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Clinical Image

Giant Cystic Prolactinoma in a Woman: Do not Forget the Hook Effect

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Clinical Image

A 43-year old woman was referred to the Endocrinology Clinic for pituitary evaluation after the detection of a suprasellar tumor. She had an unremarkable past medical history, but during interrogation she recalled having absence of menses since 2 years. Three months before she started to have a progressive moderate/severe headache that was accompanied by nausea and occasionally, vomiting. She also referred asthenia, adynamia, fatigue, dry hairiness, excretion dyspnea, decreased libido, vaginal atrophy, and chronic constipation. On physical examination, blood pressure was 145/90 mmHg, hearth rate 72 beats per minute, respiratory rate 12 per minute, temperature was normal, and room air oxygen saturation was 98%. Hair in armpits and pubic area was insignificant, osteotendinous reflex relaxation phase was slow and a low-grade non-pitting generalized edema was observed. Galactorrhea was absent. Visual fields by confrontation were compatible with bitemporal hemianopsia. MRI scan revealed a 5 x 3.5 cm heterogeneous suprasellar mass with an accompanying 8.1 x 3.6 cm cystic component that extended through the right frontal cerebral lobe and that was surrounded by perilesional brain edema (Figures 1-3). Laboratory work up showed a basal cortisol level of 2.2 mg/dL, FSH 3.45 UI/L, LH 3.2 UI/L, estradiol < 0.05 pg/mL, normal IGF-1, and a serum prolactin of 125 ng/mL. Due to the clinical signs of hypogonadism, the image in the MRI and the low/moderate high serum prolactin levels a lactotroph adenoma was suspected and serial dilutions 1:10 and 1:100 were made. Diluted prolactine was 12,500 ng/mL which was consistent with an initial hook effect. Consequently, a giant cystic prolactinoma with a concomitant panhypopituitarism was diagnosed. Treatment with cabergoline 0.25 mg twice weekly along with physiologic dose of prednisone and levothyroxine were started. At two months follow-up, the patient referred less headaches and a discrete improvement in her visual field. Prolactin serum levels decreased to 32.1 ng/mL with a cabergoline total weekly dose of 3.0 mg.

Lactotroph adenomas are the most common type of secreting pituitary tumor. Clinical symptoms and signs of hyperprolactinemia are associated with hypogonadisim that causes infertility, galactorrhea, and oligoamenorrhea in women and decreased libido, erectile dysfunction, infertility and gynecomastia in men [1]. Now rarely seen, giant prolactinomas are tumors ≥ 4.0 cm is size, with a serum prolactin usually ≥ 1000 ng/dl. They are most often seen in men in

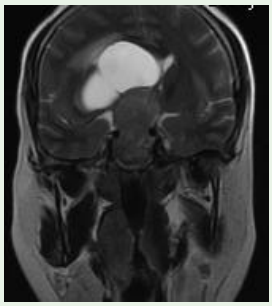

Figure 1

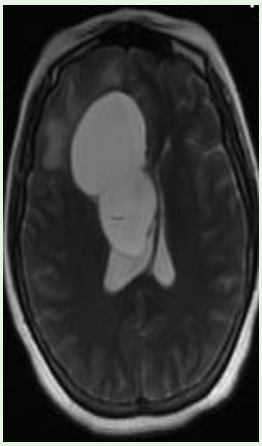

Figure 2

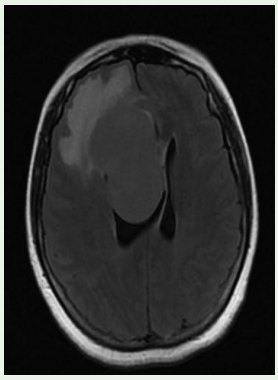

Figure 3

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whom mild signs of hypogonadism can lead to a delayed diagnosis and a progressive growth. On the other hand, cystic prolactinomas correspond to ≤ 1% or all prolactinomas and its association with a giant pituitary macroadenoma in a woman has been seldom reported. Clinically, they don´t differ form non-cystic adenomas, but have been usually associated to have a poor response to dopamine agonists. Nevertheless, the first-line therapy are precisely these agents [2,3]. Serum prolactin assays can greatly underestimate extremely high levels of hormone and can show only a modest elevation due to an artifact in the inmunoradiometric assay, the so called "hook effect" [1]. As in this case, this can be avoided with serial dilutions of the sample. In present case, a high level of suspicion along with low/moderate prolactin levels and the MRI image consistent with a pituitary adenoma made us ask for diluted prolactin samples. If missed, this would have delayed the diagnosis and consequently would have changed the treatment plan and prognosis of the patient.

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