Female Progressive Scalp Hair Loss Associated with Ovarian Thecoma

Andreia Munck Andressa Sato de Aquino Lopes Alessandra Anzai
Carolina Oliveira Costa Fechine Neusa Yuriko Sakai Valente Ricardo Romiti

Department of Dermatology, University of São Paulo, São Paulo, Brazil

Question

A 58-year-old postmenopausal woman reported progressive scalp hair loss and an increase in facial and upper and lower abdominal hair over a period of 17 years. Bilateral ovarian thecoma was recently diagnosed.

A physical examination of the scalp showed bilateral frontotemporal recession and a diffuse decrease in hair density in the frontoparietal area (Fig. 1). Trichoscopy of the alopecic area showed yellow dots, a lot of single-hair follicular units, and more than 10% of thin hairs (Fig. 2). When we compared the frontal with the occip-

ital area, we noticed a higher number of vellus hairs in the frontal area.

Laboratory tests showed a total testosterone level of 164 ng/dL (reference <98), free testosterone at 84 pmol/L (reference range 2–45), and DHEAS at 651 ng/mL (reference range 189–2,050). Two punch biopsies with transverse and longitudinal sections were performed on the frontal and temporal areas. The fragment of the frontal and parietal area evidenced moderate perivascular lymphohistiocytic infiltrate and foci of perisebaceitis, and the ratio of terminal to vellus hairs was 2:1.

What is your diagnosis?

Fig. 1. Bilateral frontotemporal hair recession and diffuse decrease in hair density in the frontoparietal area.

Fig. 2. Trichoscopy showed yellow dots, a lot of single-hair follicular units, and more than 10% of thin hairs.

Answer

The clinical, trichoscopic, and histopathological findings were consistent with the diagnosis of androgenetic alopecia. Hair recession in the frontotemporal areas and diffuse hair loss are seen with the male pattern of androgenetic alopecia.

The patient was submitted to laparotomy with bilateral salpingo-oophorectomy for treatment of the thecoma. The androgenetic alopecia was treated with topical minoxidil at 5% as well as with 100 mg oral spironolactone and 5 mg oral finasteride.

Here, we present an unusual pattern of androgenetic alopecia in a female with a bilateral ovarian virilizing thecoma.

Female androgenetic alopecia is a common and distressing cause of hair loss, induced by androgens in genetically susceptible women, typically characterized by diffuse central hair thinning, maintaining the frontal hairline [1]. However, there is a type of alopecia also described by Ludwig in 1977 [2], called female androgenetic alopecia of male pattern (FAGA.M). It is clinically characterized by recession of the frontal and parietal hairlines, mimicking the pattern of androgenetic alopecia in men, and it is considered diagnostic of women with circulating androgens at high levels [2]. In our case, the excess of plasma androgens resulted from the ovarian thecoma.

Thecomas are rare androgen-secreting ovarian tumors, representing 0.5–1% of all ovarian tumors [3]. They can occur at any age but are more common in postmenopausal women with a mean age of 59 years [3]. Typical thecomas are almost always estrogenic; the luteinized

forms are virilizing in about 10% of cases [4]. This tumor is present in only 0.01–0.25% of all patients presenting with clinical hyperandrogenism [5].

A curative treatment of choice for ovarian thecomas is surgical removal [6]. After surgery, the symptoms of defeminization may disappear [7]. In most cases of virilizing thecoma, patients have increases in serum testosterone levels and normal levels of serum dehydroepiandrosterone sulfate [8]. Other clinical virilizing signs that can be present with this type of thecoma include hirsutism, deep voice, acne, amenorrhea, and enlargement of the clitoris [7]. In our patient, we observed hirsutism and FAGA.M.

Therefore, FAGA.M generally is a clinical sign of hyperandrogenism, and gynecological and endocrinological investigation is necessary to exclude adrenal and ovarian virilizing tumors such as thecomas.

Statement of Ethics

Patient consent has been obtained.

Disclosure Statement

The authors declare that they have no conflicts of interest to disclose.

Keywords

Androgenetic alopecia · Female alopecia · Baldness · Tumor

References

- 1 Price VH. Androgenetic alopecia in women. *J Invest Dermatol Symp Proc*. 2003 Jun;8(1):24–7.
- 2 Ludwig E. Classification of the types of androgenetic alopecia (common baldness) occurring in the female sex. *Br J Dermatol*. 1977 Sep;97(3):247–54.
- 3 Nocito AL, Sarancone S, Bacchi C, Tellez T. Ovarian thecoma: clinicopathological analysis of 50 cases. *Ann Diagn Pathol*. 2008 Feb;12(1):12–6.
- 4 Keeney GL. Ovarian tumors with endocrine manifestations. In: De Groot LJ, editor. *Endocrinology*. 4th ed. Philadelphia (PA): WB Saunders Company; 2001. p. 2172.
- 5 McGee J, Fleming NA, Senterman M, Black AY. Virilizing luteinized thecoma of the ovary in a 15-year-old female: a case report. *J Pediatr Adolesc Gynecol*. 2009 Oct;22(5):e107–10.
- 6 Cho YJ, Lee HS, Kim JM, Joo KY, Kim ML. Clinical characteristics and surgical management options for ovarian fibroma/fibrothecoma: a study of 97 cases. *Gynecol Obstet Invest*. 2013;76(3):182–7.
- 7 Lee MH, Moon YJ, Ha CW, Hoh JK. Ovarian thecoma with virilizing manifestations. *Yonsei Med J*. 2009 Feb;50(1):169–73.
- 8 Shenker Y, Malozowski SN, Ayers J, Grekin RJ, Barkan AL. Steroid secretion by a virilizing lipoid cell ovarian tumor: origins of dehydroepiandrosterone sulfate. *Obstet Gynecol*. 1989 Sep;74(3 Pt 2):502–6.