

# CHARACTERISTICS OF THE TRANSGENERATIONAL EFFECT OF THE TOXIC DOSE OF SYNESTROL ON THE MORPHOLOGY OF OVARIES IN THE EXPERIMENT

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**Background.** The generality of the molecular genetic mechanisms of tissue development and the maintenance of the physiological balance of cell proliferation and apoptosis for embryonic histogenesis and carcinogenesis, as shown in numerous experimental studies and clinical observations, is the basis of the transgenerational prenatal programming effect of high concentrations of estrogens and their metabolites on the incidence of tumors in offspring.

**Aim.** The aim of the study was to analyze the morphological and immunohistochemical changes in the ovaries under the influence of the experimental prenatal toxic level of steroid hormones during the critical period of their germinating and development.

**Material and Methods.** The studies were carried out on pregnant mature males of laboratory mice, divided into control and experimental groups. To females mice of the experimental group were administered synestrol at a toxic dose of 50 µg per animal intramuscularly at stage E11.5. On the 90<sup>th</sup> day of postnatal life, ovaries were isolated and a some of general morpho-functional indices were assessed. In addition, the immunohistochemical activity of the reaction was evaluated for bcl2, PCNA and p53 receptors.

**Results and Discussion.** As a result of the study, it was established that the histological pattern of the ovaries of the offspring of the experimental group, in contrast to the ovaries of the animals in the control group, is characterized by the presence of multiple foci of hemorrhage and the fullness of the vessels of the medulla layer of ovaries. The parenchyma of the ovarian cortex is represented by a large number of yellow bodies, the follicles with ovules are shifted to the periphery of the organ, the stroma of the cortex is significantly reduced and is represented by thin connective tissue interlayers between the follicles. In the organ was reduced the number of primary (unilateral) follicles, secondary (multilaminar) and tertiary follicles. In single cells of yellow bodies, a posi-

tive expression of the pro-oncogene marker p53 is observed. In the stroma of the organ, the high expression of this marker is up to 8%, in individual follicles the high expression of p53 is up to 15–20%, there is a proportional increase in the number of stained cell elements according to the stage of maturation of the follicles.

**Conclusions.** The obtained data testify to the presence of a reliable positive transgenerational effect of injection a toxic dose of synestrol during the period of germinating and beginning of the morphogenesis of the ovaries of the offspring with the features of their structural and functional organization in late postnatal ontogenesis.

## ANATOMIC LANDMARKS FOR SAFE MEDIASTINAL ENDOVIDEOSURGICAL NAVIGATION

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**Key words:** endovideosurgical navigation, thoracic esophageal cancer, thoracoscopic access

**Aim.** Adequate lymphadenectomy is one of the main factors for a favorable long-term prognosis of surgical treatment of thoracic esophageal cancer.

**Material and Methods.** Superior mediastinal lymph node dissection causes some difficulties. The paratracheal lymph nodes removal increases the risk of injury to the recurrent laryngeal nerves. Using the thoracoscopic extirpation of esophagus requires clear visualization of anatomic landmarks which allows safe and accurate orientating in close proximity to major vascular and neural structures, trachea and bronchi.

**Results and Discussion.** The most important anatomic landmarks for thoracoscopic access to the esophagus from the right pleural cavity are azygos vein and arch of the azygos vein. They are used for subsequent locating the bifurcation of the trachea and near lying lymph nodes. Ligation of the azygos vein at the beginning of the operation provides adequate access to the bifurcation of the trachea, the main groups of lymph nodes and the aortic arch. Incision of the pleura in the groove between the azygos vein and the aorta is an important stage of esophageal dissection which permits performing a ligation of the thoracic duct. Clipping of the thoracic duct near the thoracic diaphragm helps to avoid the lymphorrhea