CLINICAL IMAGE

Presentation of severe hirsutism in a young woman with polycystic ovary syndrome

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Hirsutism is an excessive growth of terminal hair that appears in a male pattern in women.[1] The majority of women with hirsutism have polycystic ovary syndrome (PCOS), although other hyperandrogenic endocrinopathies need to be excluded as possible causes.[2] In PCOS, symptoms of androgen excess may be accompanied by ovulatory disturbances, obesity, and insulin resistance.[3]

A 25-year-old woman was admitted to the Department of Internal Medicine and Metabolic Diseases due to excessive hair growth on her face, chest, and abdomen since the age of 15 years. The abnormal hair growth occurred first on her upper lip and then spread to the lateral aspects of the face. She complained of oligomenorrhea and overweight since menarche at the age of 10 years. The family history revealed obesity and PCOS in her sister and type 2 diabetes in her father and paternal grandmother.

On physical examination, the patient presented with obesity (body mass index, 42.3 kg/m^2; waist circumference, 128 cm), mild acne on her back, pale abdominal striae, and significant hirsutism with a modified Ferriman–Gallwey score of 30 points (FIGURE 1A).

Initial laboratory findings showed impaired glucose tolerance in the oral glucose tolerance test. The homeostatic model assessment for insulin resistance (HOMA-IR) index was 1.86. Hormonal diagnostics, performed in the early follicular phase of the menstrual cycle, showed an increased LH/FSH ratio (9.85/4.53 mIU/ml), an elevated total testosterone (TT) concentration (2.98 nmol/l; reference range, 0.25–2.75 nmol/l), a free androgen index of 6.57 (nadir <5), and an elevated dehydroepiandrosterone sulfate (DHEA-S) concentration (587 μg/dl; reference range, 148–407 μg/dl). Hypothyroidism, hyperprolactinemia, and autonomous cortisol secretion were excluded. The basal serum concentration of 17-OH-progesterone (17-OHP) was slightly increased, without elevation in the 250-μg adrenocorticotropic hormone stimulation test. Urine steroid profile revealed increased levels of TT, delta 5-androgens metabolites, and 17-OHP metabolites, suggesting an ovarian-adrenal source of androgen overproduction. Magnetic resonance imaging of the pelvis confirmed polycystic ovarian morphology, and computed tomography of the abdomen excluded tumors of the adrenals and ovaries. Clinical and laboratory hyperandrogenism, oligomenorrhea, and polycystic ovarian morphology allowed us to diagnose PCOS according to the Rotterdam criteria.

Significant hirsutism was a cause of distress and symptoms of low self-esteem for our patient. Treatment with oral contraceptives—a combination of ethinylestradiol and drospirenone (0.02 mg + 3 mg)—was initiated. Due to glucose intolerance, metformin of prolonged release (750–1000 mg/day) and a low-carbohydrate diet were recommended. At the same time, finasteride (5 mg/day), a 5-alpha reductase (5αRD) inhibitor, and permanent face hair reduction by photoepilation were started.

In the 1-year follow-up, we observed a reduction of hair growth to 14 points in a modified Ferriman–Gallwey score and a reduction in body weight (body mass index, 38.3 kg/m^2; waist circumference, 118 cm) (FIGURE 1B). The patient's serum TT level was 2.25 nmol/l and DHEA-S concentration was 473 μg/dl. Due to hair removal, she reported higher self-esteem and overall well-being.

Although PCOS is a common endocrine disorder, severe hyperandrogenism is rare and other possible major causes should be taken into consideration.[1] The excessive hair growth is a result of an interaction between free androgen levels and the sensitivity of the hair follicle. An increased activity of 5αRD potentiating androgen action in the pilosebaceous unit could be the possible

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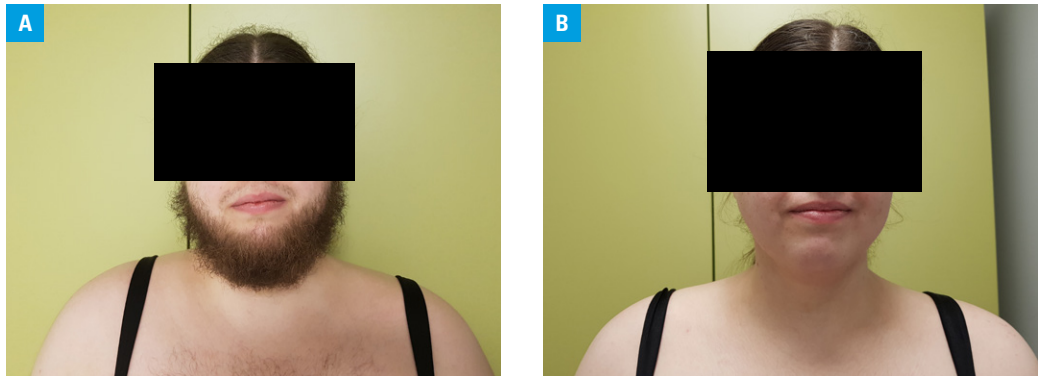

FIGURE 1 Facial hirsutism before treatment (A) and in the 1-year follow-up (B)

cause.[4] In therapy, androgen suppression using oral contraceptives as well as antiandrogens has a documented efficacy in reducing hirsutism.[5] Due to the long hair growth cycle, treatment effects are visible after 6 to 9 months. The combination therapy needs monitoring with respect to efficacy and side effects.

ARTICLE INFORMATION

PATIENT CONSENT Informed, written consent has been obtained from the patient to publish the photographs.

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CONFLICT OF INTEREST None declared.

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REFERENCES

1 Martin KA, Anderson RR, Chang RJ, et al. Evaluation and treatment of hirsutism in premenopausal women: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2018; 103: 1233-1257.

2 Azziz R, Carmina E, Sawaya ME. Idiopathic hirsutism. Endocr Rev. 2000; 21: 347-362.

3 Legro RS, Arslanian SA, Ehrmann DA, et al. Diagnosis and treatment of polycystic ovary syndrome: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2013; 98: 4565-4592.

4 Rosenfield RL, Ehrmann DA. The pathogenesis of polycystic ovary syndrome (PCOS): the hypothesis of PCOS as functional ovarian hyperandrogenism revisited. Endocr Rev. 2016; 37: 467-520.

5 Escobar-Morreale HF, Carmina E, Dewailly D, et al. Epidemiology, diagnosis and management of hirsutism: a consensus statement by the Androgen Excess and Polycystic Ovary Syndrome Society. Hum Reprod Update. 2012; 18:146-170.