



## PATHOMORPHOLOGICAL CHANGES IN LYMPH NODES IN MEASLES IN CHILDREN

D.S. Turdimatov<sup>1</sup>

M.S. Tokhtasinov<sup>2</sup>

Fergana Regional Pathological Bureau<sup>1</sup>

Central Asia Medical University<sup>2</sup>

### ARTICLE INFO

Received: 11<sup>th</sup> July 2024

Accepted: 16<sup>th</sup> July 2024

Online: 17<sup>th</sup> July 2024

### KEY WORDS

*Virus, measles, lymph nodes, follicle, paracortical hyperplasia, morphofunctional, sinuses, capsule, infiltration.*

### ABSTRACT

*An analysis was carried out of the pathomorphological changes that developed in the main morphofunctional areas of the lymph nodes in children, 26 patients who died from measles and its complications, in which the morphological data on the pathomorphological changes detected in the lymph nodes during measles and its complications were analyzed, and the features of the changes were indicated.*

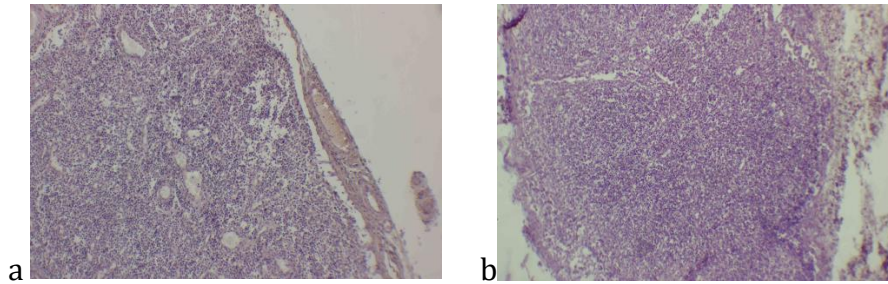
**Severity:** The causative agent of measles is an RNA virus of the Morbillivirus belonging to the family of paramyxoviruses, which has a spherical shape and a diameter of 120-230 nm. The virus consists of a nucleocapsid - the minus strand of RNA, three proteins and an outer shell formed by matrix proteins and two surface glycoproteins: one of them is hemagglutinin, and the other is a "coupling" protein. Most cases of measles are observed in the winter-spring period (December-May), the incidence increases every 2-4 years. The measles virus has a very high negative effect on the immune system, causing the destruction of immune cells: from the first days of the appearance of the rash to the 30th day, a sharp decrease in T-lymphocytes is observed. [1][2]. The measles virus weakens the body's immunity for several years because it causes the death of immune cells that produce antibodies to various infections [3][4][5].

**The goals and objectives of the work:** to study the specificity of the pathomorphological changes that occur in the general morphological macro and microscopic examinations of the tissues of the lymph nodes of patients who died from measles.

**Materials and methods:** the medical history and autopsy data of 26 patients who died from measles in the winter and spring of 2024 and were examined at the Fergana Region Pathologoanatomy Bureau were analyzed. Autopsy pieces from lymph nodes were fixed in formaldehyde solution (prepared in 10% phosphate buffer) for 72 hours and examined by staining with hematoxylin-eosin dye.

**The result:** in the study of biopsies of patients exposed to the rubella virus, the capsule of the lymph node is thickened, swelling in the subcapsular zone, fullness in all blood vessels, the germinal centers of the outer cortex lymph nodes are basophilized, the boundaries with the deep cortex layer are unclear, there are T lymphocytes along with B lymphocytes, monocytes,

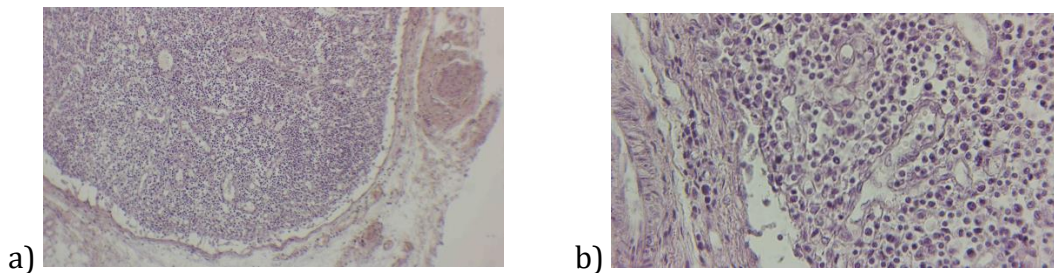
leukocytes are present in all parts. , the presence of inflammatory infiltration consisting of tissue detritus and fibrin threads was determined (Pict. 1).



Picture 1. A micropreparation prepared from the autopsy material of the 4-month-old patient V.V., who died from complications of measles. Stain: hematoxylin-eosin.

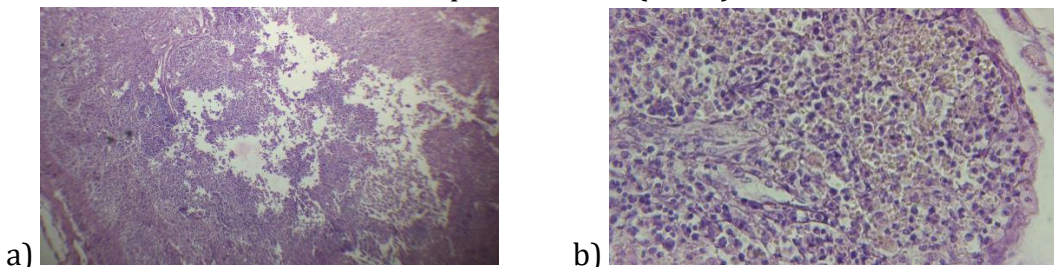
Size: a) 10x10; b) 10x20.

In the next case, the capsule of the lymph node is thickened, there is swelling in the subcapsular zone, the increase of large macrophage cells, uneven filling of the blood vessels, the border of the lymph nodes of the outer cortex is unclear, the germinal centers are poorly expressed, and the presence of lymphocyte proliferation in the trabecular sinuses and corpuscles of the brain (Pic. 2).



Picture 2. A micropreparation prepared from the autopsy material of a 6-month-old patient M.A. who died from complications of measles. Stain: hematoxylin-eosin. Size: a) 10x10; b) 10x40

In another examined micropreparation, the capsule of the lymph node is thickened, the afferent lymph vessels are destructively changed, infiltrated with leukocytes, there is swelling in the subcapsular zone, an increase in large macrophage cells, uneven filling of the blood vessels, there are diffuse focal hemorrhages in the marginal zones of the external cortical lymph nodes, germinal centers. less pronounced, lymphocyte proliferation and focal hemorrhages were present in the trabecular sinuses and corpus callosum (Pic. 3).

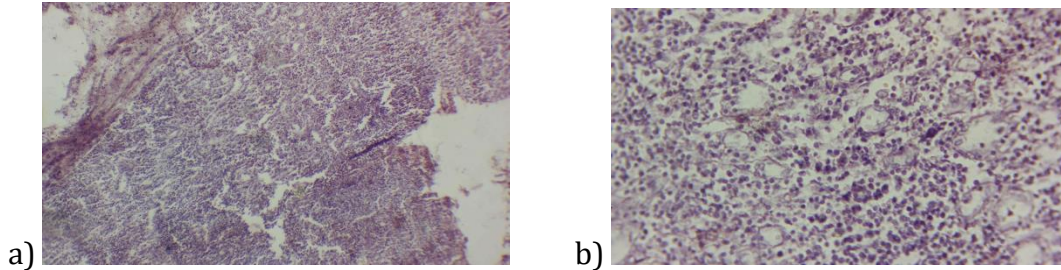


Picture 3. A micropreparation prepared from the autopsy material of Sh.S., a 10-month-old patient who died from complications of measles. Stain: hematoxylin-eosin. Size: a) 10x10; b) 10x40.

In the next case identified during the research, in the micro-preparations of the autopsy material, the capsule of the lymph node was thickened, there was a strongly developed swelling,

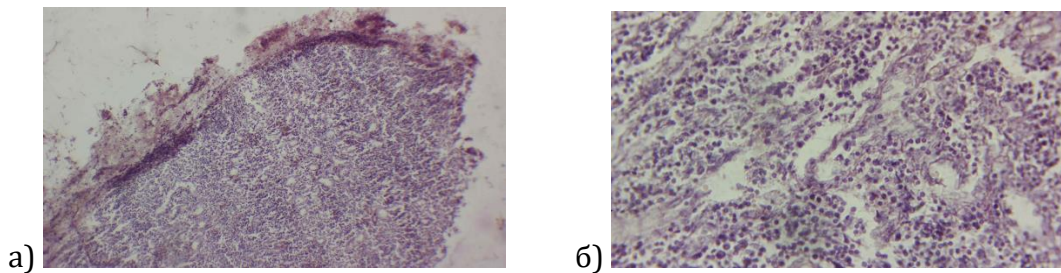


the afferent lymph vessels were destructively changed, infiltration with leukocytes and lymphocytes, swelling in the subcapsular zone, an increase in large macrophage cells, uneven filling of the blood vessels, outer skin the border of marginal and germinal zones of lymph nodes was unclear (Pic. 4).



Picture 4. A micropreparation prepared from the autopsy material of 8-month-old patient M.M., who died from complications of measles. Stain: hematoxylin-eosin. Size.: a) 10x10; b) 10x40.

In another case, the capsule consisting of connective tissue of the lymph node is thickened, swelling in the subcapsular zone, proliferation of large macrophage cells, uneven filling of the blood vessels, proliferation of cells in the marginal and germinal centers of the lymph nodes of the outer cortex, lymphocytes in the trabecular sinuses and brain cells; Proliferation of macrophages and lymphocytes was found in the lymphatic follicles in the wall of the bronchi (Pic. 5).



Picture 5. A micropreparation prepared from the autopsy material of 11-month-old patient K.G., who died from complications of measles. Stain: hematoxylin-eosin. Size: a) 10x10; b) 10x40

**Conclusion:** due to the influence of the measles virus, the capsule of the lymph nodes is thickened, swollen, lost follicles, diffusely necrotic foci, infiltrated with a large amount of leukocytes, lymphocytes and fibrin in the capsule of the node and between the follicular spaces, and acute lymphadenitis is manifested, and in some cases, reactive centers of the lymph node chronic lymphadenitis with hyperplasia, swelling in the capsule and intercellular substance, inflammatory infiltration consisting of many lymphocytes, leukocytes and fibrin in all branches of the lymph node.

## References:

1. Bekenova, G. T. (2022). Study of damage to the cardiovascular system in patients with systemic scleroderma. *Eurasian Scientific Herald*, 13, 19-25.
2. Berdiyeva, D. U., Djurayeva, E. R., Sultonova, M. X., Bekenova, G. T., & Pulatova, S. H. (2023). Evaluation of the effectiveness of target therapy in the treatment of patients with polyangiitis granulomatosis. *湖南大学学报 (自然科学版)*, 50(07).



3. Зияева, Ф. К., Джураева, Э. Р., Ганиева, Н. А., Бекенова, Г. Т., & Арипова, Н. А. (2023). Особенности поражения нервной системы при анкилозирующем спондилоартрите (Doctoral dissertation, Ташкент).
4. Mukhammadieva, S. M., Bekenova, G. T., & Abdieva, Y. A. (2022). Effectiveness of vitamin D in the treatment of bone remodeling in ankylosing spondyloarthritis. *European journal of molecular medicine*, 2(2).
5. Бекенова, Г. Т., Кенжаева, Д. Х., & Абдуллаева, Г. Д. (2016). Оценка эффективности и отдаленных результатов лечения больных ревматоидным артритом. *Вестник Совета молодых учёных и специалистов Челябинской области*, 5(4 (15)), 11-15.
6. Mavlyanov, I. R., Bekenova, G. T., & Mavlyanov, S. I. (2024). Modern Approaches to the Treatment of Rheumatoid Arthritis: Issues of Low Efficacy of Pharmacotherapy from the Point of View of Treatment Adherence. *International Journal of Integrative and Modern Medicine*, 2(6), 120-129.
7. Bekenova, G. T., Axmedova, N. A., Ganiyeva, N. A., Asqarov, N. L., Tolipov, U. U., Alimova, N. Z., & Hasanova Sh, A. (2024). IMPORTANCE OF PULSE-THERAPY IN PERIPHERAL VASCULAR DAMAGE IN SYSTEMIC SCLERODERMA.
8. Отахонова, С. Т. (2018). Педагогларнинг касбий реориентацияси негизда мактабгача таълим муассасаси амалиётчи психологлари касбий қайта тайёрлаш масалалари. *Современное образование (Узбекистан)*, (6), 24-30.
9. Tulkinovna, O. S. PSYCHOLOGICAL ASPECTS OF PROTEST BEHAVIOR OF PRESCHOOL CHILDREN.
10. Тураев, К. Н., & Собирова, Ш. (2023). АХБОРОТЛАШГАН ТАЪЛИМ ТИЗИМИДА ТАЛАБАЛАР МАЪНАВИЯТИНИ РИВОЖЛАНТИРИШ ТЕХНОЛОГИЯСИ. *Journal of new century innovations*, 25(4), 17-20.
11. Rakhmanov, S. R., & Turaev, K. (2023). Development of algorithms for prediction of the technological process. In *E3S Web of Conferences* (Vol. 449, p. 04010). EDP Sciences.
12. Rakhmanov, S., Turaev, K., & Madaliev, D. (2023). Implementation of mathematical models and algorithms in task control of the microalgae cultivation processes. In *E3S Web of Conferences* (Vol. 377, p. 03010). EDP Sciences.
13. Nortojoyevich, T. Q. (2023, September). TALABALAR MA'NAVIYATINI RIVOJLANTIRISHDA AXBOROT TA'LIM MUHITIDAN FOYDALANISH METODIKASINI TAKOMILLASHTIRISH. In *Proceedings of International Educators Conference* (Vol. 2, No. 9, pp. 68-72).
14. Nortojoyevich, T. Q. (2023, September). TALABALAR MA'NAVIYATINI RIVOJLANTIRISHDA AXBOROT TA'LIM MUHITIDAN FOYDALANISH METODIKASINI TAKOMILLASHTIRISH. In *Proceedings of International Educators Conference* (Vol. 2, No. 9, pp. 68-72).
15. Djumanioyozovna, S. R. (2023). XI ASR ADABIYOTIDA QOLLANILGAN XALQ OGZAKI IJODI NAMUNALARI. *Journal of Integrated Education and Research*, 2(11), 91-96.
16. Raximova, S. (2023, May). BADIY MATNLARDA FE'L SO 'Z TURKUMIGA DOIR FRAZEOLOGIK BIRLIKLAR POLISEMIYASI. In «УЗБЕКСКИЕ НАЦИОНАЛЬНЫЕ ОБРАЗОВАТЕЛЬНЫЕ ЗДАНИЯ ТЕОРЕТИЧЕСКОЕ И ПРАКТИЧЕСКОЕ СОЗДАНИЕ ВОПРОСЫ» Международная научно-практическая конференция (Vol. 2, No. 2).



17. Рахимова, С. Ж. (2022, August). ФРАЗЕОЛОГИК БИРЛИКЛАРНИНГ ШАКЛЛАНИШИДА МЕТАФОРЛАРНИНГ ҲИССАСИ. In E Conference Zone (pp. 123-127).
18. Rakhimova, S. J. (2021). Problems of lexicographic interpretation of phraseological polysemis of Uzbek language. ACADEMICIA: An International Multidisciplinary Research Journal, 11(9), 127-132.
19. Хужаев, И. К., Юлдашев, Б. Э., & Куканова, М. А. (2012). Гидравлический расчёт кольцевого газопровода при наличии участка с равномерным путевым отбором газа. Наука Красноярья, (3), 39-47.
20. Хужаев, И. К., Юлдашев, Б. Э., & Куканова, М. А. (2011). Эффективность кольцевой структуры газопровода и алгоритм расчета ее гидродинамических показателей. Вопросы вычислительной и прикладной математики. Аналитические методы и вычислительные алгоритмы решения задач математической физики. Ташкент, (126), 132.
21. Равшанов, Н., Юлдашев, Б. Э., & Курбонов, Н. М. (2015). Компьютерное моделирование процессов добычи и транспортировки нефти и газа. Ташкент: Тафаккур.
22. Садуллаев, Р., & Юлдашев, Б. Э. (2005). Построение алгоритма трассировки и информационного обеспечения трубопроводных систем. Алгоритмы, методы и системы обработки данных, (10), 110-118.
23. Шералиев, С. С., Турсунметов, К. А., & Юлдашев, Б. Э. (2016). Электронный учебный комплекс «Виртуальные работы по механическим колебаниям и волнам». Патент Республики Узбекистан. № DGU, 3628.
24. Юлдашев, Б. Э., & Юлдашева, Н. Т. (2009). Повышение эффективности логопедического воздействия на детей путем специального включения компьютерных программ.
25. Юлдашев, Б. Э., Юлдашева, Н. Т., & Каршиев, Д. А. (2020). Профилактика и преодоление нарушений устной речи у детей с применением информационных технологий. Новый день в медицине, (1), 465-470.
26. Равшанов, Н., Каршиев, Д. А., & Юлдашев, Б. Э. (2018). Моделирование процесса переноса и диффузии мелкодисперсных частиц в атмосфере с учетом эрозии почвы. Международный журнал гуманитарных и естественных наук, (4), 140-152.
27. Aminova, K. M. (2019). Internet Media Is A Tool For Promoting Tolerance In Multimedia Societies. International Journal of Scientific Research And Education, 7(4), 8172-8177.
28. qizi AMINOVA, D. K. INTERNET JOURNALISM OF CHINA AND PROBLEMS OF NATIONAL SELF-CONSCIOUSNESS.
29. қизи АМИНОВА, Д. Х. ҒАРБ ВА ШАРҚ МАДАНИЯТЛАРИНИНГ ТАҲЛИЛИ.
30. АМИНОВА, Д. ИНТЕРНЕТ ЖУРНАЛИСТИКАСИ ИЛМИЙ ҚАРАШЛАРИНИНГ ТАРАҚҚИЁТ ТЕНДЕНЦИЯЛАРИ.
31. Qizi, A. D. K., & Muxammedjanovna, Y. M. (2020). Increasing the role and position of internet media in activation of intercultural communication. International Journal of Scientific and Technology Research, 9(1), 1749-1757.
32. Yunusova, S. M. (2021). Paraphrases related to the language of advertising. International Journal of Linguistics, Literature and Culture, 7(4), 236-240.



33. Yunusova, S. M., & Abdusattorova, K. H. (2024, June). NAVRUZ IN THE TEXT OF MODERN UZBEK ADVERTISING. In INTERNATIONAL CONFERENCE ON MODERN DEVELOPMENT OF PEDAGOGY AND LINGUISTICS (Vol. 1, No. 6, pp. 42-47).
34. Юнусова, Ш. (2024). Non-linguistic means used in advertising texts. Зарубежная лингвистика и лингводидактика, 2(1/S), 490-496.
35. Юнусова, Ш. (2024). Парафразы в языке рекламы. Зарубежная лингвистика и лингводидактика, 2(3), 291-295.
36. Юнусова, Ш. (2024, March). ҚАЗАҚ ТІЛІДІ ЖАРНАМА МӘТІНІНІҢ ЛИНГВИСТИКАЛЫҚ СИПАТЫ. In Konferensiyalar| Conferences (Vol. 1, No. 7, pp. 56-58).
37. Mukhamedumarovna, Y. S. (2023, May). FUNCTIONS OF NON-LINGUISTIC MEANS IN ADVERTISING TEXTS. In INTERNATIONAL SCIENTIFIC CONFERENCES WITH HIGHER EDUCATIONAL INSTITUTIONS (Vol. 3, No. 08.05, pp. 235-238).
38. Shaxnoza, Y. (2023). TURKIY TILLAR REKLAMA MATNLARINING LINGVISTIK TADQIQI (Qozoq tilidagi reklama matnlari misolida). Barqaror Taraqqiyot va Rivojlanish Tamoyillari, 1(1), 23-26.
39. Yunusova, S. (2015). ON ADVERTISEMENT LEXIS. SLOGAN BASED RESEARCH. Theoretical & Applied Science, (3), 69-71.
40. Narkulovna, D. R. N. (2024). BOSHLANGICH SINFLARGA TABIIY FANLARNI OQITISHDA EKOLOGIK TUSHUNCHALARNI SHAKLLANTIRISHNING AHAMIYATI. worldly knowledge conferens, 7(1), 95-98.
41. Джураева, Н. Н. (2023). БОШЛАНҒИЧ СИНФ ЎҚУВЧИЛАРИНИ ТАБИИЙ (SCIENCE) ФАНЛАРДАН КЎНИКМАЛАРИНИ ШАКЛЛАНТИРИШДА ВИРТУАЛ ТАЪЛИМ ТЕХНОЛОГИЯЛАРИДАН ФОЙДАЛАНИШ. ILM FAN TARAQQIYOTIDA ZAMONAVIY METODLARNING QO'LLANILISHI, 3(6), 134-139.
42. Косимов, М. О., & Аскарлов, А. М. (2024). Пути Улучшения Производства Буровзрывных Работ На Месторождении «Кальмакыр». International Journal of Formal Education, 3(5), 299-304.
43. Бердиева, Д. Х. (2022). РАСЧЕТ НАГРУЗКИ НА ЗАКЛАДКУ В УСЛОВИЯХ МЕСТОРОЖДЕНИИ КАУЛЬДЫ. Oriental renaissance: Innovative, educational, natural and social sciences, 2(6), 792-802.