

Society for Endocrinology, Clinical Update 2007

A Case of Uncontrolled Hypertension.

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A 40 year old previously well HGV driver was referred to cardiology clinic by his GP with uncontrolled hypertension and recurrent hypokalaemia. He had been started on antihypertensive therapy 4 months prior when his blood pressure was noted to be high on an annual check up. This failed to improve despite multiple agents who included Bendrofluazide, Doxazosin, Ramipril and Diltiazem.

On questioning he admitted to mood swings, muscle weakness, fatigue and easy bruising. He had lost a stone in weight, which he put down to healthy lifestyle changes. He denied any other systemic symptoms.

He was an ex-smoker, having stopped just 4 months previously. At diagnosis he had cut out alcohol but recently resumed (6 -10Units/week) in lower quantities.

On examination he was noted to have rounded facial features, a buffalo hump, central adiposity and acanthosis nigricans. Blood pressure was 156/90mmHg. No proximal myopathy, or purple striae.

Initial investigations showed K⁺ 2.7mmol/l, normal full blood count and liver functions. 24 hour UFC >6608, 9am Cortisol 1095, and ACTH 120.1. A glucose tolerance test confirmed diabetes with a baseline glucose of 9.4mmol/l and two hour of 17.6mmol/l. Other pituitary tests were normal GH <0.1, FSH 3.7, LH 2.8, Prolactin 148, TSH 0.9, FT4 18

MRI of the Pituitary gland identified no lesions. An initial CT of Chest and abdomen identified bilateral adrenal hyperplasia and two pulmonary nodules, which were considered inflammatory in nature. A repeat scan 4 months later confirmed resolution of the left nodule, but the right remained, although unchanged in size or shape.

Time/min	Lt PS ACTH	RT PS ACTH	Peripheral ACTH	Peripheral Cortisol
-10	193	180	164	1208
-5	194	177	172	960
5	210	195	170	1151
10	192	212	165	1200
15	205	205	170	1363
20	204	189	189	1344

Inferior petrosal sinus sampling showed a flat response to CRH confirming ectopic ACTH production.

He was started on Metyrapone 750 tds with increasing dose to his

current 1500 tds. He has had some resolution of signs including the bruising and general fatigue. He still remains a multiple agents for hypertension and the mood swings although improved tend to be more evident in the evening.

He has recently had a hydrocortisone day curve to assess the effectiveness of the metyrapone as well as a repeat of his pituitary profile, gut hormone profile, calcitonin, and 24 hour urine for catecholamines, and 5-HIAA. He is awaiting an MRI of the Chest and Abdomen and imaging of his thyroid gland.

Prior to these tests he had been referred for bilateral adrenalectomy but on questioning would rather delay until all investigations to identify a potential source for the ectopic ACTH have been exhausted.