

## Comprehensive evaluation of a menstrual cycle under infertility (Survey characteristics of folliculometria and endometrial echo)

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### Objective

Systematic evaluation of the menstrual cycle for infertility (an overview of folliculometry and M-echo) on the ESAOTE MyLab 70 apparatus using transvaginal transducer (TV-USG) in a retrospective analysis of 70 patients diagnosed with primary and secondary infertility of anovulatory origin.

### Methods

The first monitoring of the menstrual cycle was performed at 4-7 days of the menstrual cycle, early proliferative phase. A second ultrasound was performed on cycle day 10-11. The date of the third ultrasound in order to folliculometry was carried out for 12-14 days of the menstrual cycle. When detecting the pre-ovulatory follicle (diameter 18-24 mm), TV ultrasound for diagnosis of ovulation was performed the next day. Another TV ultrasound in women with ovulatory cycle were performed 7 days after ovulation in order to assess the adequacy of luteal phase.

### Results

In the early proliferative phase in the structure of the ovaries of healthy women of reproductive age are visualized follicles with diameters between 2 and 8 mm. Thick M-echo from 3 mm to 6 mm, has a fusiform shape, low echogenicity layer, a Central hyperechogenic line at the junction of the anterior and posterior walls of the uterus and a clear echogenic rim on the border with the myometrium. Detection in the early proliferative phase of medium to large follicles either for their stimulation in this cycle, or in cases of persistence from last cycle. Crucial for the differentiation of these conditions is assessment of the M-echo. In cases when the M-echo thickened to 6-8 mm, which corresponds to mid-proliferative phase, or more than 8 mm, which characterizes the late-proliferative phase, the ovaries, if folliculometry, rendered dominant (11-17 mm diameter) or preovulatory (diameter 18-24 mm) follicles. Accelerated maturation of follicles is characteristic of giperestrogenia patients with hormone-dependent diseases (uterine myoma, adenomyosis, endometrial hyperplasia). When thin M-the echo liquid formulation may be novoyavlenny follicle from last cycle or cystic yellow body (characterized by thicker walls and inhomogeneous content) that often is observed in patients with inflammatory diseases of genitals. At a normal pace of maturation of the follicles the second ultrasound scan is performed on a 10-11 day cycle, i. e. on the border of mid - and late-proliferative phases of the menstrual cycle in order to detect the dominant follicle. With accelerated maturation of the follicles in this period it is possible to identify the Mature follicles, and the thickness M of the echo varies from 8 to 12 mm. When hormonal disorders is a dominant follicle is visualized and the M-echo remains thin due to hypoestrogenia. The date of the third ultrasound in order to identify the pre-ovulatory follicle was determined on the assumption that the size of the dominant follicle in a day increase on average by 2 mm. most Often, folliculometry were performed at 12-14 days of MC. When detecting the pre-ovulatory follicle (diameter 18-24 mm), TV ultrasound for diagnosis of ovulation was performed the next day. About the presence of ovulation was confirmed by the disappearance or a significant reduction in the size of pre-ovulatory follicle, the purchase of stellate or slit-like shape, the appearance in the structure of the follicle parietal hyperechoic inclusions, and the presence of follicular fluid in papadimitrou space. If ovulation has not occurred, the TV ultrasound was performed the next day or within a few days, until it becomes obvious that the lack of ovulation. If the content of novoromanovo follicle becomes more echogenic, the wall is sealed, and the dimensions start to decrease, then was diagnosed with the syndrome lúteinizacii novoromanovo the follicle. Some patients novoyavlenny Mature follicles persist in the ovary, remaining unchanged until the next menstrual period, others may pre-ovulatory follicle transforms into a follicular cyst. Thickened M-echo in these cases remains proliferative. If the patient has been ovulating, M-echo begins to change and becomes mišenevidnye character at the expense of more peripheral echogenic and hypoechoic Central portion. This M-echo is typical for the early phase secretion, which normally lasts no longer than 3-4 days. The thickness of the M-echo in this phase MC is an average of 10-12 mm. Another TV ultrasound in women with ovulatory cycle was performed 7 days after ovulation in order to assess the adequacy of luteal phase. If the yellow body is functioning normally, then the M-homogeneous hyperechogenic echo becomes, and the thickness can reach up to 14-15 mm. If M-echo at 20-24 days machineability YAC retains the character was diagnosed luteal insufficiency, which may be a cause of infertility and early abortion.

### Conclusion

Thus monitoring of MC and folliculometry allows you to diagnose 2 major causes of female infertility: luteal deficiency and anovulation.