

Primary hyperaldosteronism: case presentation

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Introduction

Hypertension, increased aldosterone excretion, suppressed plasma renin activity characterize the syndrome of primary aldosteronism. We should consider testing for primary aldosteronism in the presence of hypertension and hypokalemia, resistant hypertension, adrenal incidentaloma, onset of hypertension at a young age (<20 y), severe hypertension and whenever considering secondary hypertension.

Case presentation

We presented the case of a 38 years old woman who was admitted in the National Institute of Endocrinology C.I. Parhon Bucharest for the evaluation of high blood pressure. She has high blood pressure for 10 years (maximum value 190/100 mm Hg) and she is on β blocker and angiotensin II receptor blockers. She has no other medical history and her blood pressure is still 150/80 mm Hg on the antihypertensive drugs. She has hereditary antecedents of high blood pressure (her mother has high blood pressure from the age of 56 years). After she has stopped for 4 weeks the antihypertensive drugs, we detected hypokalemia (K: 2,9 nmol/L), normal serum sodium, and normal biochemistry but high levels of serum aldosterone (121 ng/dl) and low levels of serum renin (2 μ UI/ml) with plasma metanephrines and normetanephrines in the upper normal range and normal plasma cortisol with good response after 1 mg overnight dexamethasone suppression test. An adrenal computed tomography has been performed and we discovered a left adrenal mass of 1,2/0,9 cm. We have replaced the β blocker with Spironolactone (200 mg/day) and Amlodipine and on these medications she has high normal blood pressure and normal potassium. The patient was transferred to the surgery where they performed laparoscopic adrenalectomy. Two weeks after surgery she has normal blood pressure and normal sodium and potassium without medications.

Mean value of blood parameters

	Serum Aldosterone (N: 1,76-23,2 ng/dl)	Serum Renin (N: 2,8-39,9 μ UI/ml)	Serum Sodium (N: 137-145 mmol/l)	Serum Potassium (N: 3,5-5,1 mmol/l)
Before surgery	121	2	138	2,9
After surgery	19	10	140	4,1

CT: adrenal adenoma



Conclusions

We presented the case of a woman with primary hyperaldosteronism and although she has high blood pressure for 10 years and we have not expected that it would be entirely corrected after surgery, the patient did not need any antihypertensive drugs after surgery. Average long-term cure rates of hypertension after unilateral adrenalectomy range from 30% to 60%. Persistent hypertension following adrenalectomy is correlated with the duration of hypertension, older age, use of more than two antihypertensive drugs, increased serum creatinine level, having more than one first degree relative with hypertension [1,2]. The current literature does not identify a gold standard confirmatory test for primary hyperaldosteronism. A patient with a positive aldosterone-renin ratio should undergo testing by any of four confirmatory tests (oral sodium loading, saline infusion, fludrocortisone suppression, captopril challenge) [3]. Our patient had the Captopril challenge test but plasma aldosterone did not suppress (2 h after challenge plasma aldosterone was 110 ng/ml). Because laparoscopic adrenalectomy is the treatment of choice for patients with documented unilateral hyperaldosteronism (adenoma or hyperplasia) the distinction between unilateral and bilateral adrenal disease should be made by adrenal venous sampling. CT has its limitations (nonfunctioning unilateral adrenal macroadenomas are not uncommon, hyperplasia may appear normal on CT etc) [4]. Our patient did not have adrenal venous sampling (we don't do it in our center). During the first two weeks after surgery, a generous sodium diet should be recommended to avoid the hyperkalemia that can develop from hypoaldosteronism due to chronic contralateral adrenal gland suppression. In rare instances, temporary fludrocortisone therapy may be required. Blood pressure typically normalizes or shows maximal improvement in 1-6 months after unilateral adrenalectomy but can continue to fall for up to 1 year in some patients [5]. Our patient did normalize her blood pressure practically after 1 month.

References

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