Usefulness of the 4-mg intravenous dexamethasone suppression test in differentiating Cushing disease from pseudo-Cushing syndrome – a case report

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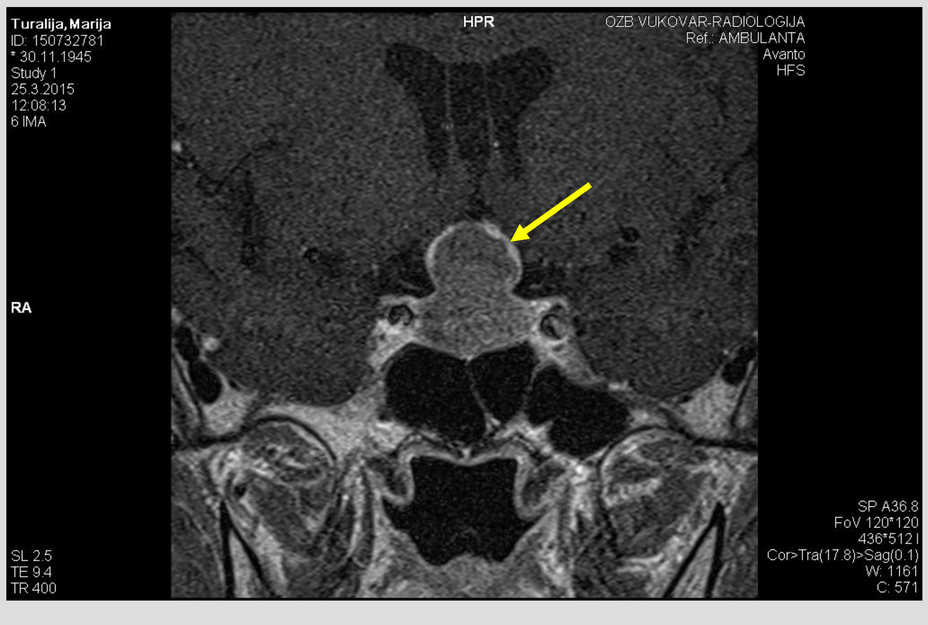
Introduction:

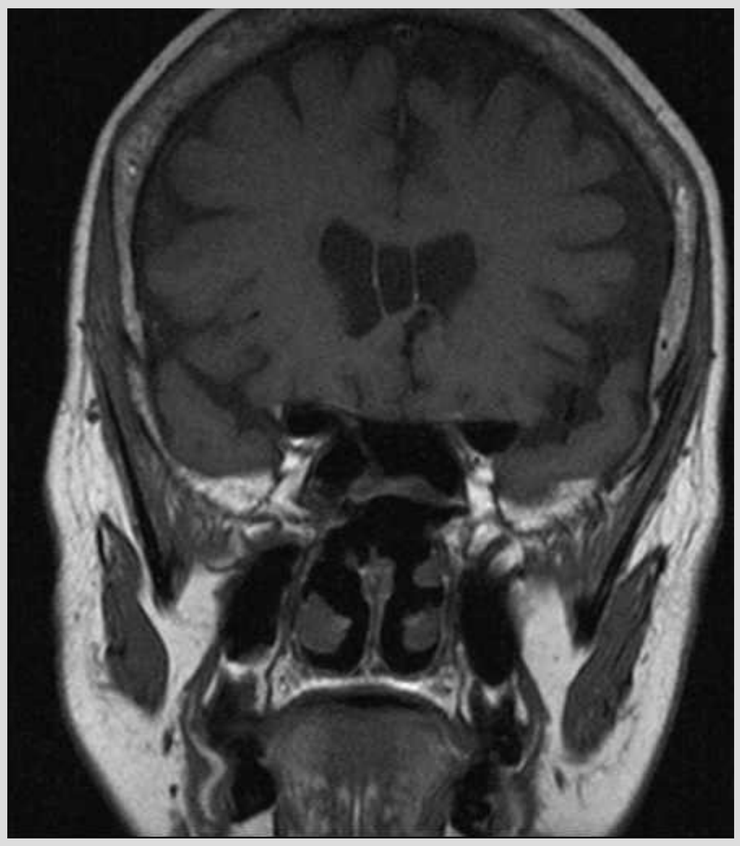
Distinguishing Cushing disease from pseudo-Cushing syndrome still remains a challenge, especially in some specific cases when absorption or compliance of dexamethasone used in diagnostical tests are questionable. Several versions of an intravenous (IV) test have been utilized and serve both in the initial and differential diagnosis of Cushing's syndrome.

Case presentation:

- ➔ a 59 year old patient with macroadenoma of pituitary gland (revealed accidentally on MRI due to dizziness and headaches) 36x18 mm in size, compressing infundibulum and sella, probably adenoma according to radiological characteristics.
- ➔ Her medical history revealed surgical resection of stomach due to a gastrointestinal stromal tumor (GIST) in 1998, arterial hypertension since 1998, and diabetes type 2 (DMT2) diagnosed a year ago adequately regulated with metformine only.
- ➔ On her physical exam, she did not have any signs of endocrinopathy, BMI was 25 kg/m2,
- ➔ Cortisol was not suppressible in the overnight dexamethasone suppression test, followed by the same result in low dose dexamethasone test.
- ➔ Since she did not have any signs of hypercortisolemia except a relatively newly diagnosed DMT2, and absorption of orally ingested drugs was questionable, an IV overnight suppression test with 4 mg of dexamethasone was performed which confirmed diagnosis of Cushing disease (cortisol 421 nmol/l).
- ➔ Other hormone test showed tireotropic and gonadotropic insufficiency.
- ➔ Transsphenoidal surgical removal of tumor was performed and control MRI showed no tumor residua while patohistological finding confirmed diagnosis of corticotropinoma.

Figure 1. **MRI of pituitary gland before neurosurgical intervention (left side) and after the neurosurgical procedure (right side). The yellow arrow points to the hypodense tumor (measured diameter 3,6x1,8 cm) in the sellar and suprasellar area**





Conclusions:

Our patient presented with macroadenoma producing ACTH which are rare especially when presenting as silent macrocorticotropinomas. This is an educative example to keep in mind IV dexamethasone suppression test which could be easy and accurate tool in distinguishing patients with Cushing disease and pseudo-Cushing syndrome while at the same time avoiding the potential difficulties of drug compliance and absorption with oral dexamethasone.

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ECE 2016 318--EP
Clinical case reports - Pituitary/Adrenal
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Poster presented at: ECE2016 28 – 31 May 2016 MUNICH, GERMANY 18th EUROPEAN CONGRESS OF ENDOCRINOLOGY