ARMC5 mutation and Cushing syndrome due to bilateral macronodular adrenal hyperplasia – Case Report

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INTRODUCTION

- Bilateral macronodular adrenal hyperplasia ACTH-independent (BMAH) represents less than 1% of the causes of Cushing's syndrome (CS).
- Studies have shown that mutations in the gene ARMC5 are a common cause of family BMAH and are associated with severe clinical disease and the development of meningiomas.

CASE REPORT

Identification: 64 year-old man

Presented to our consult due to Bilateral Macronodular Adrenal Hyperplasia

Past Medical History: Diabetes mellitus, arterial hypertension, dyslipidemia and coronary heart disease
Therapy: Metformin 500mg/sitagliptin 50mg; bisoprolol 5mg; olmesartan 20mg/hydrochlorothiazide 25mg; Simvastatin 40mg; Spironolactone 25mg.

Family history: irrelevant

Physical examination: Excess weight (Weight 81 kg, Height 1.65 m, BMI 29.7Kg/m2), bruising, facial rubeosis, skin atrophy and deposition of cervical dorsal fat

Table 1. Analytical Study

ACTH <1 ng/L (<63.3)
Cortisol after 1-mg overnight dexamethasone suppression test: 27.6 µg/dL
UFC* 520 µg/24 h (VR 36-137)
Cortisol after Low dose dexamethasone suppression test (LDDST): 24 µg/dL

* Urine free cortisol

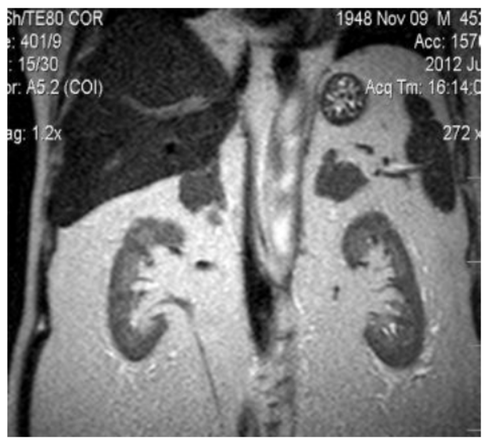

Fig. 1. Abdominal MRI:
Left gland: 4x4.3 cm
Left gland: 4.3x4.2 cm

He underwent research of **ectopic adrenal hormone receptors** with positive response (under β-blocker and angiotensin receptor antagonists) and partial (after discontinuation of these drugs) in the posture test and negative response to the others tests.

April 2015

The patient would be subjected to bilateral **adrenalectomy**, but due a complication during surgery, he performed just right adrenalectomy.

Histological results: Macronodular Adrenal Hyperplasia.

May 2015

Genetic study was preformed and a ARMC5 mutation in heterozygosity (c.1379T>C) was identified in adrenal and blood.

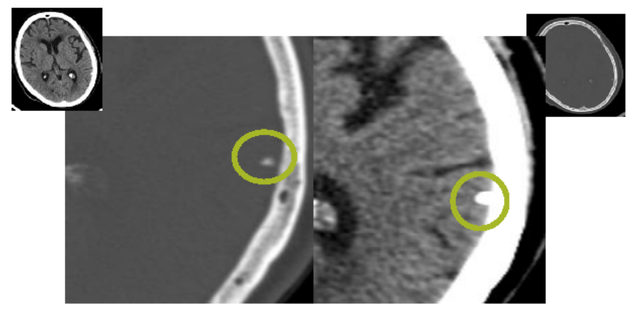

Fig.2. **C**erebral CT performed due to genetic result showed left posterior temporal calcified lesion, placing the hypothesis of **meningioma**

Table 2. Analytical Study after surgery

June 2015	October 2015
ACTH <1 ng/L	ACTH <1 ng/L
UFC 42.2 µg/day	UFC 36.3 µgdL
	Salivar Cortisol (N<0.32)
	0.180 µg/dL
	0.193 µg/dL
	0.169 µg/dL
	0.206 µg/dL

Patient is currently with no evidence of CS

CONCLUSIONS

- Genotyping of ARMC5 gene has important clinical implications in counseling the patient and family: the presence of the mutation helps identify patients at risk of developing CS and other related injuries, allowing early diagnosis and treatment.
- There are cases described of CS remission after unilateral adrenalectomy, so we opted for medical surveillance of the patient.

References:

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