

EXAGGERATED ADRENARCHE AND EXOGENOUS OBESITY: A DIAGNOSTIC CHALLENGE

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INTRODUCTION

Exaggerated adrenarche is an extreme variant of the maturation of the reticular zone of the adrenal cortex, often associated with hyperinsulinemia and obesity. Hyperandrogenism by congenital adrenal hyperplasia and adrenal neoplasms are differential diagnoses.

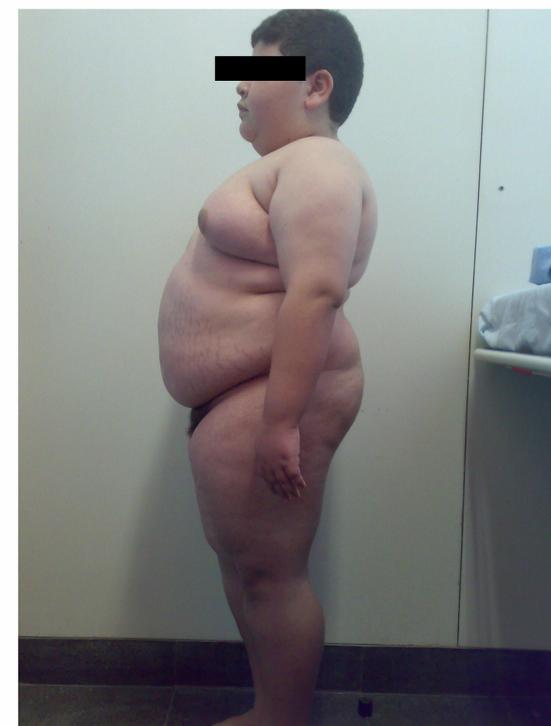
CASE REPORT

Male, 8 years and 3 months, came from another service with diagnosis of precocious puberty and obesity, already being treated with Leuprolide acetate for 1.5 years. His complaint was weight gain and growth of body hair since 5 years old. Physical examination: cushingoid facies, weight 52.5 Kg (BMI 35.9 – Z = +4.87), height 121.5 cm (Z = -1.24), abdominal circumference 99cm, acne, gynecomastia, *acanthosis nigricans*, Tanner stage P5G2, testicles 3 cm³.

Initial exams: Bone age of 10 years (75% mature height), ACTH 43 pg/mL, cortisol 7.6 mcg/dL, urinary cortisol 576mcg/24h (92-478), plasma renin activity 1.2ng/ml/h (0.2-2.8), DHEAS 4080ng/mL (244-2470), adrenal ultrasound, abdomen CT and pituitary gland MRI were normal. Lab work-up: ACTH test results: DHEAS T0 = 4080ng/mL, T60 = 4260ng/mL, Androstenedione T0 = 3.2 ng/mL T60 = 4.6 ng/mL, 17OHPregesterone T0 = 0.6 ng/mL T60 = 7.2 ng/mL (0,59 – 3,44).

It was suggested the hypothesis of Nonclassical Congenital Adrenal Hyperplasia (CAH) due to 3 β -Hydroxysteroid Dehydrogenase and therapy with corticosteroids was started, but turned out unsuccessful. Meanwhile, results of ACTH – stimulated 17OHPregnenolone = 1719 ng/dL (<3000), cortisol (F) = 14 mcg/dL, with 17OH Pregnenolone/F ratio = 0.12 (<67) ruled out this diagnosis.^(3,4) Then, exaggerated adrenarche associated with exogenous obesity became the main hypothesis and patient started treatment with metformin for insulin resistance (HOMA-IR = 7.1), aromatase inhibitor due to the advanced bone age (BA = 13y6m CA = 10y7m) and GH replacement.

The patient reached the final height of 161 cm (Z= - 2.03), in accordance with the prediction, yet below his target height (173.7; Z = - 0.33).



CONCLUSION

Exaggerated adrenarche is considered a diagnosis of exclusion and its association with obesity is becoming more common in the pediatric and adolescent population, which brings a concern for the medical community in terms of treatment options. It may be difficult to make a decision between no medication (“adrenarche”) and aromatase inhibitors plus rhGH. Our patient had a final height below his TH, as opposed to a normal adrenarche that usually do not compromise final height. Further studies are necessary to better clarify this condition.

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