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ULTRASOUND FEATURES OF THE UTERUS AND OVARIES AT DIFFERENT PERIODS OF THE MENSTRUAL CYCLE IN GIRLS AGED 13 TO 23

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Due to the development of diagnostic technologies, the study of the "live" uterus and ovaries has recently become increasingly important. Typically, echo parameters such as length, width, and parenchyma thickness are determined (T.V. Belkova et al., 2008; I.M. Machaeva et al., 2013; V. Pelser, 1991). Unfortunately, it must be acknowledged that in the literature available to us on ultrasound diagnostics in obstetrics and gynecology, we found only a few studies that included data from ultrasound examination of the uterus and ovaries in pathology and normal conditions, and even then only in the form of small fragments (E.V. Uvarova et al., 2005; O.V. Syrova, 2005; Skjoedebrand Sparre L. et al., 2002).

This served as the impetus for the study of female genital organs using echolocation (V.V. Mitkov, 1996; E.N. Nekhorosheva et al., 2004; D. Botsis et al., 1992).

The objective of the study was to examine age-related characteristics of uterine and ovarian echo parameters at different periods of the menstrual cycle (before, during, and after) in girls aged 13 to 23 years.

Subject and Subject of the Study: The study sample consisted of 1,155 apparently healthy girls aged 13 to 23 years who underwent a preventive examination in the city of Chartak, Namangan Region, Republic of Uzbekistan.

A Chison Ultrasound (a Korean-USA company) was used, and the obtained digital data were processed using the variation-statistical method (G.F. Lakin, 1980). The results of the ultrasound examination showed that the length of the uterus before menstruation with left-sided ovulation (DOMLO) at the age of 13 to 23 years increases from 35.52 ± 0.55 to 49.8 ± 0.22 mm, with right-sided ovulation (DOMPO) - from 36.05 ± 0.17 to 49.73 ± 0.17 mm; similar data were obtained during and after menstruation, the most intensive growth is observed with DOMLO, VMZhP, VMZhLYA and PS at 14, 16 and 20 years of age, with DOMPO - at 14, 17 and 20 years. The anteroposterior size of the uterus for the age periods studied is greatest during menstruation (with IMJP - from 32.2 ± 0.65 to 35.5 ± 0.3 mm; with VMJLA - from 31.3 ± 0.4 to 37.1 ± 0.16 mm), slightly smaller (with DOML - from 26.6 ± 0.39 to 32.07 ± 0.2 mm; with DOMP - from 26.1 ± 0.8 to 33.3 ± 0.3 mm), and smallest PM (from 26.2 ± 0.5 to 30.2 ± 0.2 mm) and increases most intensively; respectively, at 15, 18 years; at 14, 15 years; at 15, 16 years; at 14, 15 years; at 15 years.

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The width of the uterus increases by 1.48 times in women with DOMO (pregnancy, maternal, and uterine dysfunction), by 1.46 times in women with DOMO and VMZhYA (pregnancy, maternal, and uterine dysfunction), by 1.38 times in women with VMZhYA (pregnancy, maternal, and uterine dysfunction), and by 1.47 times in women with PMZhYA (pregnancy, maternal, and uterine dysfunction). The most intense growth across all periods of the menstrual cycle is observed at ages 14, 15, and 20.

The fundal thickness of the uterus in women with DOMO and DOMO (pregnancy, maternal, and uterine dysfunction) is almost identical between the ages of 13 and 16, with the maximum fundal thickness observed at 14 years of age and the minimum at 17 years of age. Fundal thickness thickens between the ages of 13 and 14, and between the ages of 13 and 16, then remains unchanged at subsequent ages. In uterine corpus thickness, it decreases between 15 and 18 years of age, increasing by 1.0 mm at 19 years of age. In uterine corpus thickness, maximum thickness is observed at 17 years of age, and minimum thickness is observed at 16 years of age.

Uterine corpus thickness increases at 16 years of age across all periods of the menstrual cycle between 13 and 16 years of age, reaching its definitive value. It should be noted that maximum uterine corpus thickness in uterine corpus thickness in uterine corpus thickness (DOMLO), uterine corpus thickness in …

During the studied age periods, cervical length increased by an average of 4.0-4.1 mm for DOMO, DOMO, and VMZhLYA, by 4.57 mm for PM, and by 5.65 mm for VMZhLYA. Consequently, cervical length at VMZhLYA is somewhat longer than at other periods of the menstrual cycle. The most intense growth in cervical length occurs at ages 15, 18, and 22 for DOMO, DOMO, and PM. At ages 15, 17, and 22 for VMZhLYA, it increases at ages 14, 18, and 22. This demonstrates that cervical length growth is most variable during menstruation.

The study found that the growth of the uterine length and width is complete by age 20, while the anteroposterior diameter, fundus, and corpus thickness are reached by age 19, and the cervix length is reached by age 22.

The length of the right ovary in patients with DOMO increases by 1.23 times (from 23.6±0.37 to 29.05±0.34 mm) over the studied age periods, while the left ovary increases by 1.35 times (from 22.33±0.37 to 30.05±0.26 mm). In patients with DOMO, the corresponding increases are 1.2 and 1.25 times (from 24.05±0.4 to 29.8±0.18 mm and from 22.88±0.46 to 28.5±0.14 mm). Similar data were obtained when studying the VMZhP, VMZhL, and PM. Moreover, the most intensive growth of the length of both ovaries in all periods of the menstrual cycle is observed at the ages of 14, 19 and 20. It should be noted that the right ovary becomes largest by the age of 22, and the left by the age of 23. And the smallest length of the ovaries on both sides is observed at the age of 13. As can be seen, over the studied age periods, the length of the ovary on the right lengthens by an average of 5.3 mm, on the left - by 7.65 mm. In this regard, we cannot agree with the opinion of O.V. Syrova (2008); who noted that in girls aged 17-19 the length of the ovaries does not change.

Over the studied age periods, the width of the right ovary increases with DOMO by an average of 2.98 mm, the left - by 3.5 mm; with DOMO - respectively: 3.55 and 2.8 mm; With the VMZhP - by 2.65 and 2.05 mm; with the VMZhLA - by 4.1 and 3.2 mm; PM - by 3.48 and 2.7

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mm. Moreover, the most intensive growth is observed with DOMO in the right ovary at 14 and 16 years of age, in the left - at 14 and 18 years of age, with DOMO - respectively: at 14, 18, 21 and 18, 21 years; VMZhP - at 14, 19, 20 and 14, 20 years; with the VMZhLA - on both sides at 16 and 21 years and PM - at 14, 21 and 18, 21 years.

As can be seen from the above, if the length of the ovaries increases, the growth of the width is slowed, and if there is an intensive growth of the width, the growth of the length of the ovaries is slowed. Consequently, the "Law of Alternation" in anatomy appears. The anteroposterior size of the ovaries, except for DOMPO, increases by 1.2 times on both sides in other periods of the menstrual cycle, while with DOMPO it increases by 1.84 times on the right and by 1.25 times on the left. The most intense increase in the anteroposterior size of the right ovary in DOMLO is observed at 15 years of age, in the left - at 14, 15 years; in DOMPO - respectively: at 14, 16, 20 and 15, 20 years; in VMZhPY - at 14, 16 and 15, 16, 20 years; in VMZhLYa - at 15, 22 and 15, 20 years and PM - on both sides at 15 years of age.

It should be noted that in all periods of the menstrual cycle, the volume of the right ovary reaches its maximum by age 22, while the volume of the left ovary before menstruation with left-sided ovulation and with right-sided corpus luteum menstruation reaches its maximum by age 23, and in the remaining periods of the menstrual cycle, also by age 22.

Across the age periods studied, the most pronounced changes in the volume of the right ovary occur before menstruation with right-sided ovulation, and in the left ovary with left-sided ovulation.

The periods of most intense growth in the thickness of the medullary region in the left ovary with DOMO occur at ages 17 and 19, in the right ovary with DOMO at ages 17 and 21, and in the remaining periods of the menstrual cycle in both ovaries at ages 17 and 20.

The thickness of the cortex of both ovaries (the DOML and VMJ) reaches its maximum by age 15, and by age 16 in other groups during the remaining periods of the menstrual cycle.

It has been established that the growth of the diameter of small follicles in the right ovary occurs in three stages of development throughout the menstrual cycle: Stage 1 from 13 to 16 years; Stage 2 from 17 to 19 years; and Stage 3 from 20 to 23 years. The left ovary undergoes two stages of development: Stage 1 from 13 to 19 years and Stage 2 from 20 to 23 years.

In terms of the growth of large follicle diameters, the most pronounced changes in the right ovary occur between ages 13 and 16 in two phases of the menstrual cycle: before menstruation with right-sided ovulation and during menstruation with the presence of a corpus luteum in the right ovary. Between ages 17 and 23, these changes occur before menstruation with right-sided ovulation and during menstruation with the presence of a corpus luteum in the left ovary. No significant changes are observed during the remaining periods of the menstrual cycle.

Conclusions: Thus, an age-specific approach to studying age-related and individual changes in normal uterine and ovarian echo parameters during the developmental period allows us to determine the role of age-related factors influencing growth rate in girls aged 13 to 23. Uterine and ovarian echo parameters at the studied ages normally change unevenly and with varying intensity. There is a close relationship between age-related echo parameters of the ovaries and

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uterus. The identified age-related changes in different periods of the menstrual cycle provide a comprehensive understanding of the complex development and growth of the female reproductive organs when addressing diagnostic issues.

References

1. Balin V.E., Zaidieva Ya.Z. Sexual education and sexual training are essential. // RMZh. - 2000. - Vol. 8, No. 3. - Pp. 156-158.

2. Baranova A., Sannikov A. // Doctor. - 1999. - No. 9. - Pp. 40-41.

3. Beckmann C., Ling F., Barzhansky B., et al. Obstetrics and Gynecology // Translated from English. Editor S.N. Zin'ko. - Moscow:, Med.Literature, 2004. - Pp. 303-305.

4. Belkova T.V., Kolesnikova E.G., Ovchinnikova L.L. Evaluation of the uterine cavity after medical termination of pregnancy // Ultrasound. and functional. diagnostics. - 2008. - No. 3. - P. 98.

5. Akhmetchin A.B., Melyukova O.Yu., Rybnikov S.V. Ultrasound diagnostics of ectopic pregnancy in a antenatal clinic // Ultrasound. and functional diagnostics. -2004. - No. 1. - P. 121-122.

6. Beckmann C., Ling F., Barzhansky B. et al. Obstetrics and Gynecology // Translation from English. Editor S.N.Zin'ko.-M.:, Med.Literature, 2004. - P. 303-305.

7. Bulanov M.N., Mitkov V.V. Modern concepts of normal ultrasound anatomy and hemodynamics of the endocervix // Ultrasound and functional diagnostics. - 2005. - No. 2. - P. 49-54.

8. Ozerskaya I.A., Yesayan N.K. Ultrasound differential diagnostics of non-neoplastic uterine appendage formations in women of reproductive age // Ultrasound and functional diagnostics. - 2008. - No. 1. - P. 70-77.

9. Ozerskaya I.A., Shcheglova E.A., Oorzhak S.S. et al. Dynamic echography of the uterus in women of pre- and postmenopausal periods // Ultrasound and functional diagnostics. – 2007. - No. 2. – P. 49-56.