

P-05 – Cushing's disease as a cause for secondary hypertension

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Background:

Hypercortisolemia associated with Cushing's disease is one of the rare causes for secondary hypertension.

Case:

A case of 48-year-old male patient with hypertension, central obesity, insomnia and impotence is presented. Patient presented with rounded and plethoric facial appearance. Initial Overnight 1 mg Dexamethasone Suppression Test demonstrated no cortisol suppression (Cortisol 547 nmol/L) and he was referred to University Clinic of Endocrinology, Diabetes and Metabolic Disorders for further investigation. Baseline laboratory results were ACTH = 101.3 pg/ml, Triglycerides = 1.9 mmol/L, Total Cholesterol = 6.4 mmol/L, HDL = 1.2 mmol/L, LDL = 4.9 mmol/L, Na⁺ = 140 mmol/L, K⁺ = 4.3 mmol/L, Ca²⁺ = 1.19 mmol/L, VMA = 28.9 μmol/dU, Metanephrines = 1.0 μmol/dU. Daily cortisol rhythm was impaired (1200/808 nmol/L, 1600/704.6 nmol/L, 2000/680.0 nmol/L, 2400/730.4 nmol/L, 0600/ 901.0 nmol/L), while High Dose Dexamethasone 8 mg Suppression Test showed cortisol suppression (906 nmol/L...255.1 nmol/L).

Additional tests included OGTT, DXA and chest X-ray with normal findings, abdominal CT with normal findings of adrenal glands, whereas pituitary MRI

demonstrated asymmetry of pituitary with a presence of focal lesion centrally and posteriorly, 3x4 mm.

In addition, CRH Stimulation Test was performed (0': Cortisol = 89.6 nmol/L, ACTH = 86.2 pg/ml, 30': Cortisol = 932.0 nmol/L, ACTH = 175.0 pg/ml, 60': Cortisol = 1100.0 nmol/L, ACTH = 190.5 pg/ml, 90': Cortisol = 1369 nmol/L, ACTH = 345.9 pg/ml, 120' Cortisol = 1550 nmol/L, ACTH = 436.9 pg/ml) in favour of Pituitary Cushing's disease. Blood pressure was above the reference values and treated with an ACE inhibitor (Tbl. Enalapril 5 mg BID) at the beginning of the investigations, and gradually increased to 10 mg BID. After proving the diagnosis of Pituitary Cushing's disease, a radiosurgery with gamma knife was applied to the patient. During the postoperative monitoring of the condition, withdrawal of symptoms occurred. Normalized blood pressure values were recorded and the treatment with ACE inhibitor was discontinued.

Conclusion:

The patient has been investigated for hypercortisolemia according to Sy Cushing diagnostic algorithm and was diagnosed with Pituitary Cushing disease (Morbus Cushing). Radio-surgical intervention led to normalization of cortisol values, thus eliminating the cause of secondary hypertension.

