

Ovarian reserve in patients with benign ovarian tumors before and after organ-preserving surgery

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Abstract

Introduction. Benign ovarian tumors (BOT) frequently cause an impairment of ovarian reserve (OR), surgical intervention increases the degree of reproductive losses.

Aim. To evaluate the OR state in patients with unilateral BOT before and after laparoscopic cystectomy.

Materials and methods. 85 patients with epithelial ovarian tumors (EOT)-I group, 60 with mature teratomas (MT)-II group were examined. The age was 29.7 ± 4.2 . Before and 6, 12 months after surgery the volume of healthy ovarian tissue (V, cm^3), antral follicle count (AFC), their site, shape and diameter were measured by ultrasound (Voluson S10, 3.7-9.3 MHz). V_{max} , cm/sec and RI were estimated by Doppler.

Results. Before operation in EOT group: $\text{AFC} = 5.8 \pm 1.3$, $V = 4.5 \pm 0.6 \text{ cm}^3$, $V_{\text{max}} = 7.6 \pm 0.5 \text{ cm}/\text{sec}$, $\text{RI} = 0.51 \pm 0.2$. Round-shaped follicles up to 5 mm located peripherally. In MT group: $\text{AFC} = 7.1 \pm 0.8$, $V = 5.7 \pm 0.4 \text{ cm}^3$, $V_{\text{max}} = 9.2 \pm 0.3 \text{ cm}/\text{sec}$, $\text{RI} = 0.57 \pm 0.3$. Antral follicles stated centrally along the tumor capsule and peripherally; were defined as rounded anechoic structures 3-8 mm. After 6 months patients of I group had an increase in V, cm^3 by 1.4 times, 4-6 irregular AF (2-5 mm) were found. Doppler showed an increase of blood flow velocity by 1.2 times. In II group V, cm^3 was 1.6 times higher, 1-4 deformed follicles (2-4 mm) were revealed. V_{max} and RI increased by 1.3 and 1.4 times respectively. After 12 months the EOT group showed a reduction in ovary volume ($5.3 \pm 0.9 \text{ cm}^3$) and perfusion intensity ($V_{\text{max}} = 8.6 \pm 0.4 \text{ cm}/\text{sec}$, $\text{RI} = 0.54 \pm 0.7$), did not differ in population. Follicles obtained the regular shape, quantitatively 7-8 (3-7 mm) had chaotic location. Parameters in MT group remained stable.

Conclusion. A tendency towards an OR improvement in EOT group postoperatively can be explained by presence of thick fibrous tumor capsule, which contributes to clearer intraoperative visualization of tumor boundaries from healthy tissue, therefore, a minimal OR reduction. Cystectomy of MT was accompanied by the marked OR losses due to close follicle position to the tumor wall.

Biography

Tumasyan Elizaveta Aleksandrovna entered Pirogov Russian National Research Medical University on Pediatric Faculty in 2012, graduated in 2018. From 2018 to 2020 she undergone residency in obstetrics and gynecology. Since 2020 she has been taking a post-graduate course. Regularly assists in laparoscopic, laparotomy and vaginal operations, independently performs ultrasound, hysteroscopy, separate diagnostic curettage, colposcopy. Participates in consultations, clinical seminars, is on duty 4-5 times a month. Tumasyan E.A. presented a number of scholarly papers at International conferences: "14th Warsaw International Medical Congress for young scientists", Warsaw, Poland, 2018 - II degree diploma; "Leiden International Medical Student Conference", Leiden, Netherlands, 2019; "16th YES Meeting", Porto, Portugal, 2021. She presented scientific researches at "Pirogov Scientific Medical Conference 2017" - I degree diploma; Russian scientific-practical conferences "Snegirev's Readings 2017", "Haaz's Readings 2017" - I and II degree diplomas; IX International Scientific Conference "Science4health 2018", Moscow, Russia - III degree diploma. She published 8 abstracts, in 3 foreign issues. She published articles: in Higher Attestation Commission journals: 4, in Scopus journals: 2. She accomplished training in the program "Translator in the professional communication field" in English, 2015-2017. She completed education in the specialty "Ultrasound diagnostics" in 2021.