ISSN 2181-3187

MRI DIAGNOSIS OF STOMACH CANCER

Umarkulov Zabur Zafarjonovich, Bekniyozov Rustam Abdimurod ugli, Yuldashev Nasim Xoshimovich
Department of Medical Radiology, Samarkand State Medical University, Samarkand, Uzbekistan

Currently, stomach cancer (SC) in Uzbekistan ranks 2nd in men and 3rd in women among all malignant neoplasms in terms of frequency. Most often, SC affects patients aged 50-70 years. Despite the fact that in the last 20 years there has been a certain tendency to decrease the incidence of RV, the total number of patients and mortality from this disease remain high, and the possibility of early detection of a tumor has not been fully realized. Therefore, the problem of improving the methods of diagnosis and treatment of this disease remains relevant. Along with the already common methods of medical imaging, such as X-ray, FGDS, ultrasound and CT, MRI has recently been increasingly used for stomach diseases (while at the second stage of the diagnostic algorithm). The main task of MRI is, first of all, to assess the degree of changes in the stomach wall, staging the pathological process with the detection of both local and distant metastases

The advantages of MRI Advantages of MRI over other methods of imaging in the diagnosis of stomach cancer are: high visibility; non-invasive; the lack of ionizing radiation; the ability to image in any plane and any sections; high tissue contrast; absence of artifacts from gases and bone structures; the possibility of using additional software (europacollege, DWI, ultra-fast sequence).

The methodology of the study of the stomach includes two stages with preliminary preparation. Preparation of the patient for the study: the day before the study, exclude food rich in fiber, take Fortrans, drink two No-shpy tablets in the evening, a cleansing enema. In the morning, the study is carried out on an empty stomach with the intake of two "No-shpy" tablets 20 minutes before the procedure. The first stage is carried out on an empty stomach using standard programs in the coronal, axial and sagittal planes weighted by T2, T1 with fat suppression. At this stage, the condition of the abdominal cavity and retroperitoneal space, the diaphragm, regional lymph nodes, the shape and location of the stomach, perigastric fiber and abdominal esophagus are evaluated. The second stage is carried out with a full stomach. As a filler, ordinary water at a temperature of 36-37 ° C is used in an amount of 3-4 glasses of 150 ml (450-600 ml). The position of the stomach axes is evaluated again, and the slices are placed strictly along the axes using T2VI. When a suspicious section of the stomach wall is found, sections up to 3 mm thick are installed parallel and perpendicular to the pathological zone, which allows you to determine the extent of the lesion of the wall,

ISSN 2181-3187

its thickness, the depth of the lesion, the presence of ulceration and violation of the integrity of the serous layer. In addition to T2VI, T1 TRUFI and DWI programs are used. Due to the fact that it is often not possible to reliably visualize all the layers of the stomach wall, the criteria for its defeat are the degree of thickening and the extent of changes. With the defeat of all layers and the spread of the process beyond serosis, the main MR signs should be considered the fuzziness and blurring of the outer contour of the stomach wall, a decrease in the signal from the perihastric fatty tissue.

Fig. 1. Local thickening of the walls of the stomach with infiltrative changes of the small omentum (black arrows); enlarged lymph nodes of the paraaortic group (blue arrow).

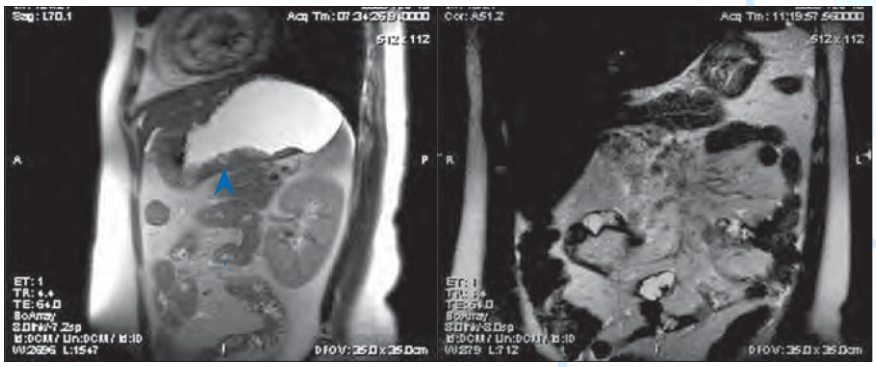
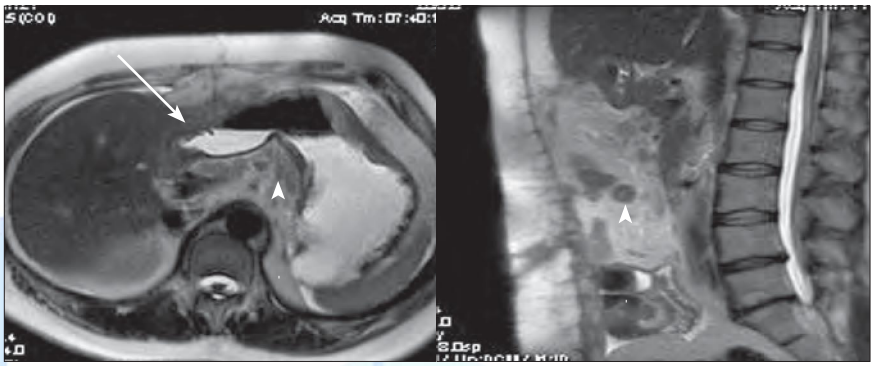


Fig. 2. Thickening of the stomach wall and enlarged mesenteric lymph nodes

In modern radiation diagnostics, MRI is used to determine the stage by N and M stages, using the TNM classification. We use the classification of the Japanese Association for Stomach Cancer in our work. The JGCA (1998) classification is based on the anatomical principle. In contrast to the principles of the JGCA, the classification of the UICC (International Cancer Union 2002) considers only the quantitative lesion of regional lymph nodes, regardless of their localization. The depth of the tumor lesion The depth of the tumor invasion is recorded using the T-classification. The anatomical level of invasion of the stomach wall is indicated as follows: T1: the tumor affects the mucous layer and / or submucosal layers. T2: the tumor affects the actual mucous or subserous layer. T3: the tumor penetrates the serous layer. T4: The tumor invades the surrounding tissues.

ISSN 2181-3187



3. Total defeat of the stomach wall with metastatic changes of lymph nodes, peritoneum of the anterior abdominal wall and the left lobe of the liver type IV.

Metastatic lesion of lymph nodes, liver and peritoneum – N, H and P. The main signs of damage to the walls of the stomach are: thickening of the wall more than 5 mm, roughness and lumpiness of the contours, a change in the MR signal from the formation, spreading beyond the wall. Post-contrast tomograms After administration of the contrast agent "Magnevist", an uneven increase in the intensity of the signal from the formation of the stomach by peripheral type is determined. The lesion of not only the abdominal esophagus, but also the distal third of its thoracic part with signs of stenosis is visualized.

Conclusions: MR examination in various planes with DWI allows to obtain additional information about the degree of infiltrative damage to the stomach wall, regional lymphatic collectors, to detect, including distant metastases. MRI has a high diagnostic value and correlation with pathomorphological data, which makes this study, in combination with the use of other imaging methods, highly informative at the preoperative stage, which helps to more correctly select patients for surgical or combined treatment.

Literature

1. Abdurakhmanovich , K. O., & Javlanovich , Y. D. (2022). Magnetic Resonance Tomography for Damage to the Ligamentous Structures of the Knee Joint. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(2), 27-34. Retrieved from https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/617
2. Abdurakhmanovich , K. O., & Servetovna , A. A. (2022). Guidelines for Ultrasound Examination in Gynecological Diseases. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(2), 22-26. Retrieved from https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/616
3. Abdurakhmanovich, K. O., & ugli, G. S. O. (2022). Ultrasonic Diagnosis Methods for Choledocholithiasis. Central Asian Journal Of Medical And Natural Sciences, 3(2), 43-47.
4. Abdurakhmanovich, K. O., & ugli, G. S. O. (2022). Ultrasound Diagnosis of the Norm and Diseases of the Cervix. *CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES*, *3*(2), 58-63.

5. Abdurakhmanovich, Khamidov Obid, Akhmedov Yakub Amandullaevich, Ataeva Saodat Khurshedovna, Ametova Alie Servetovna, and Karshiev Behruz Orif ugli. 2021. “Role of Kidney Ultrasound in the Choice of Tactics for Treatment of Acute Renal Failure”. *CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES* 2 (4), 132-34. https://doi.org/10.47494/cajmns.v2i4.263.
6. Akhmedov Y.A., Rustamov U.Kh., Shodieva N.E., Alieva U.Z., Bobomurodov B.M. Modern Application of Computer Tomography in Urology. Central Asian journal of medical end natural sciences, volume 2 issue 4 Jul-Aug 2021 P.121-125
7. Alimdjanovich, R.J., Obid , K., Javlanovich, Y.D. and ugli, G.S.O. 2022. Advantages of Ultrasound Diagnosis of Pulmonary Pathology in COVID-19 Compared to Computed Tomography. Central Asian Journal of Medical and Natural Science. 3, 5 (Oct. 2022), 531-546.
8. Amandullaevich AY, Danabaevich JK. Ultrasound Diagnosis of Hirschsprung’s Disease in Children. CAJMNS [Internet]. 2022Mar.3 [cited 2022May24];3(2):64-1. Available from: https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/623
9. Amandullaevich AY, Zafarjonovich UZ. Possibilities of MRI Diagnostics of Focal Liver Defeats. CAJMNS [Internet]. 2022Mar.3 [cited 2022May24];3(2):35-2. Available from: https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/618
10. Amandullaevich, Akhmedov Yakub, Rustamov Umar Khaidarovich, Shodieva Nodira Egamberdievna, Alieva Umida Zairovna, and Bobomurodov Bektosh Mamadiyorovich. 2021. “Modern Application of Computer Tomography in Urology”. *CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES* 2 (4), 121-25. https://doi.org/10.47494/cajmns.v2i4.261.
11. Ametova Alie Servetovna, Saitkulova Shahribonu Rakhmatillevna, Khaidarova Aziza Anvarovna. Early Rheumatoid Arthritis: Possibilities Of Mri Diagnosis. TJMS [Internet]. 2022 Feb. 24 [cited 2022 May 24];5:260-6. Available from: https://zienjournals.com/index.php/tjm/article/view/879
12. Ataeva S.Kh., Ravshanov Z.Kh., Ametova A.S., Yakubov D.Zh. Radiation visualization of chronic joint diseases. Central Asian journal of medical end natural sciences, volume 2 issue 2 March-aprel 2021 P.12-17
13. Ataeva Saodat Khurshedovna, Ravshanov Zafar Khazratkulovich, Ametova Alie Servetovna, and Yakubov Doniyor Zhavlanvich. 2021. “Radiation Visualization of Chronic Joint Diseases”. *CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES* 2 (2), 12-17. https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/107.
14. Is lower extremity vein pathology a risk factor for the development of osteoarthritis of the knee joint? / I. Yu. Khodzhanov, B. M. Mamasoliev, A. N. Tkachenko [et al.] // Ural medical journal. – 2022. – Vol. 21, № 2. – P. 19-25. http://doi.org/10.52420/2071-5943-2022-21-2-19-25.
15. Kadirov J. F. et al. NEUROLOGICAL COMPLICATIONS OF AIDS //Journal of new century innovations. – 2022. – Т. 10. – №. 5. – С. 174-180.
16. Khamidov O. A., Khodzhanov I. Yu., Mamasoliev B.M., Mansurov D.Sh., Davronov A.A., Rakhimov A.M. The Role of Vascular Pathology in the Development and Progression of Deforming Osteoarthritis of the Joints of the Lower Extremities (Literature Review). Annals of the Romanian Society for Cell Biology, Romania,Vol. 25, Issue 1, 2021, Pages. 214 – 225
17. Khamidov O.A., Akhmedov Y.A., Ataeva S.Kh., Ametova A.S., Karshiev B.O. Role of Kidney Ultrasound in the Choice of Tactics for Treatment of Acute Renal Failure.

Central Asian journal of medical end natural sciences, volume 2 issue 4 Jul-Aug 2021 P.132-134
18. Khamidov O.A., Akhmedov Y.A., Yakubov D.Zh., Shodieva N.E., Tukhtaev T.I. DIAGNOSTIC POSSIBILITIES OF USES IN POLYKYSTOSIS OFKIDNEYS. Web of scientist: International scientific research journal, volume 2 issue 8 August 2021 P.27-33
19. Khamidov O.A., Ataeva S.Kh., Ametova A.S., Yakubov D.Zh., Khaydarov S.S. A Case of Ultrasound Diagnosis of Necrotizing Papillitis. Central Asian journal of medical end natural sciences, volume 2 issue 4 Jul-Aug 2021 P.103-107
20. Khamidov O.A., Ataeva S.Kh., Yakubov D.Zh., Ametova A.S., Saytkulova Sh.R. ULTRASOUND EXAMINATION IN THE DIAGNOSIS OF FETAL MACROSOMIA. Web of scientist: International scientific research journal, volume 2 issue 8 August 2021 P.49-54
21. Khamidov O.A., Mirzakulov M.M., Ametova A.S., Alieva U.Z. Multispiral computed tomography for prostate diseases. Central Asian journal of medical end natural sciences, volume 2 issue 2 March-aprel 2021 P.9-11
22. Khamidov O.A., Normamatov A.F., Yakubov D.Zh., Bazarova S.A. Respiratory computed tomography. Central Asian journal of medical end natural sciences, volume 2 issue 2 March-aprel 2021 P.1-8
23. Khamidov O.A., Urozov U.B., Shodieva N.E., Akhmedov Y.A. Ultrasound diagnosis of urolithiasis. Central Asian journal of medical end natural sciences, volume 2 issue 2 March-aprel 2021 P.18-24
24. Khamidov O.A., Yakubov D.Zh., Alieva U.Z., Bazarova S.A., Mamaruziev Sh.R. Possibilities of Sonography in Differential Diagnostics of Hematuria. Central Asian journal of medical end natural sciences, volume 2 issue 4 Jul-Aug 2021 P.126-131
25. Khamidov O.A., Yakubov D.Zh., Ametova A.S., Bazarova S.A., Mamatova Sh.T. Application of the Ultrasound Research Method in Otorhinolaryngology and Diseases of the Head and Neck Organs. International Journal of Development and Public Policy, volume 1 issue 3 August 2021 P.33-37
26. Khamidov O.A., Yakubov D.Zh., Ametova A.S., Turdumatov Zh.A., Mamatov R.M. Magnetic Resonance Tomography in Diagnostics and Differential Diagnostics of Focal Liver Lesions. Central Asian journal of medical end natural sciences, volume 2 issue 4 Jul-Aug 2021 P.115-120
27. Khodzhibekov M.X., Khamidov O.A., Mardieva G.M. Verification of radiation methods in diagnostics of injuries of the knee joint intra-articular structures. International Journal of Pharmaceutical Research. 2020:13(1), p. 302-308.
28. Khurshedovna AS, Danabaevich JK. Ultrasound Diagnosis of Fetoplacental Insufficiency. CAJMNS [Internet]. 2022Mar.3 [cited 2022May24];3(2):53-7. Available from: https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/621
29. Khurshedovna AS, Zafarjonovich UZ. Ultrasound Examination for the Diagnosis of Acute Appendicitis. CAJMNS [Internet]. 2022Mar.3 [cited 2022May24];3(2):72-7. Available from: https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/624
30. Rustamov U.Kh., Shodieva N.E., Ametova A.S., Alieva U.Z., Rabbimova M.U. US-DIAGNOSTICS FOR INFERTILITY. Web of scientist: International scientific research journal, volume 2 issue 8 August 2021 P.55-61

ISSN 2181-3187

31. Rustamov U.Kh., Urinboev Sh.B., Ametova A.S. Ultrasound diagnostics of ectopic pregnancy. Central Asian journal of medical end natural sciences, volume 2 issue 2 March-aprel 2021 P.25-28
32. Yakubov , J., Karimov , B., Gaybullaev , O., and Mirzakulov , M. 2022. Ultrasonic and radiological picture in the combination of chronic venous insufficiency and osteoarthritis of the knee joints. Academic Research in Educational Sciences. 5(3), pp.945–956.
33. Yakubov D. Z., Gaybullaev S. O. The diagnostic importance of radiation diagnostic methods in determining the degree of expression of gonarthrosis //UZBEK JOURNAL OF CASE REPORTS. – С. 36.
34. Yakubov Doniyor Javlanovich, Juraev Kamoliddin Danabaevich, Gaybullaev Sherzod Obid ugli, and Samiev Azamat Ulmas ugli. 2022. “INFLUENCE OF GONARTHROSIS ON THE COURSE AND EFFECTIVENESS OF TREATMENT OF VARICOSE VEINS”. Yosh Tadqiqotchi Jurnali 1 (4):347-57.
35. Zhavlanovich YD, Servetovna AA. Ultrasonography and its Role in Clinical Diagnosis. CAJMNS [Internet]. 2022Mar.3 [cited 2022May24];3(2):48-2. Available from: https://cajmns.centralasianstudies.org/index.php/CAJMNS/article/view/620
36. Кадиров Ж. Ф. и др. МАГНИТНО-РЕЗОНАНСНАЯ ТОМОГРАФИЧЕСКАЯ ОЦЕНКА ПОРАЖЕНИЙ ЦЕНТРАЛЬНОЙ НЕРВНОЙ СИСТЕМЫ У БОЛЬНЫХ, ИНФИЦИРОВАННЫХ ВИРУСОМ ИММУНОДЕФИЦИТА ЧЕЛОВЕКА //Journal of new century innovations. – 2022. – Т. 10. – №. 5. – С. 157-173.
37. Hamidov Obid Abdurahmanovich. "DIAGNOSTICS OF INJURIES OF THE SOFT TISSUE STRUCTURES OF THE KNEE JOINT AND THEIR COMPLICATIONS" European research, no. 1 (37), 2020, pp. 33-35.
38. Xamidov Obid Abduraxmanovich, Optimization of Radiological Diagnostics of Injuries of the Soft Tissue Structures of the Knee Joint and Their Complications, American Journal of Medicine and Medical Sciences, Vol. 10 No. 11, 2020, pp. 881-884. doi: 10.5923/j.ajmms.20201011.10.
39. Хамидов О. А., Гайбуллаев Ш. О., Хакимов М. Б. ОБЗОР МЕТОДОВ ОБРАБОТКИ ИЗОБРАЖЕНИЙ ДЛЯ ДИАГНОСТИКИ ПАТОЛОГИИ ГОЛОВНОГО МОЗГА: ПРОБЛЕМЫ И ВОЗМОЖНОСТИ //Journal of new century innovations. – 2022. – Т. 10. – №. 5. – С. 181-195.
40. Ходжибеков М.Х., Хамидов О.А. Обоснование ультразвуковой диагностики повреждений внутрисуставных структур коленного сустава и их осложнений. №3 (31), 2020. С.526-529.
41. Якубов Д. Ж., Гайбуллаев Ш. О. Влияние посттравматической хондропатии на функциональное состояние коленных суставов у спортсменов. Uzbek journal of case reports. 2022; 2 (1): 36-40. – 2022.