Case 2. Polycystic ovary – 18 years old/ 1,60 m/ 46 kg

SPE – as per laboratory values

Serum Protein%	Normal Values%	Result %
ALB	56 -70	58,5
α_1	1-5	3,1
α_2	5-11,2	8,3
β	7-13,2	13,3
γ	10-19	16,8
A/G	>1	1,3

TP = 6,9 g/dL (6,4-8,3) ; ALB = 58,5%; GL = 41,3%
TCa = 9,25 mg/dL (9 – 12); Ca^{2+} = 4,27 mg/dL (4,20-5,25)
FMH: mother – uterine fibroma, Hashimoto hypothyroidism
Other diagnoses:
-Rhinitis
- Seborrheic skin, oily hair
- Acne
- Scoliosis

(Code – R8/51-B15, Apitherapy Medical Center database)

Polycystic ovaries are a clear sign of hormonal androgenisation. Accompanied by the excessive increase of progesterone (PRG) compared to the hormonal pattern of young girls, this hormonal "disorder" can have several causes, but the effects are the same. Daughters whose mothers have had a uterine fibroma are congenitally predisposed to having hormonal androgenisation. All the diagnoses of the mother, established through the family medical history, are autoimmune diseases (see also Case 1, Uterine fibroma, autoimmune disease). In any family where a girl presents the signs and symptoms of hormonal androgenisation, it is possible to identify the maternal-foetal influences of her hormonal state by having a private discussion between mother and daughter.

In the case of hormonal androgenisation with a congenital predisposition, the menarche (first menstruation) occurs later, around the age of 14-16, sometimes with the help of hormonal therapy. The menstrual periods are irregular, painful, the hair and skin are frequently seborrheic, hirsutism can occur, usually the patient has acne, sometimes the breasts become tense from the first menstruations because of the increase of prolactin (PRL) simultaneously with that of PRG, etc. Often small, these girls are hyperactive, they move incessantly, they perspire at head level during their sleep, they have the palms of the hands moist, especially in emotional states (at school, when they have a written test, their pen gets wet because of their perspired palms), their peripheral circulation is poor (their feet, and sometimes their hands, are usually cold), they are intelligent, grumpy (stubborn!), but they are the ones who initiate reconciliation (they cannot stay upset for long). Ambitious, they want to achieve, they like to be praised. At home, however, they are sometimes too bossy. As teenagers, they are stressed by acne[1], oily hair and by the fact that their breasts are smaller than those of their peers, due to an estrogenemia[2] which is below the normal limit for that age.

The androgenisation of young girls can also have other causes, quite frequently their starvation in order to have a top-model waist, accompanied by the diminishing of the physiological subcutaneous fat layer, which has a role in the physiological estrogenemia. Intense and prolonged physical effort, as in the case of some prolonged heavy physical work or in professional sports can have the same effects. The administration of estroprogestative drugs for dysmenorrhea (premenstrual pain) and for menstruation regulation accentuates the androgenisation. The administration of estroprogestative drugs for contraception purposes has the same effects. This happens either because the composition of the estroprogestative drugs contain too big a dose of PRG or because the synthesis hormones do not act in the same way as those of human biosynthesis, or because they are not administered in the right quantity and at the right time; therefore these synthesis hormones lead to androgenisation.

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[1]Acne occurs because of various dysfunctions of the sebaceous and pilosebaceous glands. Diverse aetiologies have been found for this disease. The most notable of all remains the genetic one: it justifies perfectly the inefficiency of the treatment and it brings more erudition to the doctor who diagnoses it! Which of the genes, how does it act? The secret remains so professional that it is a secret for the doctor as well. In reality, the cause for acne is hyperprogesteronemia, which determines the seborrheic complexion and the greasy hair. The acne is a clear sign of hormonal imbalance. The treatment for acne should be exclusively undertaken by an endocrinologist, and the disease will not be overcome so long as the aromatase enzyme from the ovaries – which is also an invaluable gift of the bees – will not "aromatize" the androgens into estradiol.

[2]One of the functions of the estrogenic hormones, when they are in normal values, is to "direct" normal growth of the breasts, preparing them for lactation. In many cases, the young woment who take estroprogestative contraceptives – that reduce the values of estrogenemia and cancel the harmonious growth of the breasts – use the services of the surgeons for breast enlargement, but continue to take contraceptives. If these young women knew the wealth of side effects of the estroprogestative contraceptives, they might wish to rethink the risk/benefit ratio of contraceptives.

By acting as contraceptives, whatever the reason for their administration, the estroprogestatives cancel physiological ovulation, determining an increase of PRG and, as a consequence, that of PRL. This is a process that happens during normal pregnancy: the estradiol (ESTR) is decreasing, whilst PRG and PRL are increasing. As a consequence, young girls develop the hormonal pattern of a pseudopregnant woman (with increased PRL and PRG). Usually, they go through the so called premenstrual syndrome (PMS) first. This syndrome presents the same symptoms as polycystic ovary syndrome (PCOS). The difference is that in the first case, there is no polycystic ovary. In some cases, the hormonal state of pseudopregnancy is prolonged and evolves towards endometriosis.

In any case, the estroprogestative drugs have a similar action at the ovaries level as hyperprolactinemia: they both cancel normal ovulation and, by diminishing the actions of the aromatase, they lead to a decrease in ESTR and to androgenisation.