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PATHOMORPHOLOGICAL FEATURES OF PLACENTAL TISSUE IN LATE OR TERM PREGNANCY

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ABSTRACT

The article delves into a comprehensive examination of pathomorphological changes and criteria pertaining to placental tissue following premature pregnancies. This research was conducted by scrutinizing the placentas of late-term pregnant women at the perinatal center located in the Bukhara region. The primary objective was to shed light on the distinct alterations in placental tissue that result from premature pregnancies.

The findings of this study revealed several critical morphological criteria that can be used to assess and understand the impact of premature pregnancy on placental health. These criteria serve as valuable insights into the structural and functional changes that take place within the placenta when a pregnancy ends prematurely. This knowledge can contribute significantly to the field of obstetrics and gynecology, aiding in the early detection and management of complications arising from premature pregnancies. Overall, the research underscores the importance of thorough examination and assessment of placental tissue in the context of premature pregnancies to improve maternal and fetal outcomes.

Keywords: pregnancy, terminal nipples, dystrophy, fibrinoid.

Importance. Late pregnancy is of great scientific and practical interest in obstetric practice. The relevance of this problem is explained by the high number of complications and perinatal mortality during childbirth. Pathological conditions in the fetus in late pregnancy are primarily associated with changes in the placenta, which is confirmed by many morphological studies.

In late or overdue pregnancy, the placenta does not have any specific characteristics; usually, in micro-preparations, the pathological immaturity of the papillae prevails, often with weak vascularization, the type of intermediately differentiated papillae and calcifications are more common. One of the critical factors is to evaluate the size of the compensatory reactions in the form of angiomatosis of the terminal nipples (1-7).

Purpose of work. During the morphological study of the placenta, we tried to determine the morphological criteria for diagnosing a late or overdue pregnancy of 42-43 weeks.

MATERIAL AND METHODS

Macroscopic and microscopic examination of 24 delayed or premature placentas of 42-43 weeks from Bukhara city maternity complex was carried out.

In late pregnancy, the placenta is thinner when seen macroscopically, its surface is dry, the boundaries between the segments are not defined, and it has an incorrect shape.

Staining of the placenta, umbilical cord, and shell with meconium fluids can be observed (due to fetal hypoxia). White infarcts, calcifications, and areas of fatty degeneration are visible on the surface of the placenta.

In late pregnancy, the weight of the placenta increases by 100-400 g compared to the norm. Placental tissue fragments were processed in the laboratory for one week for morphological study, and microscopic preparations were prepared. These preparations were studied under a microscope and the necessary areas.

RESULTS

With a morphometric approach, it became clear that the presence of calcifications can be considered a reliable sign of late or overdue pregnancy because, according to the conclusions of our work, a 3-fold increase in the number of calcifications in late or delinquent pregnancy allows us to recommend it as a pathomorphological equivalent of late or overdue pregnancy.

The following described sign of late pregnancy was local dystrophic changes in the syncytiotrophoblast of the suckling pig (Chernukha E. A. et al., 1977, 2007); this structural indicator was called a decrease in the activity of the syncytiotrophoblast of the teats, it was statistically significantly decreased only in the late pregnancy group.

E. L. Chernukha et al. (2007) that sclerosis or fibrosis of the mammary stroma is an essential indicator of delayed pregnancy. Our study did not record this morphometric feature because it was weakly detected when stained with hematoxylin and eosin. However, van Gieson's method clearly showed the accumulation of connective tissue around the vessels of the supporting papillae, in the stroma of the intermediate papillae, and partially in the terminal papillae.

This sign is also one of the main features that should be considered the pathomorphological equivalent of delayed pregnancy.

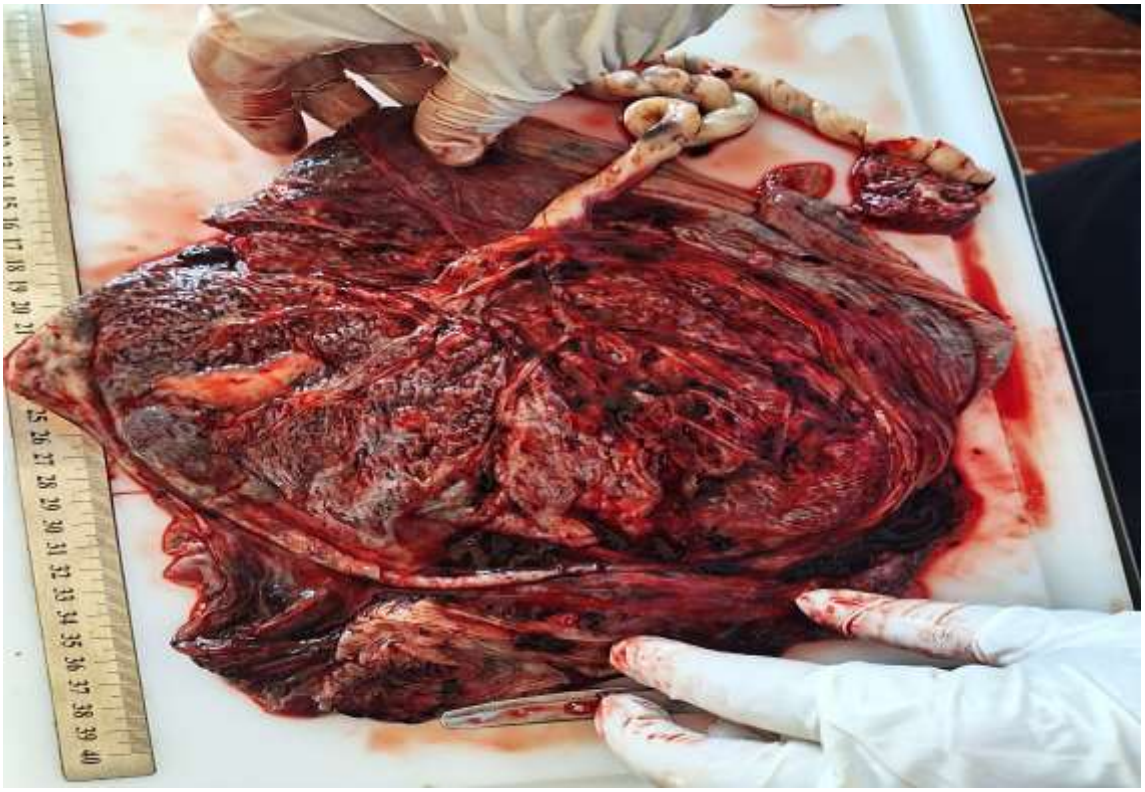
During our research, it was possible to identify "new" signs of late pregnancy, which were not reflected in the publications mentioned above but were known in describing other forms of placental insufficiency. This includes the so-called "glued nipples" (Milovanov A. P., 1999) morphological feature.

Areas of contiguous papillae are seen with preservation of the epithelial lining and stromal components. We pay special attention to this sign because morphometry has indeed confirmed a significant increase in the areas of the nipples that overlap each other in late pregnancy.

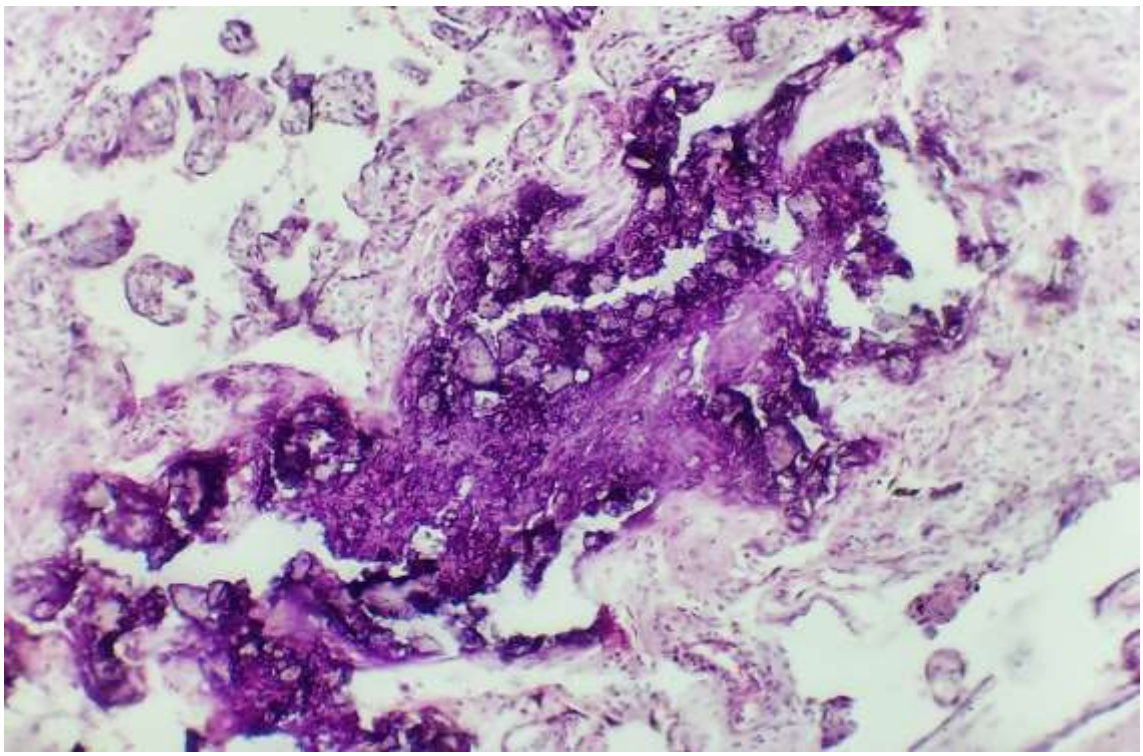
At the same time, the correlational analysis did not confirm the presence of reliable correlations between the placenta and the organometric parameters of the placenta.

It was concluded that nipples stuck to each other should be considered a reliable sign of a conditionally late pregnancy.

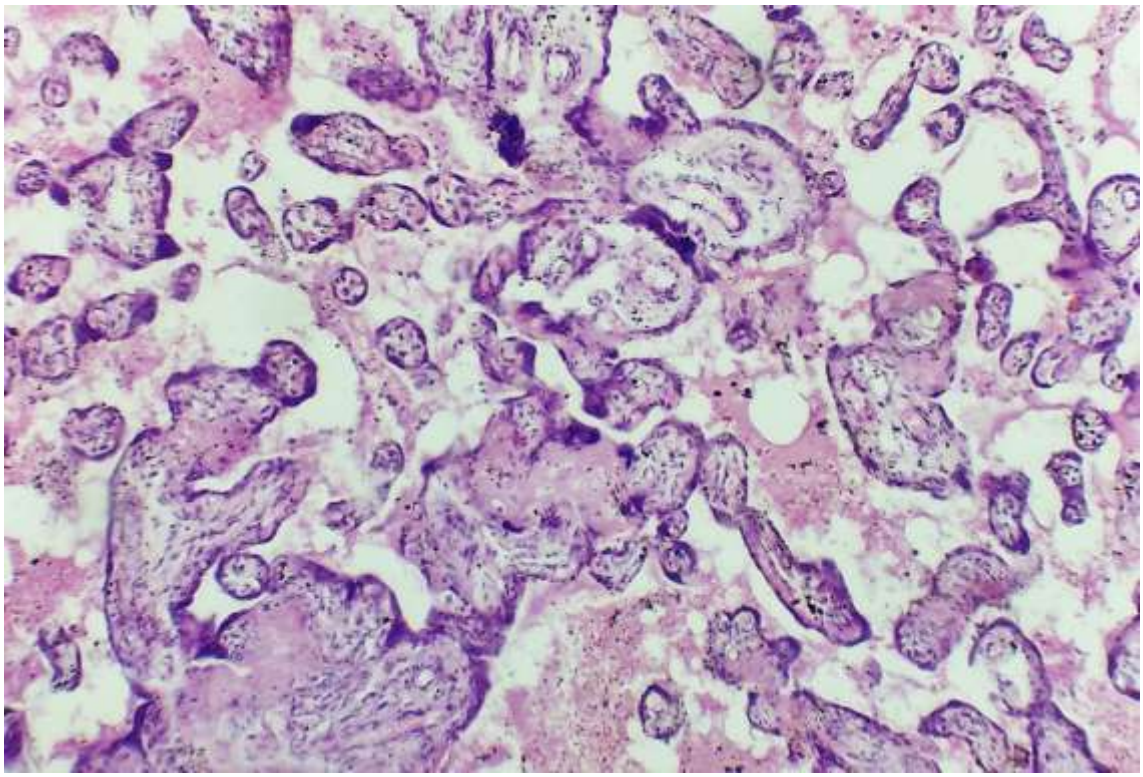
Picture1. Macropreparation. Placenta 42-43 weeks of pregnancy.



Picture 2. Macropreparation. Placenta 42-43 weeks of pregnancy.



Picture 3. Micropreparation. Placental tissue. Paint G-E. Ok 20×10 ob.



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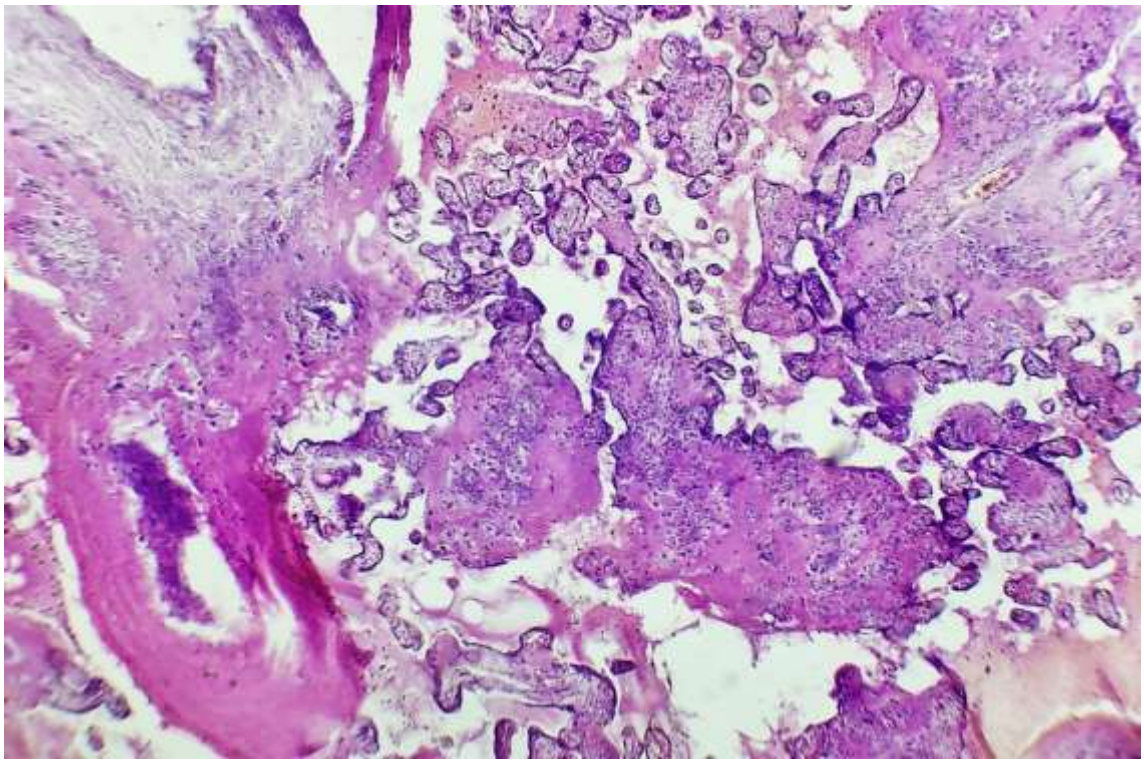
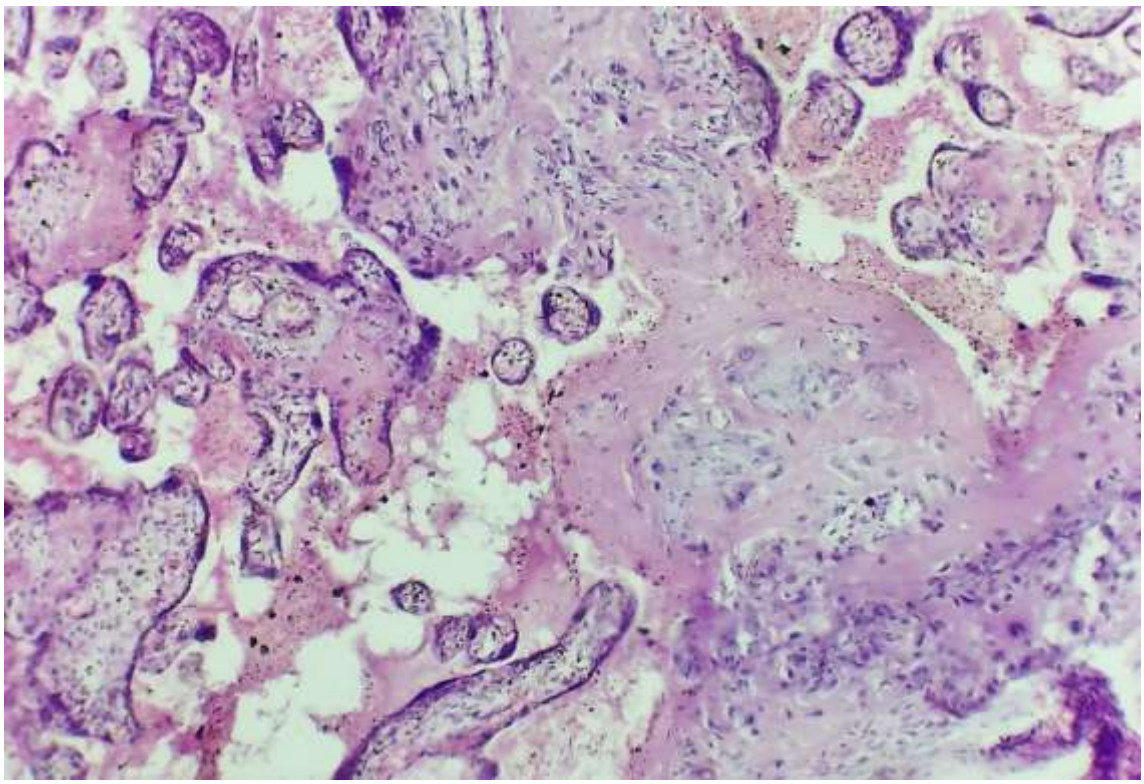
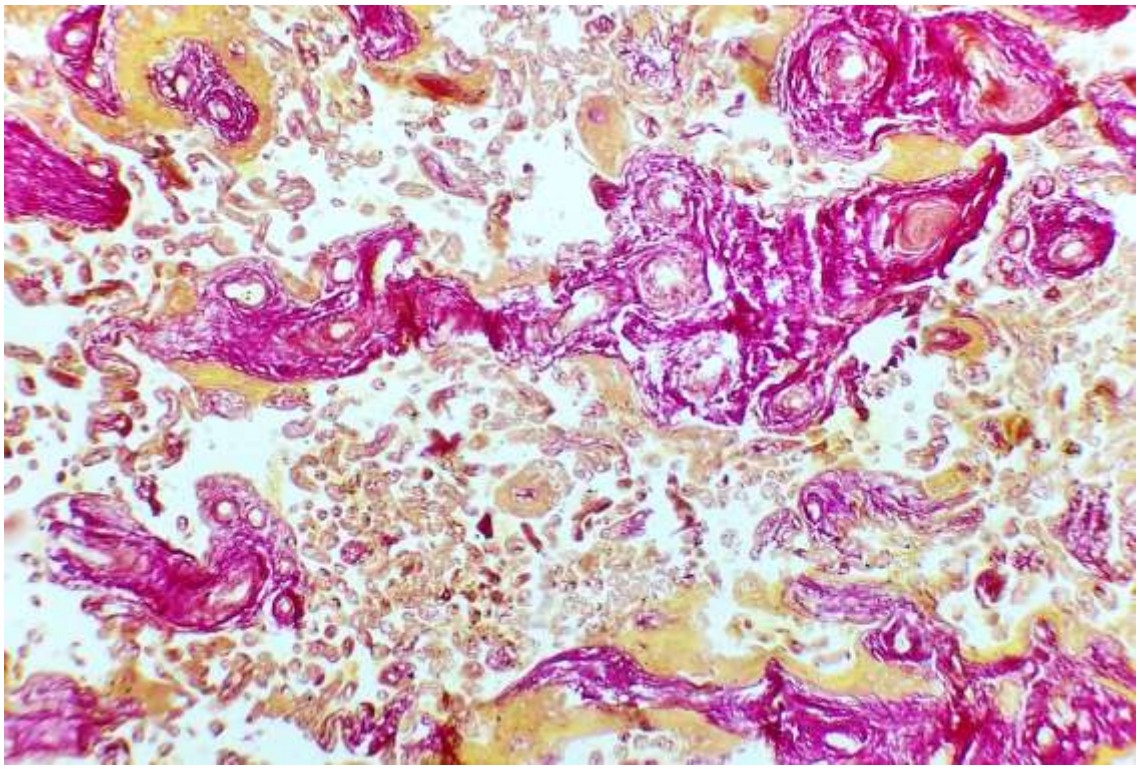


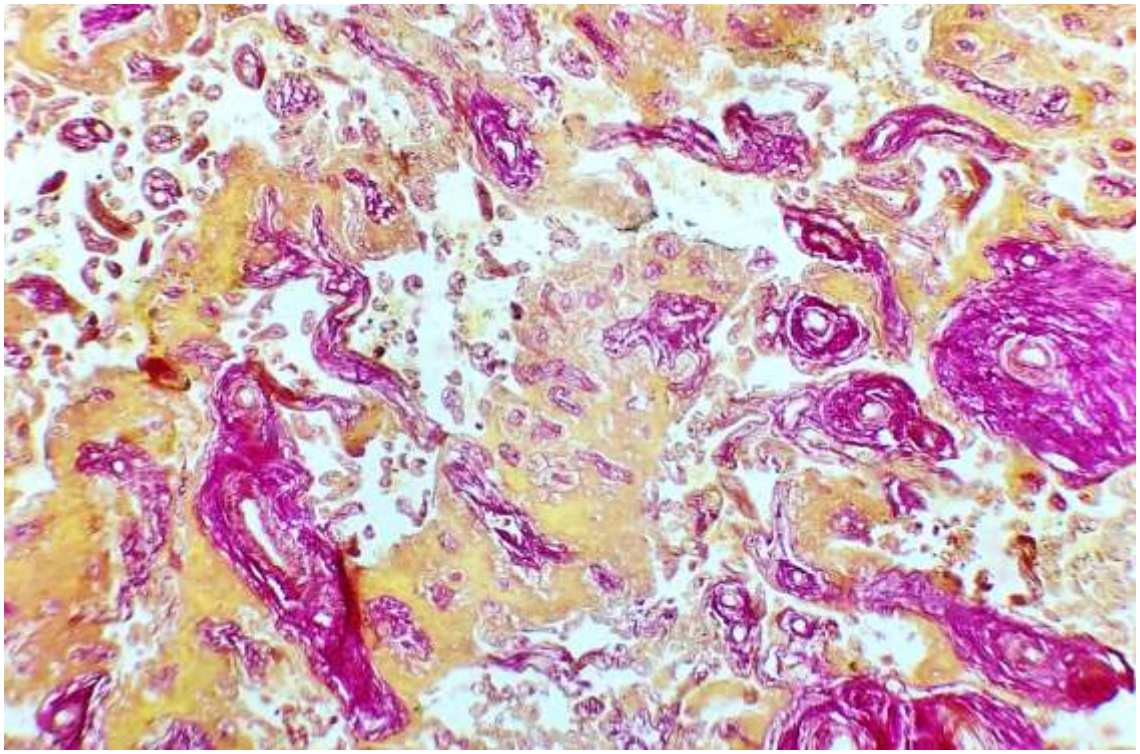
Picture 5. Micropreparation. Placental tissue. Paint G-E. ok 20×10 ob.



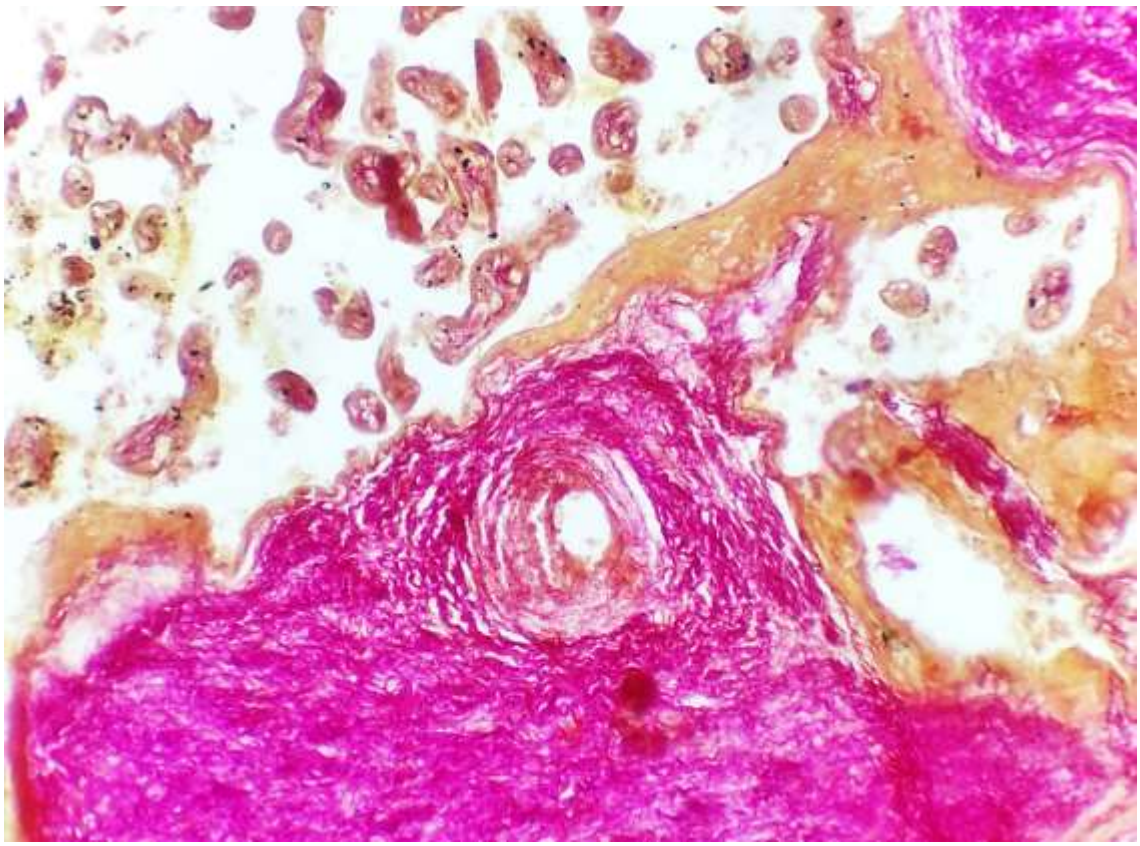
Picture 6. Micropreparation. Placental tissue. Paint G-E. ok 20×10 ob.



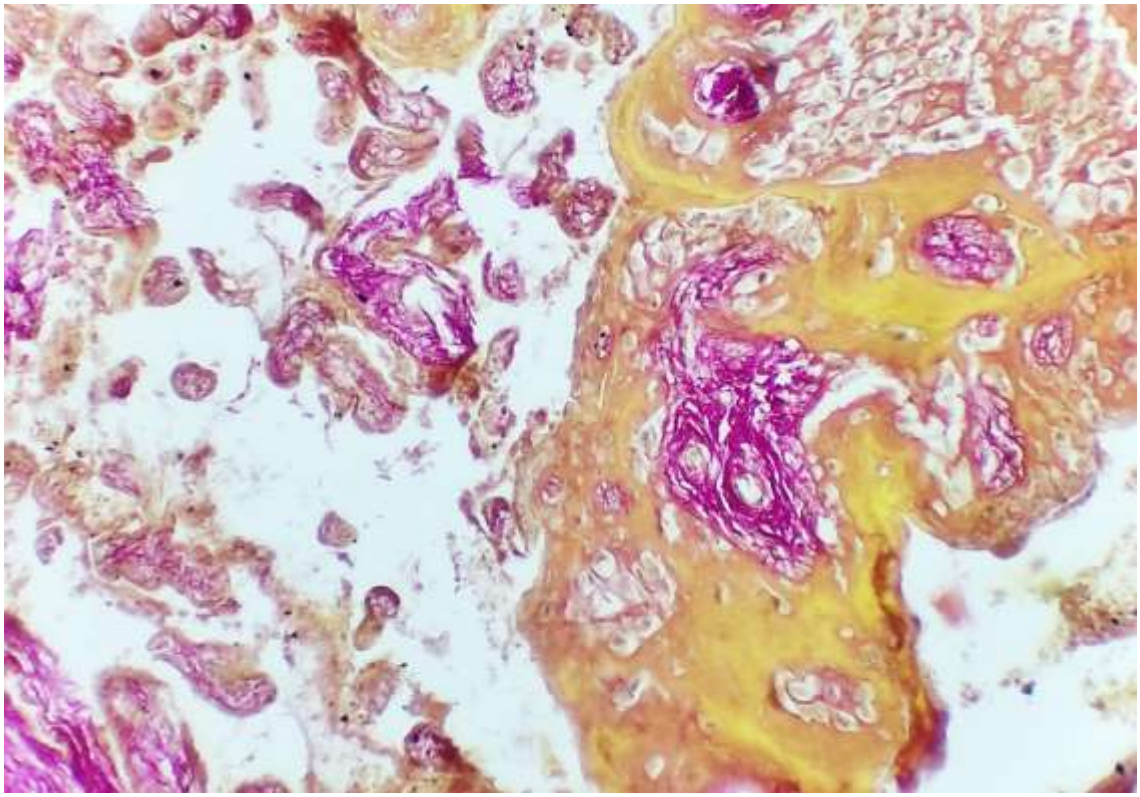
Picture 7. Micropreparation. Placental tissue. Paint van Gieson. ok 20×10 ob.



Picture 8. Micropreparation. Placental tissue. Paint van Gieson. ok 20×10 ob.



Picture 9. Micropreparation. Placental tissue. Paint van Gieson. ok 20×40 ob.



Picture 10. Micropreparation. Placental tissue. Paint van Gieson. ok 20x40 ob.

CONCLUSION

As a result of the study of pathomorphological changes in placental tissue in late or premature pregnancy, the following criteria were determined:

1. There is a 3-fold increase in the area occupied by calcifications in placental tissue.
2. Occurrence of local dystrophic changes in the syncytiotrophoblast of mammals.

3. Expansion of the area of sclerosing or fibrosis of the mammary stroma.
4. Accumulation of connective tissue around the vessels of the primary nipples, in the stroma of the intermediate nipples, and partially in the terminal nipples.
5. An increase in the area of \u200b\u200bthe overlapping nipples.

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