International Journal of Scientific Pediatrics published: 30 June 2024
doi.org/10.56121/2181-2926-2024-3-6-648-653

Article / Original paper

MACRO- MICROSCOPIC CHANGES IN INTERNAL ORGANS AND PATHOMORPHOLOGICAL FEATURES OF LYMPH NODES IN MEASLES

D.S.Turdimatov[1] **I.H.Xolmatov**[2]

1. Fergana Medical Institute of Public Health, Fergana, Uzbekistan.
2. Fergana Regional Pathological Bureau, Fergana, Uzbekistan.

Abstract.

Pathomorphological changes in the main morphofunctional areas of lymph nodes of children who died from measles and its complications were analyzed, in which the morphological data of changes in measles and its complicated forms showed the specificity of changes in the immune system during measles and its complications. The goals and objectives of the work: to study the specifics of the general morphological changes in the internal organs of patients who died from measles and the pathomorphological changes that occur in macro- and microscopic examinations of lymph node tissues. Materials and methods: the medical history and autopsy data of patients who died of measles in the winter and spring of 2024 and were examined at the Fergana Regional Pathology and Anatomy Bureau were analyzed. At the beginning of 2024, 10,453 sick children were registered in the first 3 months, most of them were children under one year old, and the rest were children aged 2-5 years. Autopsy sections taken from the internal organs and lymph nodes of a child who died during the study were fixed in a formaldehyde solution (prepared in 10% phosphate buffer) for 72 hours and examined by staining with hematoxylin-eosin dye. Results and Conclusions: in children with measles, pneumonia with a focus in the lungs, interstitial pyelonephritis in the kidney, diffuse and focal hemorrhages in the spleen, dystrophic changes in the liver, acute destructive changes in the heart, thickening of the lymph nodes, edema, reduced follicles, diffuse necrotic foci, nodal capsule and follicular spaces. it was found that it was infiltrated with a large amount of leukocytes, lymphocytes and fibrin.

Key words: virus, measles, lymph nodes, hyperplasia, infiltration.

OPEN ACCESS
IJSP

Correspondence
Turdimatov Doniyor Saidovich
Fergana Medical Institute of Public Health, Fergana, Uzbekistan.

e-mail: donisaidovich@gmail.com

Received: 11 June 2024
Revised: 18 June 2024
Accepted: 24 June 2024
Published: 31 June 2024

Funding source for publication: Andijan state medical institute and I-EDU GROUP LLC.

Publisher's Note: IJSP stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Copyright: © 2022 by the authors. Licensee IJSP, Andijan, Uzbekistan. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY-NC-ND) license (https://creativecommons.org/licenses/by-nc-nd/4.0/).

Dolzarbligi: Qizamiqning qo'zg'atuvchisi paramiksoviruslar oilasiga mansub Morbilli virusning RNK virusi bo'lib, sharsimon shaklga ega, diametri 120-230 nm. Virus nukleokapsiddan iborat - RNKning minus zanjiri, uchta oqsil va matritsa oqsili va ikkita sirt glikoproteinlari tomonidan hosil bo'lgan tashqi qobiq: ulardan biri gemagglyutinin, ikkinchisi esa «birikma» oqsilidir. Qizamiq bilan kasallanishning aksariyat holatlari qish-bahor davrida (dekabr-may) kuzatiladi, har 2-4 yilda kasallanish ko'payadi. Qizamiq virusi immun tizimga juda ham yuqori darajada salbiy ta'sir ko'rsatib, immun hujayralarni yo'q qilinishiga olib keladi: toshma paydo bo'lishining birinchi kunlaridan 30-kungacha T-limfositlarning keskin pasayishi kuzatiladi [1,2, 3, 4]. Qizamiq virusi aksariyat bir yoshgacha bo'lgan bolalarda uchrashi va ularda kasallik og'ir asoratlar bilan kechishi kuzatilgan bo'lib, ular organizmida keyinchalik ham turli infektsiyalarga antitelo ishlab chiqaradigan immun hujayralarini nobud bo'lishiga sababchi bo'lganligi uchun bir necha yillar davomida organizmning immunitetini zaiflashganligi aniqlangan [5, 6, 7, 8, 9, 10].

Ishning maqsad va vazifalari: Qizamiqdan vafot etgan bemorlarning ichki a'zolari umumiy morfologik o'zgarishlari va limfa tuguni to'qimalarida makro- va mikroskopik tekshiruvlarda yuzaga keladigan patomorfologik o'zgarishlarni o'ziga xosligini o'rganish.

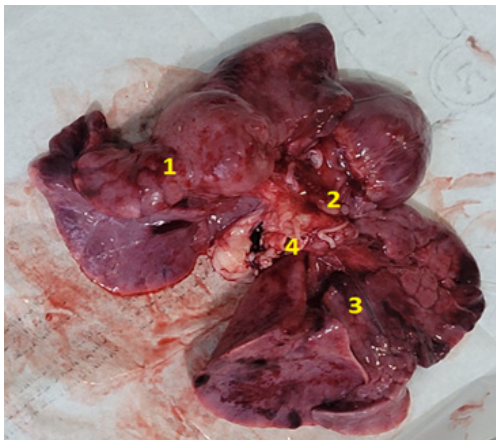
Materiallar va uslublar: 2024 yil qish va bahor oylarida qizamiqdan vafot etgan va Farg'ona viloyat patologoanatomiya byurosida tekshirilgan bemorlarning kasallik tarixi va austopsiya tekshiruvi ma'lumotlari tahlil qilingan. 2024 yil boshida dastlabki 3 oylikda 10453та bemor bola qayd qilingan, ularning aksariyati bir yoshgacha bolalar bo'lib, qolgan qismi 2-5 yoshli bolalar bo'lgan.

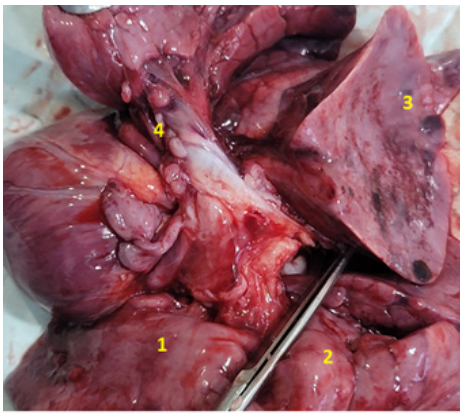
Tadqiqot davomida vafot etgan bemor bolalar murdasi ichki a'zolari va limfa tugunlardan olingan autopsiya bo'laklari formaldegid eritmasida (10% fosfat buferida tayyorlangan) 72 soat davomida fiksatsiyalangan va gematoksillin – eozin bo'yog'ida bo'yash orqali tekshirilgan.

Tadqiqot natijalari: vafot etgan bemorlarning autopsiya materiallarini o'rganishda qizamiq virusi ta'sirida ichki a'zolarda quyidagicha umumiy holatdagi patomorfologik o'zgarishlar aniqlandi:

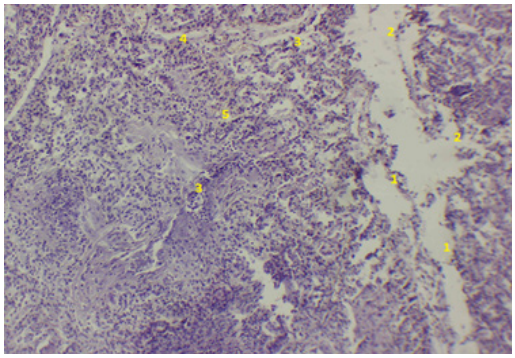
Qizamiq asoratlaridan vafot etgan 8 oylik bemor M.M.ning autopsiya materialidan

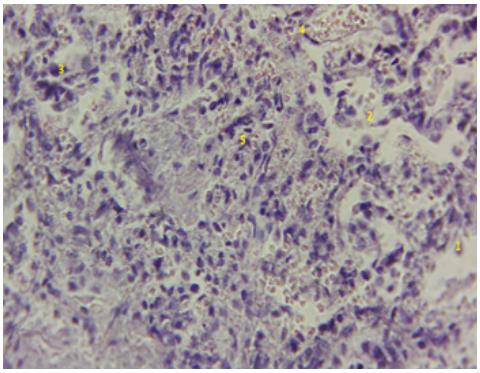
tayyorlangan makro- va mikropreparatlar.



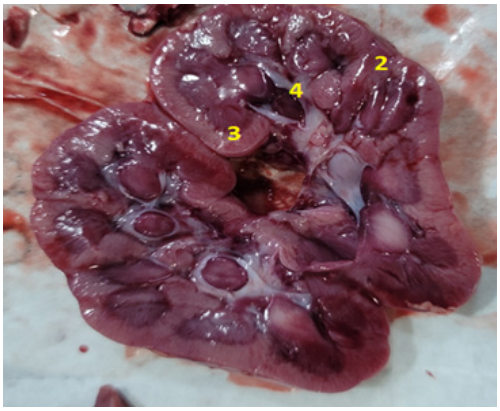


Rasm - 1A. O'pka: Makroskopik jihatdan kattalashgan bo'lib, tashqi tomondan yuzasi silliq (1), oldingi tomondan bortgan holatda (2). Ikkala o'pkaning aksariyat qism bo'laklari to'q – qo'ng'ir rangda ola-bula ko'rinishda bo'lib (3), to'qimasi shishgan xolatda. Kesimida bronxlari bo'rtgan, atrof to'qimada o'choqli qon quylishlar va yallig'lanish infiltrate aniqlangan, paratraxel limfa tugunlari kattalashgan (4).

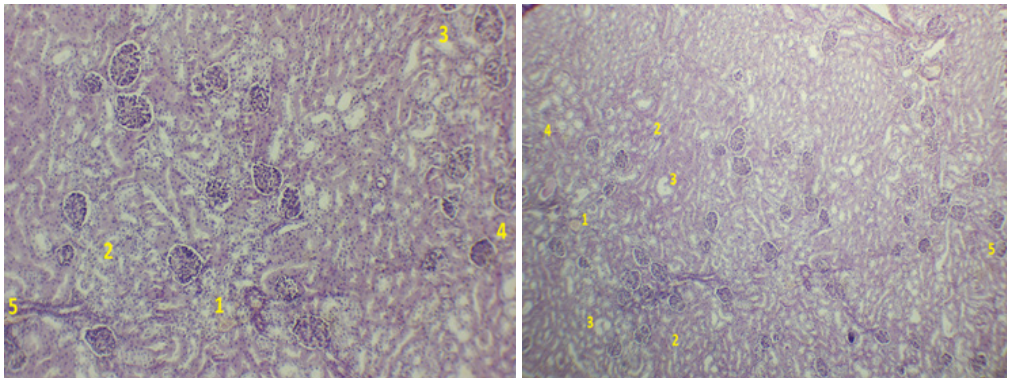




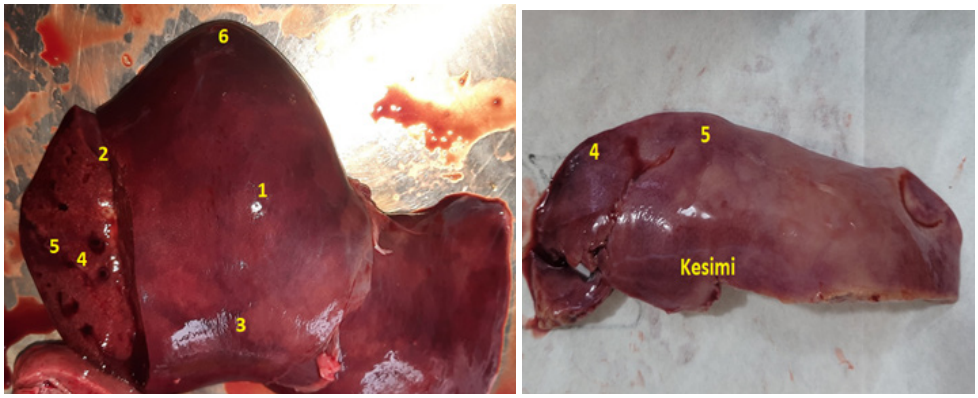
Rasm-1B. Mikro: bir qism alveolalarning kengayishi (1), qolgan ko'plab alveolyar to'siqlarning uzilishi (2), bronxlar atrofidagi ba'zi bir alveolalarda makrofaglar(3), leykotsitlar va alveolyar epiteliydan tashkil topgan ekssudat bilan to'lganligi, barcha qon tomirlarda notekis to'laqonlik(4), diffuz xolda perivaskulyar va diapedez qon quyilishlar (5); Bo'yoq: gematoksillin-eozin. Kat.: a)10x10; b) 10x40.



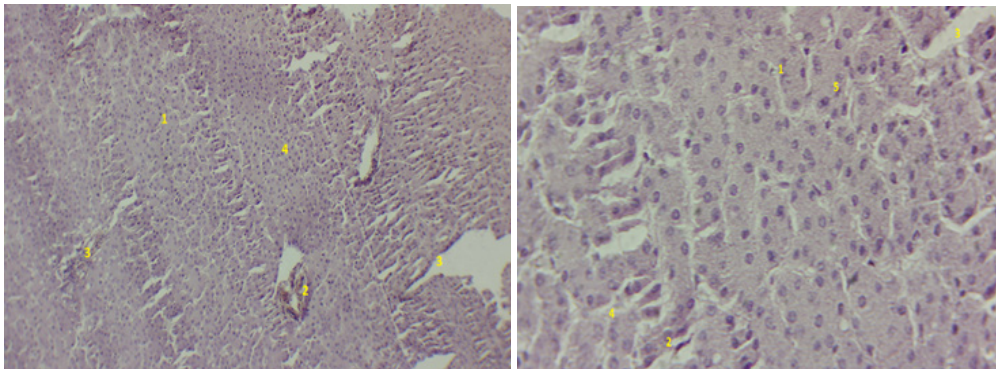
Rasm - 2A. Buyrak: tashqi ko'rinishi loviyasimon shaklda bo'lib o'lchamlari biroz kattalashgan (1). Kesib ko'rilganda kesuv yuzasida nuqtasimon qon quyilishlar bor (2). Kapsulasi oson ajralgan. Mag'iz va po'stloq moddalari chegarasi aniq(3). Buyrak bo'lakli tuzilishda bo'lib xajmi kattalashganligi, asosan jomlari kengayishi xolati aniqlangan(4).



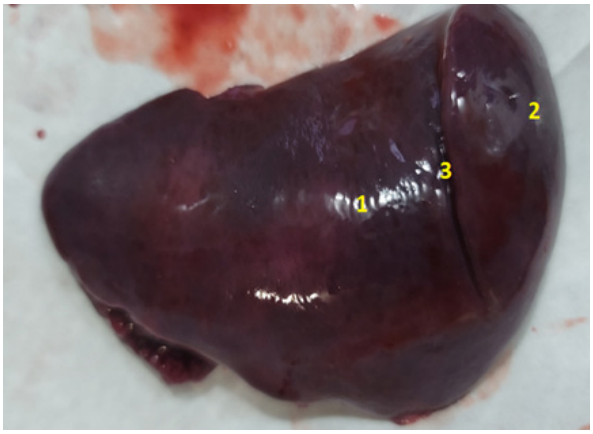
Rasm - 2B. Buyraklar: po'stloq qavati, buyrak koptokchalari arteriolalari va kapillyarlari to'laqonli (1), buyrak koptokchalari, burama va to'g'ri kanalchalar hujayralari donador distrofiyasi (2), ba'zi kanalchalarning kistoz kengayishi (3), eritrotsitlardan iborat o'tkir diffuz qon quyilishlar mavjud (4). Mag'iz qavatida o'choqli perivaskulyar qon quyilishlar bo'lgan (5). Bo'yoq: gematoksillin-eozin. Kat.: a)10x10; b) 10x30.



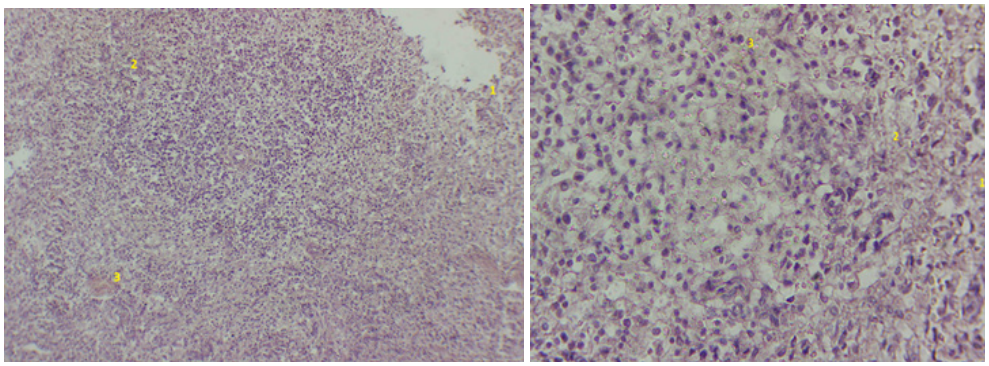
Rasm - 3A. Jigar: xajmi kattalashgan (1), to'qimasi shishgan (2), tashqi tmondan yuzasi silliq (3), to'q tusga kirgan bo'lib (4), kesib ko'rilganda kesuv yuzasidan qonsimon suyuqlik ajraladi (5), qirg'oqlari yumaloqlashgan (6).



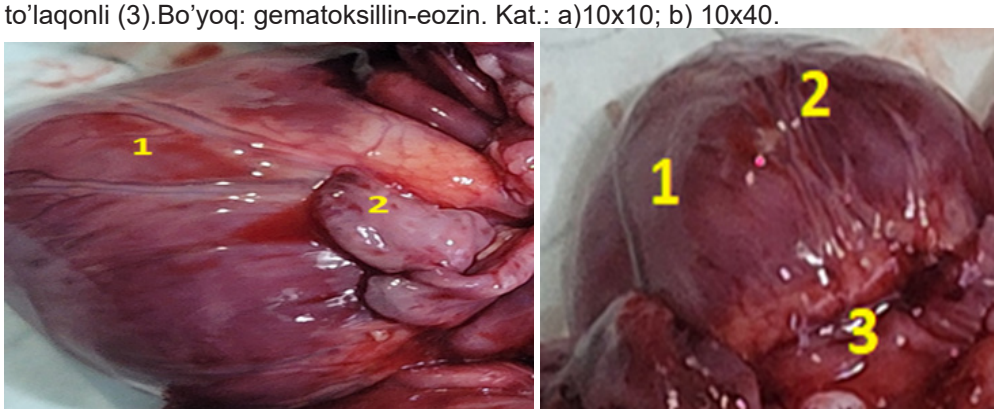
Rasm - 3B. Jigar mikroskopik: kapsulasi o'zgargan, bo'lakchali tuzilishi aniq (1), qon tomirlari to'laqonli (2), sinuslar kengaygan (3), mayda o'choqli perivaskulyar qon quyilishlar(4), gepatotsitlarni donador distrofiyasi (5);Bo'yoq: gematoksillin-eozin. Kat.: a)10x10; b) 10x40.



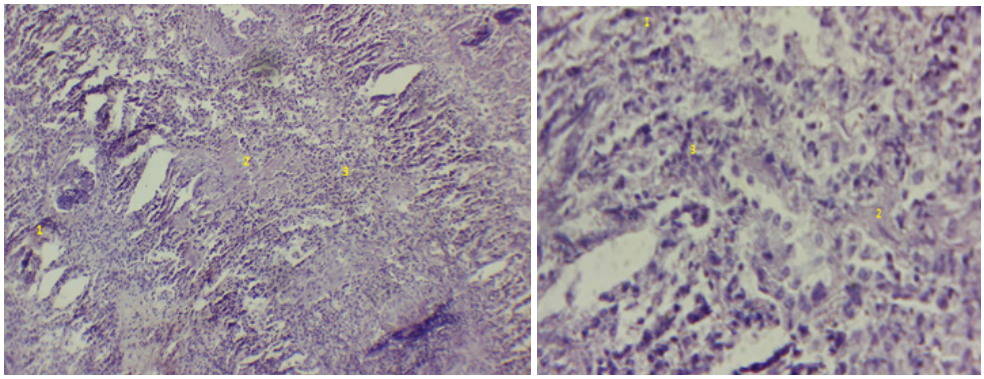
Rasm - 4A. Taloq: hajmi kattalashgan (1), yuzasi silliq (2). Kesib ko'rilganida kesuv yuzasidan qonsimon suyuqlik ajraladi. Qirindi manfiy, kesuv yuzasi to'q gilos rangda (3).



Rasm - 4B. Taloq: kapsulasi yupqa, trabekulyar apparati qisqargan xolatda (1), barcha qismlarida eritrotsitlardan iborat diffuz o'choqli qon quyilishlar (2), tomirlari to'laqonli (3).Bo'yoq: gematoksillin-eozin. Kat.: a)10x10; b) 10x40.



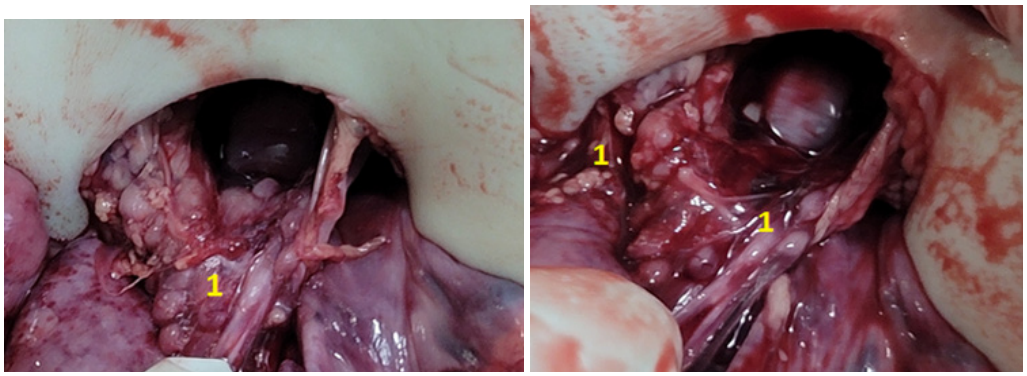
Rasm - 5A. Yurak: kattalashgan devorlari o'zgargan (1). Qorinchalar devorlari qalinlashgan va dag'allashgan, epikard tomondan mayda o'choqli qon quyilishlar bo'lib (2), yurak kameralari bo'shlig'ida biroz miqdorda to'q-qizilrangli qon suyuqligi bor (3).



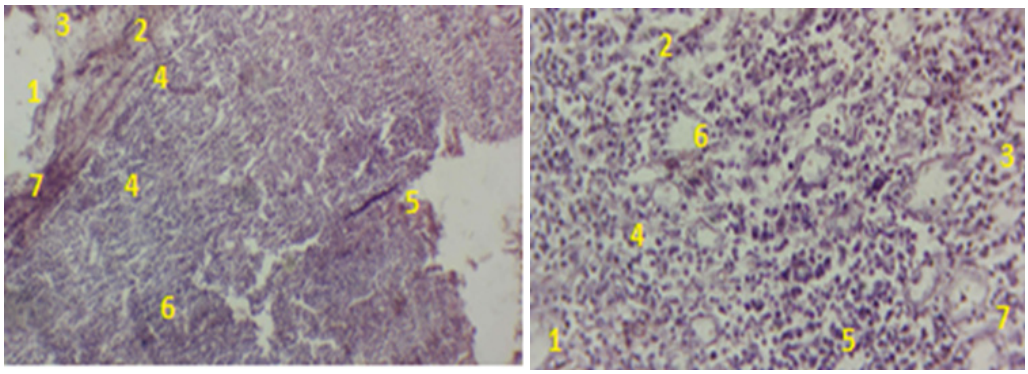
Rasm - 5B. Yurak: epikard va endokard qavatlari ostida diapedez qon quyilishlar (1), mushak tolalarining gipertrofiyasi va kontraktur degeneratsiyasi (2), qon tomirlarining to'laqonligi va yallig'lanish infilrati mavjud (3). Bo'yoq: gematoksillin - eozin. Kat.: a)10x1`0;

b) 10x40.

Yuqoridagi ichki a'zolardagi o'zgarichlarga monand ravishda limfa tugunlarida quyidagicha patomorfologik holatlar aniqlandi.



Rasm - 6A.Paratraxeal limfa tugunlari xajmi turli xil darajada kattalashib cho'zinchoq shaklga kirgan bo'lib, oqimtir tusda ko'zga tashlanadi (1).



Rasm - 6B . Limfatuguni kapsulasi qalinlashgan (1), unda kuchli rivojlangan shish (2), olib keluvchi afferent limfa yo'llari destruktiv o'zgargan (3), leykotsitlar va limfotsitlar bilan infiltratsiyalangan (4), subkapsulyar zonada shish, yirik makrofag hujayralarning ko'payishi (5), qon tomirlarda notekis to'laqonlik (6), tashqi po'stloq limfatik tugunchalarining marginal va germinativ zonalari chegarasi noaniq bo'lgan (7). Bo'yoq: gematoksillin - eozin. Kat.: a)10x10; b) 10x40.

Xulosa: bolalarda qizamiq kasalligida o'pkasida o'choqli pnevmoniya, buyrakda interstitsial pielonefrit, taloqda diffuz va o'choqli qon quyilishlar, jigarda distrofik o'zgarishlar, yurakda o'tkir destruktiv o'zgarish, limfa tugunlarida qalinlashish, shish, follikulalar kamayishi, diffuz xolda nekroz o'choqlari, tugun kapsulasida va follikulyar bo'shliqlar orasida ko'p miqdorda leykotsitlar, limfotsitlar va fibrin bilan infiltratsiyalanganligi aniqlandi.

LIST OF REFERENCE

[1] Measles: epidemiological features during the elimination period, modern possibilities of prevention, diagnosis and treatment. The importance of serological testing of population immunity. Methodical recommendations. Moscow, 2020. - P. 20-30.

[2] Eremushkina Ya. M., Vdovina E. T., Kotiv S. I., Kuskova T. K. Algorithm for diagnosing measles in a complex epidemic situation. Analysis of clinical data. // Infectious diseases. 2015. No. 4. P. 76-82.

[3] Mamaeva T. A., Zheleznova N. V., Naumova M. A. et al. Algorithm for laboratory confirmation and differential diagnosis of measles infection during the measles elimination period in the Russian Federation // Infection and immunity. 2015. No. 1. P. 55-62.Mina M. J., Kula T., Leng Y., Li M., de Vries R. D., Knip M., Siljander H., Rewers M., Choy D. F., Wilson M. S., Larman H. B., Nelson A. N., Griffin D. E., de Swart R. L., Elledge S. J. Measles virus infection diminishes preexisting antibodies that offer protection from other pathogens. (англ.) // Science (New York, N.Y.). — 2019. — 1 November (vol. 366, no. 6465). — P. 599—606. — doi:10.1126/science.aay6485. — PMID 31672891.

[4] Petrova V. N., Sawatsky B., Han A. X., Laksono B. M., Walz L., Parker E., Pieper K., Anderson C. A., de Vries R. D., Lanzavecchia A., Kellam P., von Messling V., de Swart R. L., Russell C. A. Incomplete genetic reconstitution of B cell pools contributes to prolonged immunosuppression after measles. (англ.) // Science Immunology. — 2019.

— 1 November (vol. 4, no. 41). — doi:10.1126/sciimmunol.aay6125. — PMID 31672862.

[5] Mina M. J., Metcalf C. J., de Swart R. L., Osterhaus A. D., Grenfell B. T. Long-term measles-induced immunomodulation increases overall childhood infectious disease mortality. (англ.) // Science (New York, N.Y.). — 2015. — 8 May (vol. 348, no. 6235). — P. 694—699. — doi:10.1126/science.aaa3662. — PMID 25954009

[6] Yarmukhamedova N. A. et al. Functional changes in the cardiovascular system in patients with chronic forms of brucellosis.» //Achievements of science and education. – 2020. – №. 4. – С. 58.

[7] Tirkashev O. S. et al. Measles at the present stage //web of scientist: international scientific research journal. – 2022. – т. 3. – №. 5. – с. 177-185.

[8] Saidov H.Sh., Tirkashev O.S. Study of the effect of measles vaccination on the epidemic process of the disease//Web of Scientist: International Scientific Research Journal. Vol 4 No.1 (2023): vos. C.560-565.

[9] O'rolov J.B., Tirkashev O. S. Characteristics of the clinical course of salmonellosis disease in children of early age//Web of Scientist: International Scientific Research Journal. Vol 4 No.1 (2023): vos. C.573-577.

[10] Ne'matov H.A., Tirkashev O. S. Specific clinical and epidemiological features of scarlet fever//Web of Scientist: International Scientific Research Journal. Vol 4 No.1 (2023): vos. C.578-584