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Pathomorphological changes in the myometrium structure in preeclamptic fetuses as a predictor of the subsequent tumor processes development

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Objectives: According to modern medical literature, the disturbances in the formation of uterine myometrium in the fetal period can stimulate the formation of tumor processes in the subsequent life. It is widely known that chronic hypoxia, which occurs during pre-eclampsia (PE), leads to a violation of the formation of the structural components of the uterine wall of the fetus. On the other hand, the pathomorphological features of the structure of the myometrium of fetuses from mothers suffering from PE have not been studied yet. The purpose of this study is to postulate the pathomorphological features of the structure of the uterine myometrium of fetuses born to women with PE.

Methods: Organometric, macroscopic, histological, immunohistochemical, morphometric and statistical.

Results: The organometric method has postulated a probable decrease in the mass, length and thickness of the uterus of the fetuses of the main group compared to those of the fetuses of the control group. However, in the structure of the uterine wall of fetuses from mothers suffering from PE, our attention was drawn to the thinning of the endometrium and the spread of the serous component, and in the structure of the myometrium, the growth of connective tissue may be emphasized. Alongside with that, however, in the organs of fetuses from mothers with complicated pregnancies, there is a violation of the stratification of the muscle layers in the myometrium, and sometimes, even its absence.

Conclusions: The study revealed a violation of the formation of the uterine myometrium of fetuses from mothers whose pregnancy was complicated by PE which is manifested by the loss of stratification and increased growth of connective tissue, in the structure of which the collagen of the III type prevails. The changes which were described above could become one of the links of primary infertility, as well as stimulate the development of myometrial tumors in the subsequent ontogenesis.

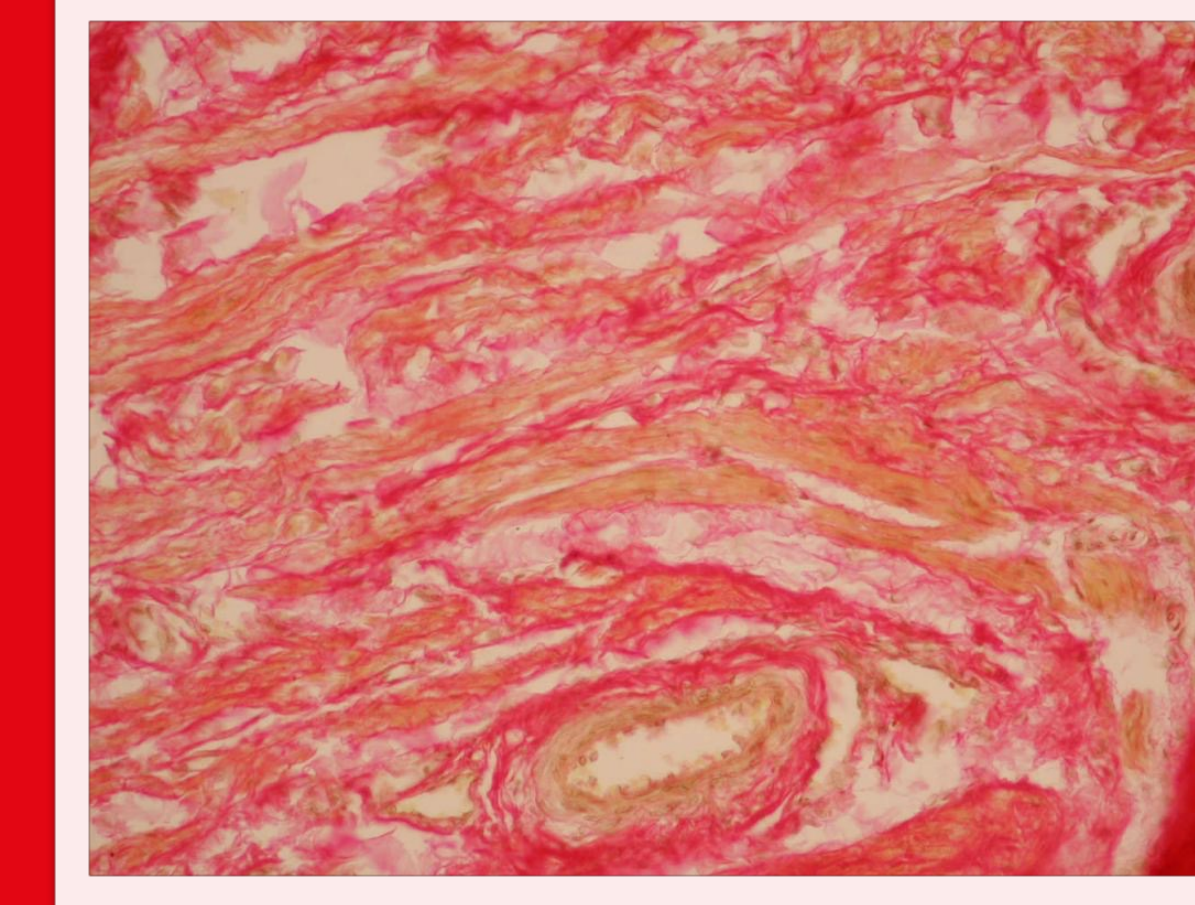


Figure 1.

Fetal uterus of the main group 1 with a gestation term of 29-36 weeks. The growth of the connective tissue between muscle bundles of myometrium. Mild PE of the mother. Stained with van-Gieson's picrofuchsin, x200.

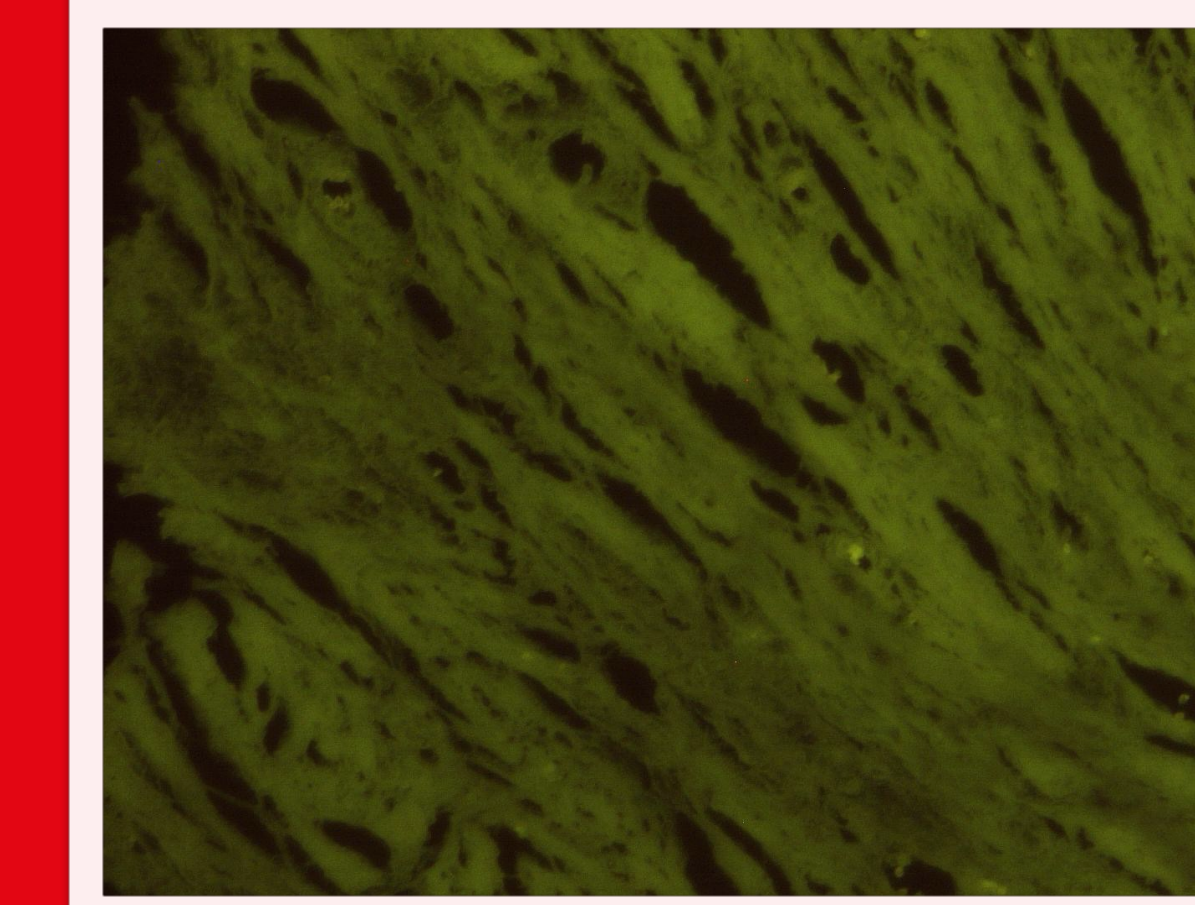


Figure 2.

Intensive glow of the collagen of the III type in myometrium of the fetal uterus 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.

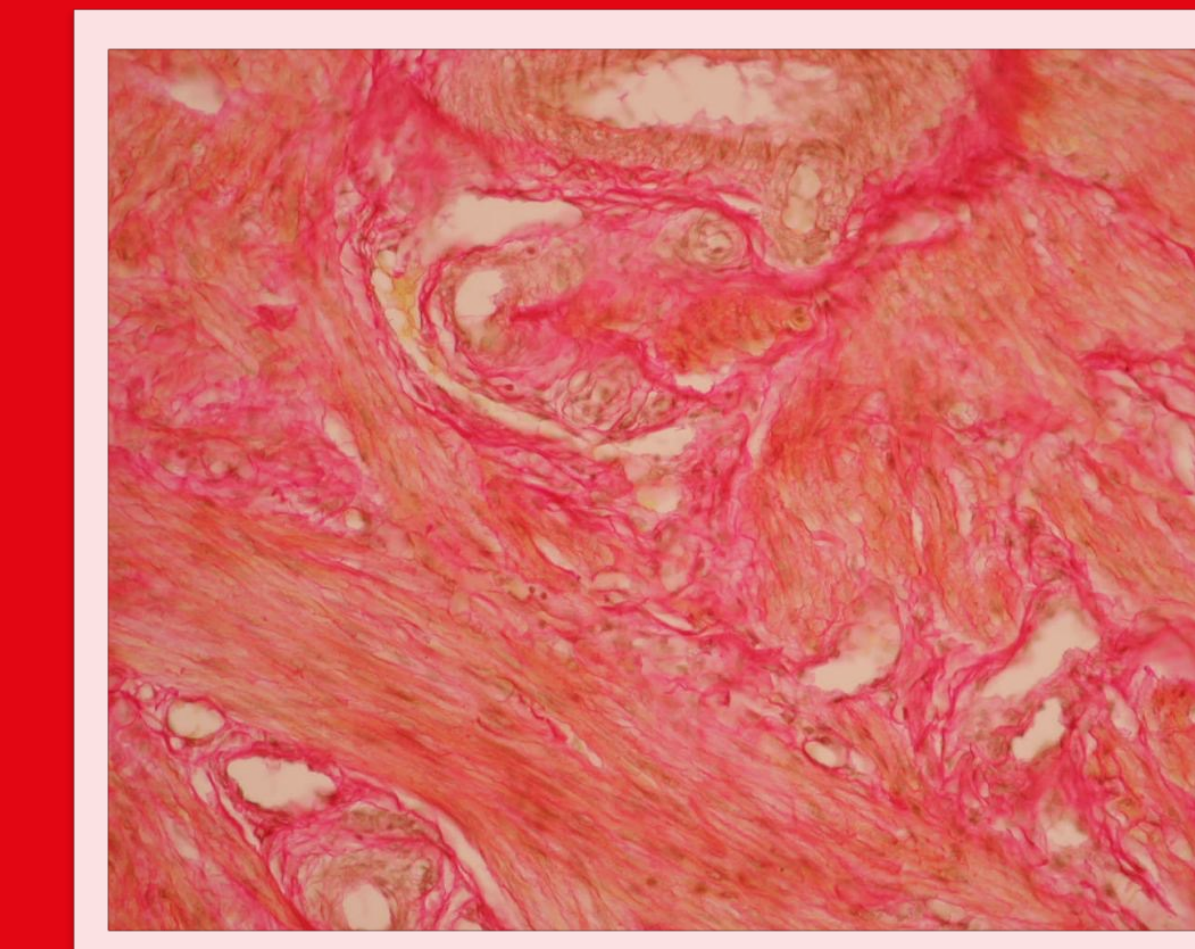


Figure 3.

Fetal uterus of the main group 1 with a gestation term of 37-42 weeks. Severe PE of the mother. The growth of the connective tissue in the structure of myometrium. Stained with van-Gieson's picrofuchsin, x200.

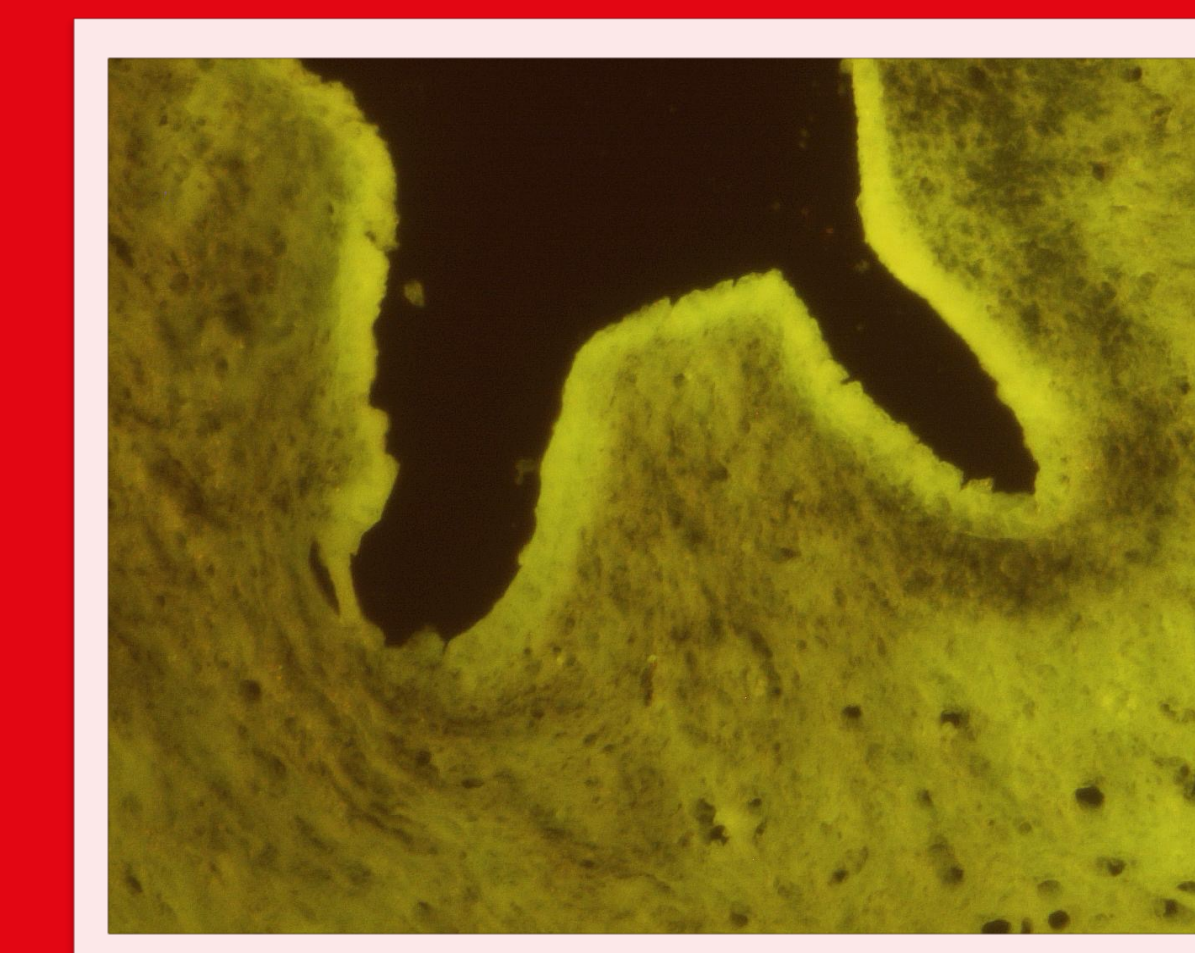


Figure 4.

Intensive glow of the collagen of the III type in the wall of fetal uterus of the main group 1 with a gestation term of 29-36 weeks. Severe PE of the mother. Immunohistochemical method with MCAT to the collagen of the III type, x100.

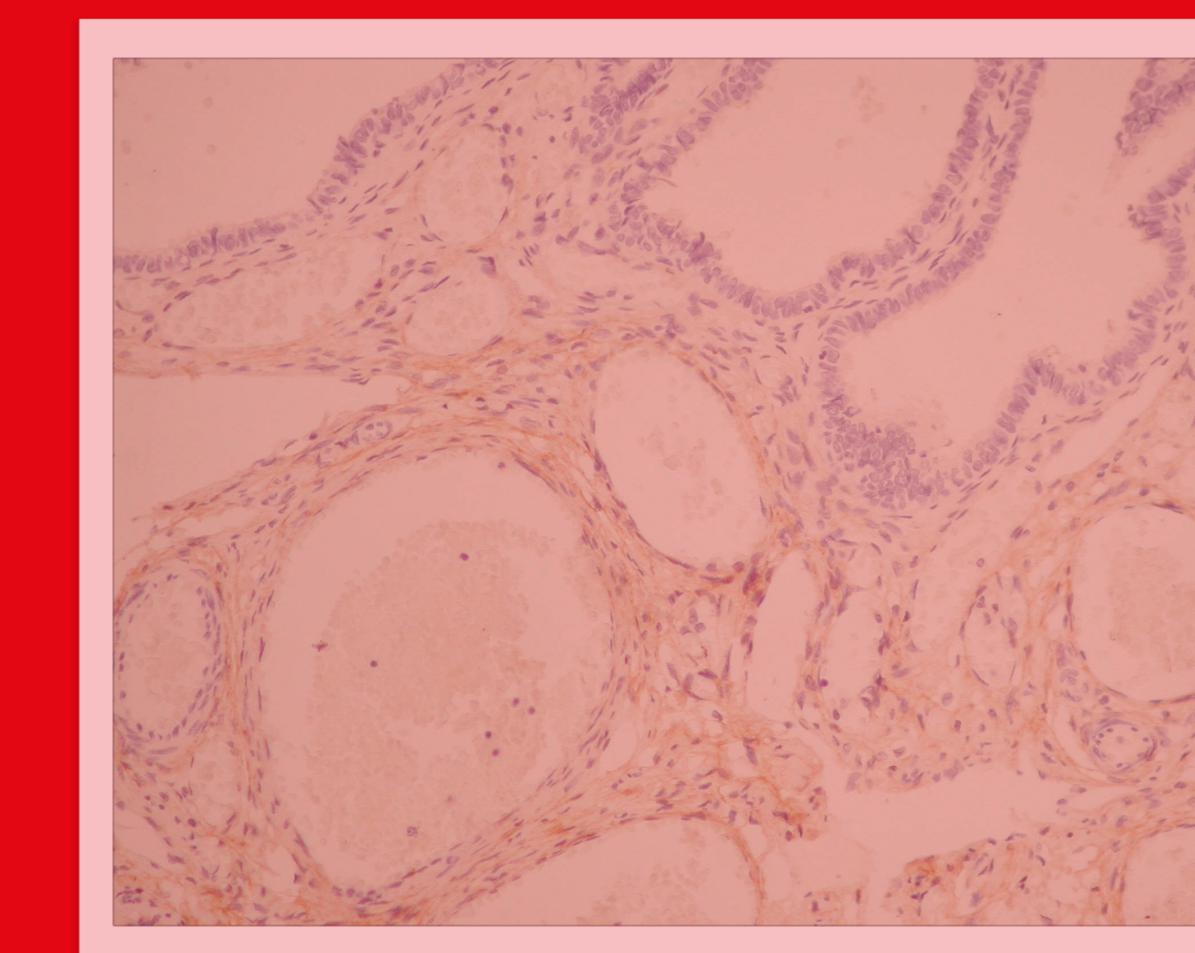


Figure 5.

Intensive glow of the collagen of the III type in the wall of fetal uterus of the main group 1 with a gestation term of 29-36 weeks. Severe PE of the mother. Immunohistochemical method with MCAT to CD 34, x400.