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Pathomorphological features of the follicular component of the ovaries of fetuses born to mothers whose pregnancies were complicated by pre-eclampsia

Dr. Larysa Kupriianova

Italian and Ukrainian Medical Doctor, PhD in Medicine, LLB,

CEO and Founder of KROK Academy by Dr. Kupriianova

Expert of the National Agency for Higher Education Quality Assurance of Ukraine

Objectives: According to the number of perinatal losses and complications that are being developed during pregnancy and childbirth, pre-eclampsia (PE) takes one of the leading places. It is commonly known that the women who were born to mothers with PE have a high risk of developing of the PE during the childbirth, and also suffer from various diseases of the genital organs. PE is being considered as one of the links in the formation of primary infertility in women born to mothers with PE. However, at the same time, the pathomorphological features of the follicular component of the ovaries of fetuses from mothers with PE have not been studied yet. The purpose of the study is to reveal the peculiarities of the structure of the follicular component of the ovaries of fetuses from mothers with PE.

Conclusions: The ovaries of fetuses from mothers suffering from PE are characterized by a decrease in the number of follicles, as well as by the appearance of growing, cystic-like changed and atretic follicles which indicate the intrauterine depletion of the follicular component of fetal gonads and may lead to the formation of primary infertility.

Methods: macroscopic, organometric, histological, histochemical, immunohistochemical, morphometric and statistical.

Results: The organometric method has postulated a probable decrease in the weight indicators as well as the main sizes of the ovaries of the fetuses from the group of comparison in accordance with those in the control group. Histological and histochemical methods have emphasized a decrease in the number of follicles in the ovaries of fetuses from mothers suffering from PE, as well as a probable decrease in their functional activity. At the same time, the growing, cystic-like and atretic follicles which appeared in the ovaries of the fetuses of the comparison group.

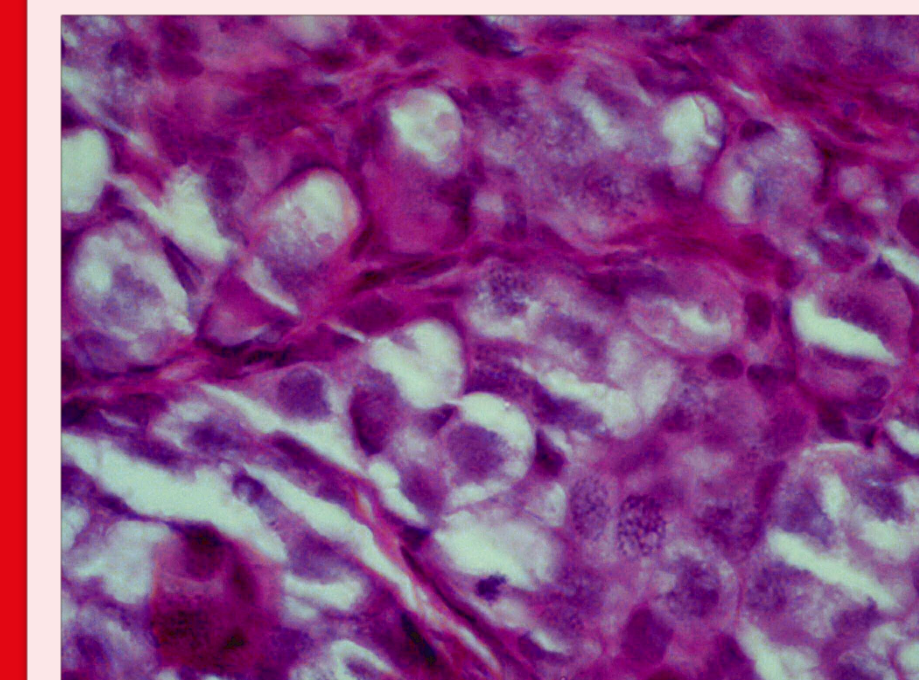


Figure 1.
Fetal ovary of the main group 1 with a gestation term of 21-28 weeks. Multiple dead eggs without nuclei and cytoplasm (lysis of cytoplasm and nuclei). Stained with hematoxylin and eosin, 400.

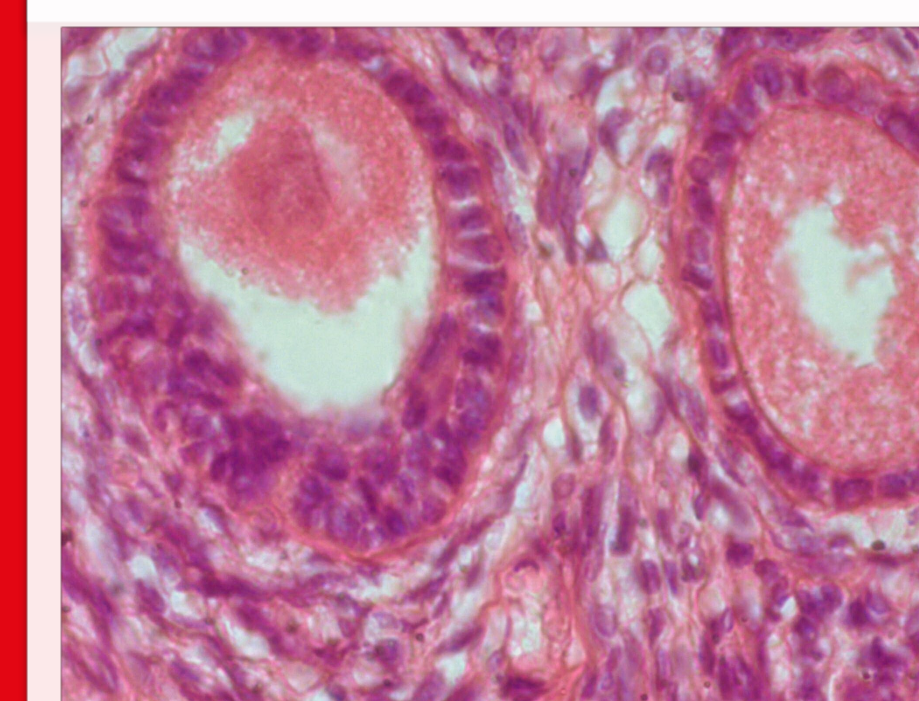


Figure 2.
Ovary of fetus of the main group 1. Growing follicle on the left: fragmentation of the oocytes' cytoplasm, cytoplasm thickening, nuclei without clear contours; beside - primary follicle with a tendency to cystic enlargement and thickening of the oocyte's shell, as well as with lack of nuclei in the middle. Stained with hematoxylin and eosin, x400.

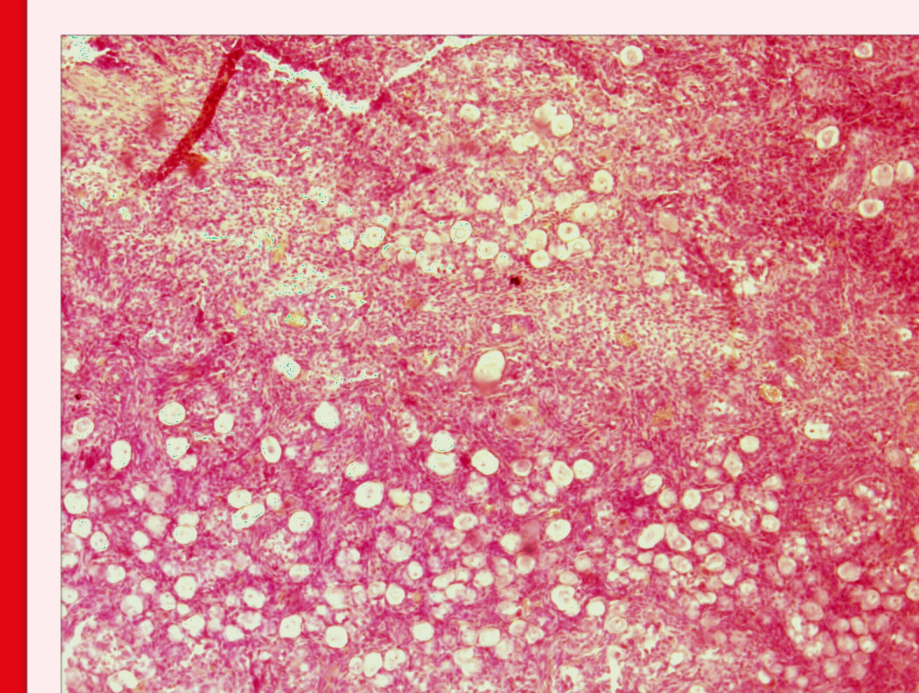


Figure 3.
Ovary of fetus of the main group 1 with a gestation term of 29-36 weeks. Severe PE of the mother. Massive death of eggs. Stained with hematoxylin and eosin, x400.

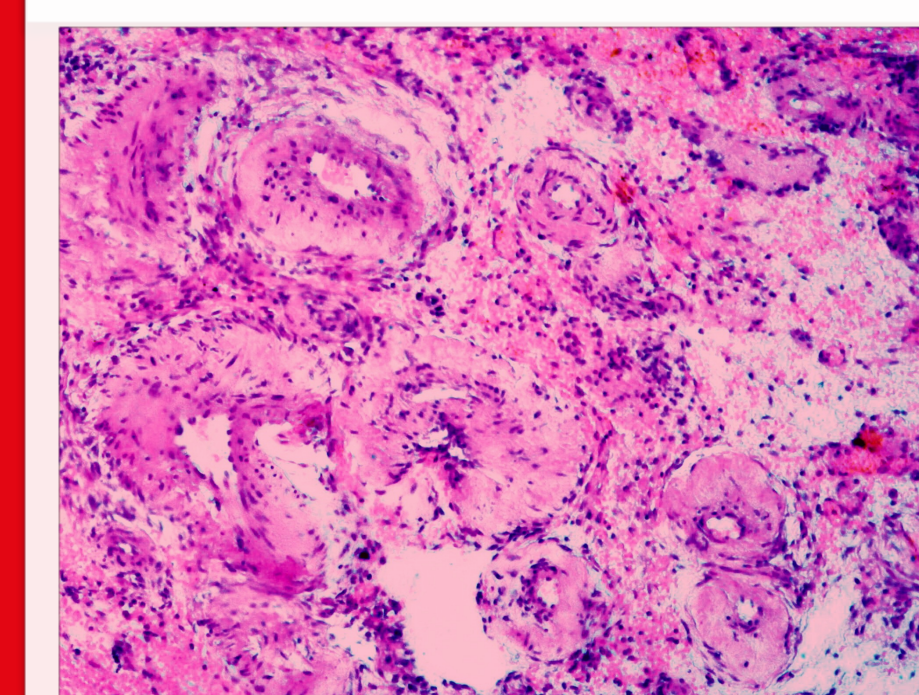


Figure 4.
Ovary of fetus of the main group 1 with a gestation term of 29-36 weeks (severe PE). Hyalinosis of the vessels' walls. Stained with hematoxylin and eosin, x400.

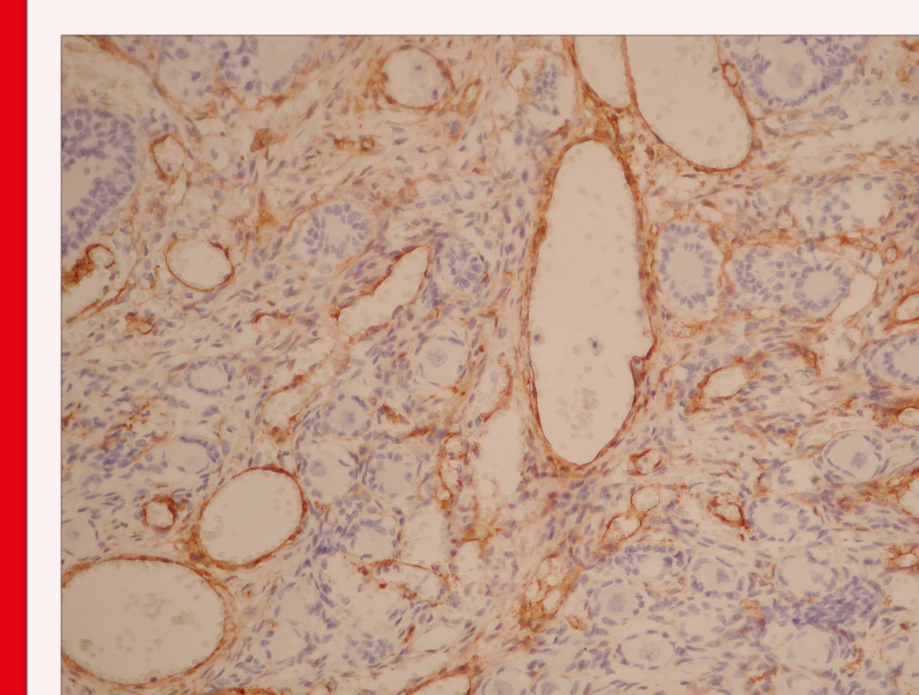


Figure 5.
Ovary of fetus of the main group 1 with a gestation term of 29-36 weeks. Mild PE of the mother. Immunohistochemical method with MCAT to CD 34, x400.

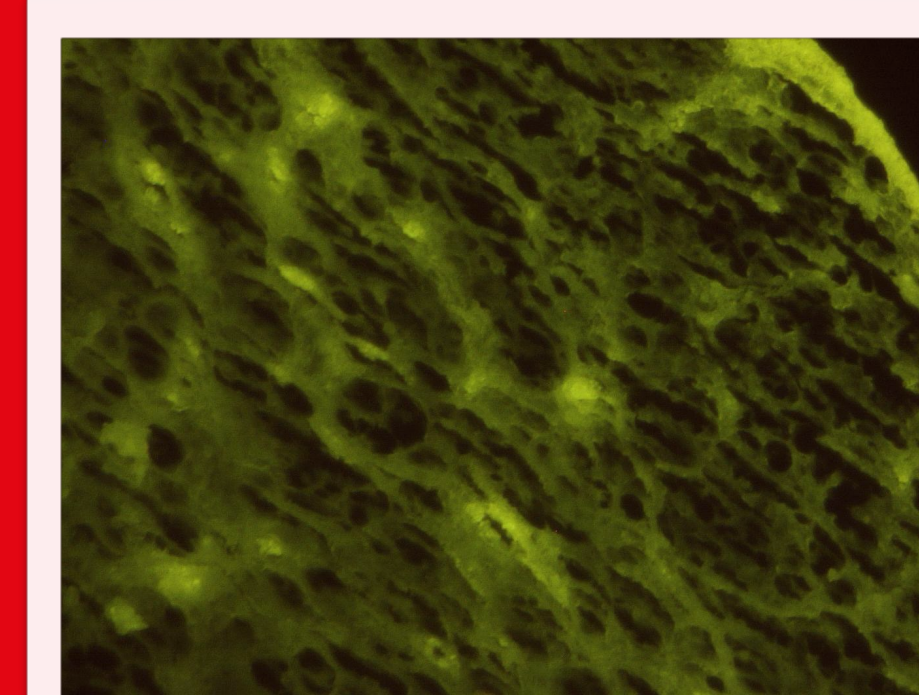


Figure 6.
The glow of collagen of the III type in a stroma of fetal ovary of the main group 1 with a gestation term of 37-42 weeks. Severe PE of the mother. Immunohistochemical method with MCAT to the collagen of the III type, x100.

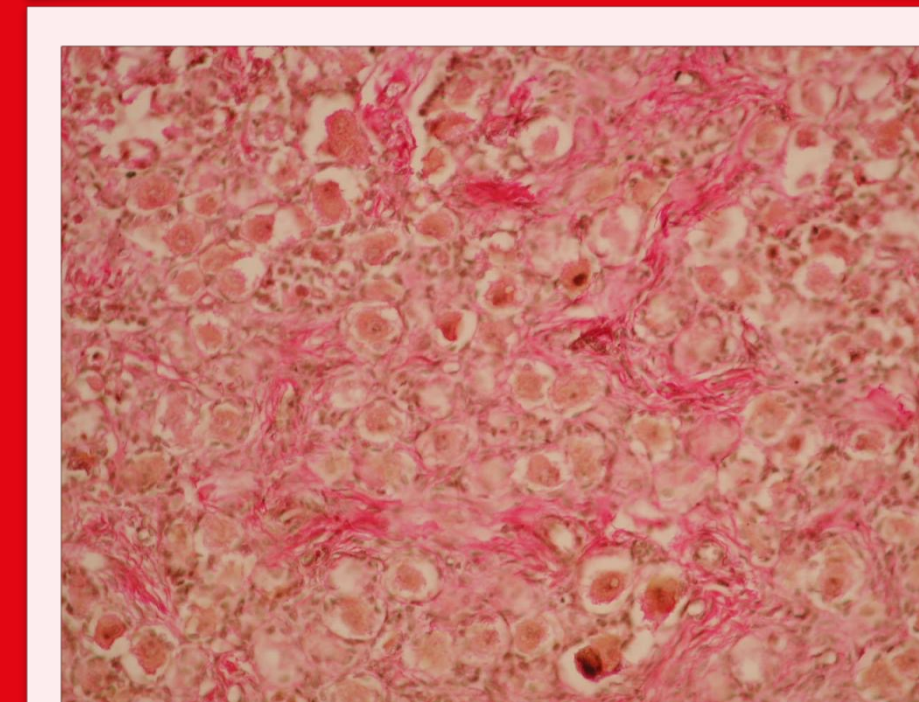


Figure 7.
Ovary of the fetus of the main group 1 with a gestation term of 29-36 weeks. Severe PE of the mother. The growth of the connective tissue in a cortical substance. Stained with van-Gieson's picrofuchsin, x200.