah Sahin³, Ahmet Fikret Yucel⁴, Teslime Ayaz², Ekrem Algin¹

¹ Recep Tayyip Erdogan University Medical School, Department of Endocrinology and Metabolism Disease, Rize, Turkey

² Recep Tayyip Erdogan University Medical School, Department of Internal Medicine, Rize, Turkey

³ Recep Tayyip Erdogan University Medical School, Department of Nephrology, Rize, Turkey

⁴ Recep Tayyip Erdogan University Medical School, Department of General Surgery, Rize, Turkey

Objectives:

Primary aldosteronism (PA) is the most common reason for secondary hypertension. Among adrenal disorders, rarely aldosterone- and cortisol-co-secreting adenomas (A/CPA) can lead to PA. 35 patients with A/CPA were reported to date and their mean age was 52 (range 34–80) years. We report an A/CPA in an adolescent girl presenting with hypertension combined with hypokalemia and signs of hypercortisolism.

Methods:

We evaluated the physical examination, laboratory and computed tomography findings of the patient.



Figure 1 Computed tomography of adrenal glands shows a 24x14 mm hypodense solid lesion in the right adrenal gland

Results:

A 18-year-old girl admitted to endocrinology outpatient clinic with the complaint of hypertension. Physical examination revealed central obesity (BMI:31 kg/m²), moon face, hirsutism, buffalo hump and abdominal striae. Her blood pressure was 170/110 mmHg. Laboratory examination revealed serum potassium level of 2.4 mEq/L. The mean aldosterone to renin ratio was 308 (aldosterone: 98.77 ng/dl, plasma renin activity (PRA): 0.32 ng/mL/hour). Intravenous saline infusion test was performed as the confirmatory test. Her post-infusion aldosterone level was 80.69 ng/dL. While the midnight serum cortisol level was 7.6 g/dL, her serum cortisol levels failed to suppress during a 1 mg dexamethasone suppression test (DST) (5 g/dL) and 2 mg DST (9.8 g/dL). Serum ACTH and DHEA-S levels were 13.1 pg/ml and 11.12 g/dL (N: 65-368) respectively. Computed tomography of adrenal glands revealed a 24x14 mm hypodense solid lesion in the right adrenal gland (Figure 1). She underwent laparoscopic right adrenalectomy with perioperative steroid replacement. At the postoperative day 4 at 08:00 h, serum cortisol level was 0.6 g/dL and she was put on substitution therapy with oral glucocorticoids. The aldosterone level and PRA were 2.12 ng/dl and 5.59 ng/ml/hour 2 days after the operation, respectively. At the follow-up, her blood pressure and serum potassium level returned to normal.

Conclusions:

Patients with A/CPA may present with overt or subclinical hypercortisolism. Therefore, pre-operative screening of cortisol co-secretion in patients with aldosterone-producing adenomas is important to prevent adrenal crises at the perioperative period.

