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ACUTE LEUKEMIA AND PREGNANCY

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Acute leukemia is described in the article along with a synopsis of the primary morphological alterations that occur in pregnant women's ovaries and uterus. Additionally, research is conducted by examining and utilizing the findings of both domestic and foreign medicine.

Key words: *uterus, endometrium, pregnancy, acute leukemia.*

Acute leukemia is a diverse neoplastic condition affecting the blood system that starts at the location where blood-forming monoclonal head cells proliferate. All OLs are clonal and result from a single cell mutation. This results in a molecular disruption of the cell cycle, which causes unchecked proliferation, a lack of differentiation, a pathological explosion, and the accumulation and proliferation of cells. The clinical course of the disease, the efficacy of treatment, and the prognosis are all influenced by the blast cells' molecular makeup, maturity level, and affiliation to either the myeloid or lymphoid line of hematopoiesis. Compared to lymphoid leukemia, acute myeloid leukemia is diagnosed six times more frequently.

One out of every 75,000 to 100,000 pregnant patients without leukemia has an oncohematoma. Acute myeloid leukemia affects one-third of patients, acute lymphoblastic leukemia affects two-thirds, and acute promyelocytic leukemia affects very few.

Prenatal fetal death happens in 63% of natural trimesters, and 25% of pregnancies result in an undeveloped pregnancy in the first trimester, depending on the severity of polychemotherapy and the chemotherapy medications provided. When 75% of impacted women are accepted, the patient's acute myelo- or lymphoblastic leukemia completely remits, but the overall survival percentage remains unchanged.

The patient's age has a significant impact on the prognosis and outcome of OML. Long-term relapse-free survival is a feature of 40–50% of patients under 40. OLL has a favorable prognosis, with a 75% or higher 5-year survival rate. Leukemia acute and pregnancy.

Pregnancy and UL appeared to be mutually exclusive until recently. The disease's most severe clinical manifestation, the requirement for prolonged treatment, and the

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high rate of potentially fatal side effects make it difficult to always accomplish the primary objective. Leukemia treatment during pregnancy is more complex and calls for a competent and moral approach that aligns with the patient's and his family's objectives in addition to the technical expertise and experience of multidisciplinary medical specialists.

In order to treat pregnant patients with UL, the minimal impact on the fetus must be balanced with the need to treat the mother. The use of leukemia during pregnancy raises a variety of ethical, societal, and medical issues. Is it possible to have chemotherapy when pregnant? Can leukemia develop in a fetus? How long do a mother and child anticipate to live? Morphological changes should be examined, and further treatment strategies should be updated, in order to provide a precise response to these issues pregnancy-related acute leukemia diagnosis.

UL diagnosis is carried out in full volume in pregnant ladies. Therapy efficacy can only be guaranteed by a thorough approach to leukemia variant detection. Laboratory symptoms that resemble the onset of UL (anemia, leukocytosis) during pregnancy may cause the diagnosis to be postponed. Patients at risk may have particular and atypical complaints like weariness, pallor, numerous infectious infections, and bleeding of unexplained etiology, or the diagnosis may be made by chance during a clinical examination.

The expansion of the liver, spleen, and lymph nodes indicates the beginning of the disease. It need a microscope to assess the cell morphology in order to detect the blast cells in the mine; counting them in an automatic analyzer is insufficient. It has been repeatedly established that a bone marrow puncture biopsy, which is required for the study of bone marrow in pregnant women, is safe. In extreme situations, a lumbar puncture can be used to get a sample of the spinal cord and cerebrospinal fluid in order to rule out the effects of blast crisis on the central nervous system. Less than 1 in 10,000 pregnant women will have UL throughout their pregnancy, making it extremely uncommon.

Patient A, a 27-year-old woman from the Surkhandarya district who had a natural abortion at 12–13 weeks of pregnancy, was brought to the region's emergency central hospital with severe bleeding. Regretfully, the uterus and uterus were removed during surgery. The patient was referred to the hematology department of the Tashkent Medical Academy's second clinic after her health did not improve, and it was determined that she had acute myeloblastic leukemia. He was diagnosed with acute myeblastic leukemia with hemorrhagic syndrome, ONMK hemorrhage in the right top and side temporal branch of the brain, brain tumor, acute liver and kidney disease, and he passed away in the TTA clinic's intensive care unit on the third day. He was then sent to the Republican Center for Pathological Anatomy.

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The following patho-anatomical diagnosis was determined as the final diagnosis based on autopsy data and findings from histological analysis of autopsy material: Main: High-risk, active phase 1 acute myeloblastic leukemia with blast crisis. Hepatosplenomegaly, brain encephalomalacia, and foci of hemorrhagic bleeding in the right upper and lateral temporal branches of the brain. 2. Acute posthemorrhagic anemia, normal postpartum condition, and pregnancy 2, 12–13 weeks.

The symptoms of DVS syndrome include erosive gastroenterocolitis, necrotic pancreatitis, necrotic nephrosis, bilateral acute bronchopneumonia, small point hemorrhages in the parenchyma of organs, erosive gastroenterocolitis, and left ovarian follicular cyst.

The research of this case has led to the conclusion that there are numerous unexplored parts of current medicine, such as the inadequacies in the way pregnancy is managed in medical facilities, including the delay in leukemia diagnosis.

Leukemia was diagnosed after a review of blood tests, bone marrow trepanation, and cytomorphological analysis. Polyorgan failure results from the blast crisis's dystrophic, histo-archeotectonic alterations in every organ. The development of hemorrhagic syndrome, systemic blood cell tumors, delayed pregnancy development, and deficiencies in vital proteins are primarily caused by severe pathological processes in the liver and spleen. The causes are thrombocytopenia, a substantial rise in lymphocytes, and aplastic anemia.

ANALYTICAL INDICATORS	NORM	PATIENT INDICATIONS
HEMOGLOBIN	Men - 130-170 gr/l Women - 120-150 g/l	65 g/l
ERYTHROSITES	Men - 4.0-5.0 x 1012/l Women - 3.5-4.7 x 1012/l	$2{,}8x10^{12}$/l
LEUCOCYTES	Value range - 4.0-9.0x109/l	$15{,}0 \times 10^{9}$/l
PERCENTAGE OF HEMATOCRIT (RATIO OF BLOOD ELEMENTS AND PLASMA)	Men - 42-50 percent Women - 38-47 percent	53 foiz
AVERAGE VOLUME OF erythrocytes	Value range - 86-98 μm3	76mkm^3
LEUCOCYTE FORMULA	Neutrophils Segment nuclear forms - 47-72 percent Rod nuclear forms - 1-6 percent Lymphocytes 19-37 percent Monocytes 3-11 percent Eosinophils 0.5-5 percent Basophils 0-1 percent	Segment nuclear forms - 87 percent Rod nuclear forms - 19 percent Lymphocytes -37 percent Monocytes 23 percent Eosinophils 0 Basophils 0
PLATELET	VALUE RANGE 180-320. 109/l	70×10^{9}/l
ERYTHROCYTE CROP RATE	MEN – 3-10 mm/h Women - 5-15 mm/h	3 mm/hour

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Rapid weariness, appetite loss, dizziness, sporadic nosebleeds, weight loss, and rapid susceptibility to infectious infections are all clinical indications of leukemia that invariably impede an accurate diagnosis during pregnancy.

Our scientific work's primary goal is to use a scientific retrospective approach to examine the pathomorphological alterations in pregnant women's genitalia against the backdrop of acute leukemia and to statistically complete the results gathered from the medical history data.

The necessary parameters from the general blood analysis of the patient are given in the table above.

In the histological examination, we can find a confirmation of our conclusions by taking a sample from the uterus.

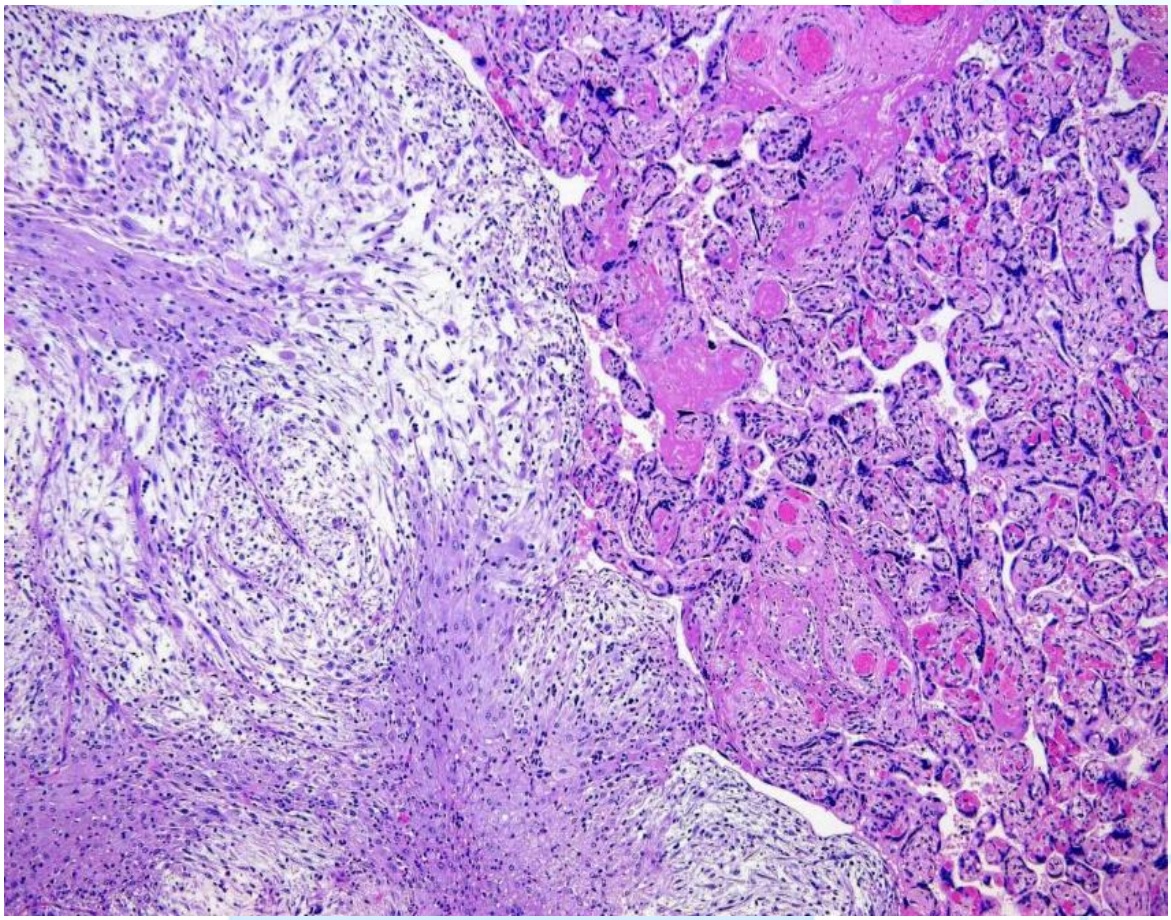

Figure 1. Placental tissue and part of the uterus. In acute myelocytic leukemia, diffuse leukemic infiltrate, monoclonal cells occupying all parts of the functional layer can be seen. (hemotoxylin-eosin)

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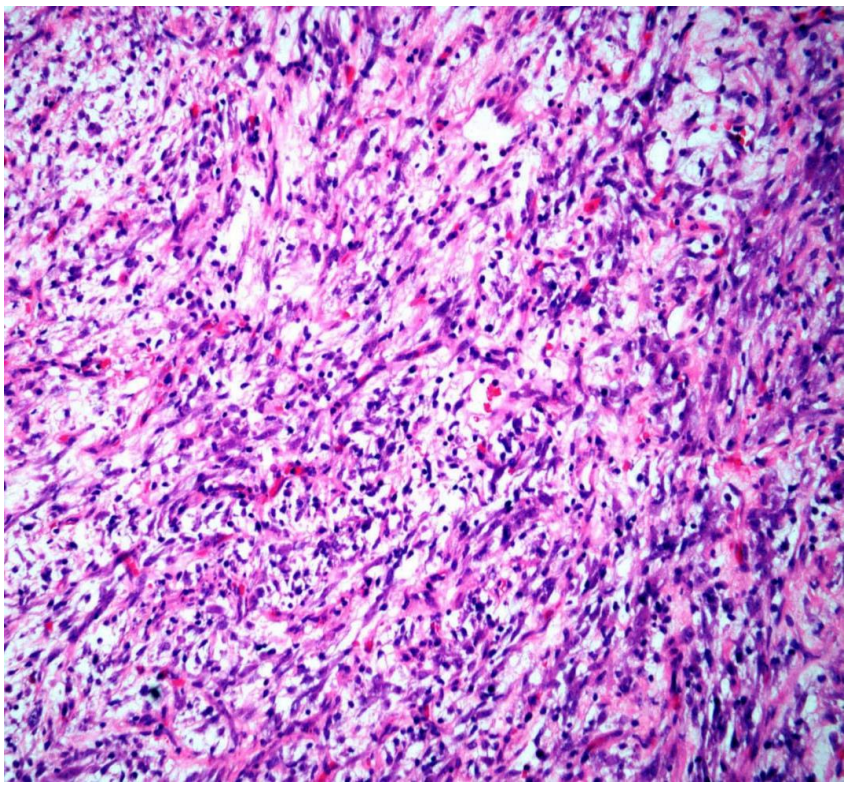

Picture 2. The spread of decidual cells and myeloid blast infiltrate in the acellular fibrous structure of the functional layer of the uterus, interstitial swelling and pathological increase of fibrinoid fibers can be clearly seen.

Pregnant women with acute leukemia experience the following alterations in their uterus. The uterine endometrium exhibits focal infiltrates in certain vascular locations and diffuse infiltrates around parenchyma cells in functional and basal areas. Large and small hummingbird blood vessels can be identified in the interstitium of the decidual membrane. Blast infiltrate cells are distributed in decreasing order of density between the decidual cells. The perivascular branch, or blood vessel peripheral, appears multifocal. In the interstitium, some foci have a higher number of blast infiltrates than others. Diffuse is more dispersed within individual cells. The sparse fibrous unformed connective tissue components are sandwiched between decidual cells.

Mesenchymal, fibroblast, and macrophage cells are examples of differentiated (specialized) cells at different stages of development. The size of the differentiating cells and the cytoplasmic nucleus of these cells, as well as the fact that the cytoplasm of these cells is stained with eosin at varying intensities, suggest that the cytoplasm contains various kinds of glycogen and organoids. These cells are somewhat smaller and have less eosin-stained cytoplasm because there is more blast infiltration surrounding them. Additionally, the cells in these regions varied in size and shape, and it was discovered that they had decreased as a result of intermediate edema, hypoxia, and toxic consequences. Vascular engorgement, perivascular hemorrhages, and stroma interstitial edema are also visible.

Smooth muscle cells, fibroblasts, fibrocytes, sparsely fibrous unformed tissue fibers, and interstitium are all hyperplastic and enlarged in the myometrium layer, and there is also a diffuse blastic infiltration among them all. The interstitial tumor stroma contains tiny blood channels that contain blast cells.

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An overview. Genetic mutational processes that form the basis of DEATH are brought about or made worse by physiological and pathological processes that occur during pregnancy, as well as complex, urgent events that emerge or occur after birthing, as in the example above:

raises cell mutation and drastically lowers cell differentiation and maturation, which leads to the development of "immature" cells that resemble stem cells. Leukemia cells then become clones and spread to all hematopoietic organs, which results in the clinical manifestation of OL in pregnant women. There are certain traits of acute leukemia in pregnant women. Specifically, this condition is rather uncommon, and the bone marrow is filled (infiltrated) with blast cells that have lost their ability to differentiate and mature, which surely has a devastating effect during pregnancy.

Laboratory indicators of O'L during pregnancy are very useful for diagnosis. Leukocytosis is more than 100*109/l (leukemic leukemia), slightly increased (subleukemic leukemia), or not increased at all (aleukemic leukemia), according to him. In contrast, pancytopenia (leukopenia, anemia, and thrombocytopenia) is a characteristic of leukemic leukemia. will be

Hemorrhagic syndrome, which includes nosebleeds, skin bleeding, kidney and urinary tract hemorrhage, polymenorrhea, etc., is present in nearly all patients with acute leukemia. The basis for this is the death of megakaryocytes due to metaplasia in the patient's bone marrow, which leads to a decrease in thrombocytes and a disruption in the patient's blood coagulation process.

It is evident that genital secondary leukemia during pregnancy can only be identified when clinical signs manifest. It is obvious that this will result in the pregnancy being terminated or put the unborn child's life in jeopardy. Additionally, there are noticeable alterations in the endometrium, particularly in T-lymphocytic leukemia, where leukemic infiltration is visible around blood vessels and frequently vascular dystrophic processes are also present.

MEDICAL AND SCIENTIFIC PUBLICATIONS.

1. Альради Л. С. и др. Волосатоклеточный лейкоз и беременность //Терапевтический архив. – 2017. – Т. 89. – №. 7. – С. 99-104.
2. Аргунова И. А. Миелоидная реакция у беременной с ремиссией острого лимфобластного лейкоза: сепсис, рецидив или особенность гестации? //Трудный пациент. – 2020. – Т. 18. – №. 8-9. – С. 39-43.
3. Виноградова М. А. и др. Беременность и острые лейкозы: международный опыт //Акушерство и гинекология: Новости. Мнения. Обучения. – 2014. – №. 2 (4). – С. 25-33.
4. Галстян Г. М. и др. Интенсивная терапия угрожающих жизни осложнений у беременных с острыми лейкозами //Анестезиология и реаниматология. – 2017. – Т. 62. – №. 4. – С. 268-274.

5. Красильникова О. И. и др. Острые лейкозы у беременных //Вестник Челябинской областной клинической больницы. – 2018. – №. 2. – С. 3-5.
6. Мамасолиев Н. С. и др. Гемобластозы, острый лейкоз и беременность: современные терапевтические и акушерские тактики //Re-health journal. – 2021. – №. 4 (12). – С. 24-32.
7. Нематжон М. Гемобластозы, острый лейкоз и беременность: современные терапевтические и акушерские тактики //Re-health journal. – 2022. – С. 2181-0443
8. Нечаевских В. И., Зинина Е. Е. Опыт лечения пациентки с острым промиелоцитарным лейкозом на фоне беременности: обзор литературы и собственный клинический случай //Здравоохранение Югры: опыт и инновации. – 2019. – №. 2. – С. 57-64.
9. Никитин Е. Н., Миклин Д. Н., Корняева Е. П. Успешное лечение впервые выявленного острого промиелоцитарного лейкоза у беременной женщины //Гематология и трансфузиология. – 2017. – Т. 62. – №. 2. – С. 105-108.
10. Нишонова Н. А., Якуббекова М. К., Хамидов Ф. Ш. Оценка случаев вторичного иммунодефицита у больных острым лейкозом //Экономика и социум. – 2021. – №. 10 (89). – С. 934-938.
11. Поленова Е. С. и др. Клинический случай хронического миелолейкоза у беременной женщины в Ханты-Мансийском автономном округе-Югре //Научный медицинский вестник Югры. – 2019. – Т. 19. – №. 2. – С. 251-254.
12. Рамазанова Р. М. и др. Лечение впервые выявленного острого промиелоцитарного лейкоза у беременной женщины //Вестник Казахского Национального медицинского университета. – 2021. – №. 3. – С. 8-12.
13. Троицкая В. В. и др. Лечение острого промиелоцитарного лейкоза у беременных //Терапевтический архив. – 2013. – Т. 85. – №. 10. – С. 56-63.
14. Троицкая В. В. и др. Лечение острых лимфобластных лейкозов у беременных по протоколу ОЛЛ-2009 //Гематология и трансфузиология. – 2018. – Т. 63. – №. 3. – С. 209-230.
15. Савченко В. Г. и др. Протокол лечения острых лейкозов на фоне беременности //Алгоритмы диагностики и протоколы лечения заболеваний системы крови. – 2018. – С. 753-792.
16. Филянина А. В. Беременность и острый лейкоз //Студенческий вестник. – 2021. – №. 11-2. – С. 47-48.
17. Bhargava S., Lal M., Sharma M. Acute lymphoblastic leukemia with pregnancy: a rare case //International Journal of Reproduction, Contraception, Obstetrics and Gynecology. – 2015. – Vol. 4. – №. 3. – pp. 887-889.
18. Chang A., Patel S. Treatment of acute myeloid leukemia during pregnancy //Annals of Pharmacotherapy. – 2015. – Vol. 49. – №. 1. – pp. 48-68.
19. Cheng J. et al. Maternal coffee consumption during pregnancy and risk of childhood acute leukemia: a metaanalysis //American journal of obstetrics and gynecology. – 2014. – Vol. 210. – №. 2. – pp. 151. e1-151. e10.
20. Farhadfar N. et al. Acute leukemia in pregnancy: a single institution experience with 23 patients //Leukemia & Lymphoma. – 2017. – Vol. 58. – №. 5. – pp. 1052-1060.
21. Fracchiolla N. S. et al. Acute myeloid leukemia and pregnancy: clinical experience from a single center and a review of the literature //BMC cancer. – 2017. – Vol. 17. – pp. 1-8.
22. Hashemnejad M. et al. Reporting a case of acute leukemia in pregnancy //Journal of Computational and Theoretical Nanoscience. – 2019. – Vol. 16. – №. 7. – pp. 2847-2850.

ISSN 2181-3187

23. Horowitz N. A. et al. Acute myeloid leukemia during pregnancy: a systematic review and meta-analysis //Leukemia & Lymphoma. – 2018. – Vol. 59. – №. 3. – pp. 610-616.
24. Li Y. W. et al. Acute myeloid leukemia during pregnancy: a single institutional experience with 17 patients and literature review //International Journal of Hematology. – 2020. – Vol. 112. – pp. 487-495.
25. McGregor A. K., Das-Gupta E. Acute myeloid leukaemia in pregnancy //British Journal of Haematology. – 2015. – Vol. 170. – №. 4. – pp. 441-442.
26. Milojkovic D., Apperley J. F. How I treat leukemia during pregnancy //Blood, The Journal of the American Society of Hematology. – 2014. – Vol. 123. – №. 7. – pp. 974-984.
27. Nolan S., Czuzoj-Shulman N., Abenhaim H. A. Obstetrical and newborn outcomes among women with acute leukemias in pregnancy: a population-based study //The Journal of Maternal-Fetal & Neonatal Medicine. – 2020. – Vol. 33. – №. 20. – pp. 3514-3520.
28. Pineda-Mateo M., Rodríguez-Pérez A., Rojo-Novo S. Acute myeloid leukemia diagnosed during pregnancy. Case report //Ginecología y obstetricia de México. – 2021. – Vol. 89. – №. 10. – pp. 832-838.
29. Sanz M. A. et al. Maternal and fetal outcomes in pregnant women with acute promyelocytic leukemia //Annals of hematology. – 2015. – Vol. 94. – pp. 1357-1361.
30. Santolaria A. et al. Acute promyelocytic leukemia during pregnancy: a systematic review of the literature //Cancers. – 2020. – Vol. 12. – №. 4. – pp. 968.
31. Ticku J. et al. Acute lymphoblastic leukemia in pregnancy: a case report with literature review //Therapeutic Advances in Hematology. – 2013. – Vol. 4. – №. 5. – pp. 313-319.
32. Troitskaia V. V. et al. Treatment for acute promyelocytic leukemia during pregnancy //Terapevticheskii arkhiv. – 2013. – Vol. 85. – №. 10. – pp. 56-63.
33. Verma V. et al. Acute promyelocytic leukemia during pregnancy: a systematic analysis of outcome //Leukemia & Lymphoma. – 2016. – Vol. 57. – №. 3. – pp. 616-622.
34. Yan K. et al. The associations between maternal factors during pregnancy and the risk of childhood acute lymphoblastic leukemia: A meta-analysis //Pediatric blood & cancer. – 2015. – Vol. 62. – №. 7. – pp. 1162-1170.
35. Zhou Y. et al. Maternal benzene exposure during pregnancy and risk of childhood acute lymphoblastic leukemia: a meta-analysis of epidemiologic studies //PloS one. – 2014. – Vol. 9. – №. 10. – pp. e110466.
36. Zhu D. et al. Acute leukemia in pregnancy: a single institutional experience with 21 cases at 10 years and a review of the literature //Annals of Medicine. – 2021. – Vol. 53. – №. 1. – pp. 567-575.