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# The New Look at the Features of the Diagnosis of Neoplasms of the Excretory System

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**Abstract:** urothelial cancer ranks 4th in the prevalence of malignant tumors after prostate (or breast) cancer, lung and colorectal cancer. Among the malignant neoplasms of the kidneys, the main and most common histological form is renal cell carcinoma, which occurs in 85-90% of cases. Excretory urography, which was previously a "first-line" study in patients with pathology, is now increasingly being replaced by computed urography and, somewhat less frequently, magnetic resonance urography.

**Keywords:** excretory urography, computed urography, magnetic resonance urography, urothelial cancer.

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**Relevance.** The incidence of pathology of the genitourinary system has remained similar over the past five years [1, 2]. Urothelial cancer ranks 4th in the prevalence of malignant tumors after prostate (or breast) cancer, lung and colorectal cancer [3-5]. Transitional cell carcinomas of the upper urinary tract (VMP) are less common than those of the bladder, but 60% are diagnosed already at stage III. Risk factors include tobacco smoking and professional activity (employment in the paint, chemical, oil industry) [3]. In addition, the ureters are involved a second time in the volumetric processes of the abdominal cavity and especially the pelvis. Among the malignant neoplasms of the kidneys, the main and most common histological form is renal cell carcinoma, which occurs in 85-90% of cases.[3,5,26]

Excretory urography (EC), which was previously a "first-line" study in patients with VMP pathology, is now increasingly being replaced by computed urography (CT) and, somewhat less frequently, magnetic resonance urography (mru). This is most likely due to the greater diagnostic value of the latter and the higher quality of the images obtained. In addition, the EU technique has a number of limitations: it is important to prepare the intestine, adequate renal function of the patient, the absence of severe liver and thyroid diseases.

To date, CT is the "gold standard" in the diagnosis of the causes of uroobstruction, including at the ureteral level. This study makes it possible to quickly and comprehensively assess the state of the urinary tract [6, 7].

It is believed that tumors of small size (less than 3 cm) are detected better with MRI than with CT, while t1 protocols with fat suppression and using intravenous contrast are the most informative in this regard.[17,19,23]

In a number of subjects, the use of ionizing radiation is difficult: these are patients who need multiple dynamic studies (especially at a young age), pregnant women, patients with reduced renal function and persons with allergic reactions to contrast media. In these situations, the method of choice may be magnetic resonance urography (mru), which allows to establish the fact of uroobstruction and suspect its cause [8-10].

Mreramination of the urinary tract can be performed in 2 ways: in the form of static contrast-free urography using ultrafast t2-weighted sequences (t2-vi) – such as with magnetic resonance mrcholangiopancreatography, and using t1-vi after intravenous administration of a contrast agent (by analogy with X-ray EC). The contrast-free technique is based on obtaining a high-intensity MR signal from a sedentary fluid located in natural and/or pathological structures in the study area, and allows you to visualize the urinary tract when they expand, cysts of various localization, the spinal canal.

**The purpose of the study** -the present study was to improve the accuracy of the diagnosis of kidney neoplasms by in-depth study of the possibilities of CT and magnetic resonance imaging (MRI).evaluation of the sensitivity of CT and mru (native study and with contrast enhancement) for patients with volumetric processes of the ureters.

**Materials and methods.** There were 72 patients under observation who were treated for diseases of the upper urinary tract in the oncology dispensary of Bukhara in the period from 2019 to 2021. All patients underwent a comprehensive radiation examination: EC was initially performed in 64.8% (n = 47), ultrasound - in 67.6% (n = 48). Further, all patients underwent CT.

Patients with primary tumors of the ureters (n = 12; 8.22%), as well as with secondary involvement of the organ in the volumetric processes of the pelvis (n = 32; 21.9%) and patients with metastatic lymph node lesions (n = 2; 1.37%) were allocated to a separate subgroup (n = 26; 31.5%).

CT on a 160-slice aquilionprime scanner (toshiba, Japan) was performed in 90.1% (n = 69), including 63 (91.3%) patients from the subgroup with volume formations. Before the study, an allergoanamnesis was collected, information about previously performed studies using KV, about the presence / absence of anaphylactoid reactions, the patient consented to the study. Only nonionic contrast agents (iodine concentration 200-350 mg/ml) were used to obtain intravenous bolus enhancement. During the study, a two-head injector was used, with which 90-120 ml of contrast agent (1.5 ml per 1 kg of patient weight) was injected into the ulnar vein at a rate of 4 ml/ s, after the end of the contrast agent administration, 50 ml of saline solution was automatically bolus injected at the same rate. 30 minutes before the study, patients took 200-400 ml of non-carbonated drinking water, which improved the visualization of the abdominal cavity and prevented the imposition of contrasting loops of the small intestine.

Mru on high-field devices with a magnetic field strength of 1.5 tlvantageatlas (toshiba, Japan) and 3.0 tlingenia (philips, Netherlands) was performed in 57 (75.4%) patients, including 100% of the subgroup with volumetric formations; in 24 (32.7%) cases it was excretory mru (with intravenous gadolinium containing a contrast agent - 0.1 mmol / kg of body weight), 11 (10.3%) patients were limited to a static native study. The developed optimized protocol is presented in Table 3. Pulse sequences with suppression of the signal from adipose tissue were used - t2 fatsatax 4 mm, t1 flash fatsat 3d cor 2 mm, haste – cor 3 mm fast pulse sequences, single thick oblique slices of 60 mm (left and right) on breath retention. For a comprehensive assessment of the pelvic organs and the search for complications of VMP interventions, all patients were required to perform diffusion-weighted images (dvi) (with the construction of icd maps). In the case of excretory urography, a contrast agent was administered.

To fill the hollow urinary organs and thus better visualize them 1-1.5 hours before the study, patients were recommended to drink 500 ml of still water. All subjects underwent diuretic loading in the form of furosemide 10 mg intravenously 15 minutes before the study; drotaverine 120 mg peros was used 30 minutes before the study to reduce the number of

motor artifacts. The superficial abdominal coil was secured with straps. Patients with electric or magnetic implants were not allowed to undergo MRI, in the case of excretory mru - at a gfr value  $< 30 \text{ ml/min/1.73 m}^2$ .

As a reference method, the results of computer urography (CT), confirmed by surgical intervention, were considered.

Results and their discussion. The distribution of localization of pathological changes of the ureters in patients with volumetric formations is shown in Table. 4. The analysis of the presented data shows that the lower third of the ureter (including the intramural part) was most often affected - in 74.1% (n = 54). Involvement of the upper third of the organ and Imp was less common - in 17.24% (n = 12 people) and the middle third – 8.66% (n = 6).

Localization of pathological changes was confirmed by cystoscopy and surgery, in 78.3% (n = 36), reconstructive plastic surgery was performed on the ureters by boari or uretero-ureteroanastomosis using the davinci robot (intuitivesurgical, USA). Nephrostomy was performed in 10 (21.7%) cases.

The level of ureteral obstruction was correctly determined in all studies with both CT and mru. The high tissue contrast of MRI made it possible to detect vmp retention in 100% of cases and to establish a diagnosis without using contrast enhancement in a larger number of observations compared with msct (mri allowed limiting the native study in 23.9% (n = 11) patients, msct – in 8.7% (n = 4). The enlarged urinary tract was characterized by a hyperintensivemr signal on t2-vi at static mru, due to a high mr signal from urine (Fig. 2, a, b); kidneys, ureters and bladder were visualized simultaneously. T2-vi thick slices made it possible to obtain images in any plane and reconstruct mip images from them. The lack of retention of the urinary tract reduced the effectiveness of the native MRI, due to the insufficient amount of hyperintensive fluid.

A comparative analysis of the possibilities of radiation diagnostics methods in determining the signs of transitional cell tumors of the ureters is presented. Since ultrasound did not allow to identify specific signs, its results were not taken into account. Low sensitivity of the EC at the stage of primary diagnosis was associated with the difficulty of obtaining adequate contrast of the ureters and, accordingly, difficulty in visualizing small (less than 15 mm) foci.

The Ec also did not allow differentiating a blood clot from aurothelial tumor and did not display a thickening of the walls of the organ, which explains the low specificity (82%).

The germination of the ureter with a pelvic tumor was noted in 32 patients with mru, in 29 with CT. Standard sequences (including dwi and the construction of adc maps) made it possible to visualize volumetric formations, the subsequent measurement more accurately assess their boundaries and distribution, which is important when choosing surgical tactics (Fig. 6, a - d).

MRI also provided additional information in the form of an assessment of the state of the surrounding fiber (infiltration was detected in 27 (58.7%) cases, the most sensitive sequence was a series with fat suppression. An increase in the mr signal was noted periureterally on them.

MRI made it possible to detect changes in parenchymal organs, liver, adrenal glands and suspect the presence of secondary pelvic bone damage (found in 6 cases). Effusion in the pelvis was equally well detected both on mri and ultrasound (n = 12, 26.1%), and this is probably due to the brightness of the radiation manifestations of free fluid accumulations. Standard t2-vi and sequences with suppression of the signal from adipose tissue made it possible to see fluid accumulations and differentiate them, for example, from cysts and

ovarian follicles.

The sensitivity of ultrasound in detecting the involvement of the ureters in the pelvic tumor process was low (29%), which may be explained by the difficulty of visualization in obese patients and with intestinal pneumatosis, as well as the complexity of anatomical relationships in the presence of tumor processes. CT demonstrated relatively high sensitivity (91%), however, its capabilities in the visualization of pelvic organs were lower than those of MRI.

The high sensitivity of mru in detecting ureteral involvement is associated with its higher tissue contrast and the possibility of obtaining polypositional images, which helps in identifying the source organ of the tumor process and assessing its prevalence. The sensitivity of mru was also maximal in detecting the state of periureteral fiber, its involvement was clearly determined on contrast-free series with suppression of the signal from adipose tissue, detecting edema and/or effusion in the mesorectum.

**Conclusion.** With the localization of pathological changes in the lower third of the ureter, especially in its distal part / mouth, the most valuable diagnostic information can be provided by a static and subsequent contrast enhancement. In this case, mru will allow you to visualize the structures of the pelvis well, assess the condition of the lymph nodes. If changes are found in the upper third of the ureter or the pelvic-ureteral junction, it is possible to obtain an adequate image of the urinary tract both with CT and with the help of MRU and ultrasound. When the "zone of interest" is localized in the middle third of the organ, the most complete amount of diagnostic information can be provided by the ctu.

Mru allows you to get additional diagnostic information about the state of the organ wall and the infiltration of the surrounding fiber. The possibility of a comprehensive assessment of the abdominal cavity and pelvic organs makes it possible to exclude other pathology and affects the patient's management tactics.

The absence of ionizing radiation allows the use of mru in pregnant women and children, in patients with reduced renal function. Given the diagnostic effectiveness similar to CT, the technique can also be used for dynamic monitoring of treatment results.

#### List of sources used:

1. Громов а.и., буйловв.м. Лучевая диагностика и терапия в урологии: национальное руководство. – м.: гэотар-медиа, 2011. С. 331–337.
2. Siegel r. L., et al. Cancer statistics. *Ca cancer j clin.* 2015. V. 65. P. 5.
3. Crivellij.j. Effect of smoking on outcomes of urothelial carcinoma: a systematic review of the literature. *Eururol.* 2014. V. 65. P. 742.
4. AxmadovaMaftuna Amin qizi .Ko'krakbezi-o'zigaxosintrakraniala'zo//JOURNAL OF ADVANCED REASERCH AND STABILITY(JARS)//Volume:01.05/2021.,171-180 bet.
5. Rakhmonovna, S. Z., &Sharipovna, A. N. (2020). Characteristics of exchange of essential microelements of copper and zinc in healthy fertilized women and women with combined copper and zinc deficiency state. *European Journal of Molecular & Clinical Medicine*, 7(1), 3332-3335.
6. Turdiyev, M. R., Teshayev Sh. J. Morphometric Assessment of Functional Immunomorphology of White Rat Spleen in the Age Aspect *American Journal of Medicine and Medical Sciences* 2019, 9(12): 523-526

7. AT Cho'liyev., US Mamedov., MAAkhmadova., RR Navro'zov., DF Narziyeva  
Diagnostics of exinococcosis in youth at the modern stage./Journal of Natural Remedies.2021,№1(1).-P37-40
8. Guljamol Fazliddinonvna Makhmudova, Adkhambek Uygunovich Nurboboyev.  
Treatment of mechanical jaundice via the modern way// Scientific progress, 2021.-№6.-  
P.530-537
9. Makhmudova G.F. Age-related clinical, anatomical and morphological features of malignant tumors of the cervix// Journal of science and technology//2021.-P.-475-480
10. Turdiev M.R., TeshayevSh.J. Comparative characteristics of the morphological and morphometric parameters of the spleen of white rats in normal conditions, chronic radiation sickness and correction with a biostimulant // Problems of biology and Medicine - 2020. - No. 4 (120) - P. 160-165
11. AH Narzulloyevich, MG Fazliddinovna, KF Sharopovna//Comparison of the results of modern methods of treatment of elderly women with breast cancer// Eurasian Medical Research Periodical 3, 9-15.
12. Махмудова Г. Ф., Темирова, Д. В., &Баротова, Ш. Б. (2021). Бачадонбўйнихавфлийўсмаларинингёшгахосхусусиятлари//Academicresearchineducationalsciences // 2(5).-Б.-186-196. <https://doi.org/10.24411/2181-1385-202100871>
13. Makhmudova G.F.,Soxibova Z.R., Mamedov U.S., Nurboboyev A.U. Fertilvakeksayoshliayollardabachadonbo'ynixavfli'o'smalaritahlili (Buxoroviloyatida)//Oriental Renaissance: Innovative, educational, natural and social sciences//2021.-V 8.-B. 175-184.
14. Nurboboyev A.U., Makhmudova G.F. Miniinvazive approach in the complex treatment of tumor and stone etiology of mechanical jaundice// International journal on Orange technology// Vol 3. Issue 9. Sep.2021.-P. 85-90
15. М.А. Ахмадова, А.Т.,СохибоваЗ.Р., Д.К. Худойбердиев.,Ж.Р.НуровДиагностикаэхинококкозаумолодѐжинасовременниомэтапе./Гиббиѐтдаянгикун 2019 й.3(27)- стр 54-56
16. М.А. Ахмадова, А.Т. Чўлиев, Ж.Р. Нуров, Д.К. Худойбердиев.Лучеваядиагностикаэхинококкозапечени./Биологияватиббиѐтмуаммолари.2019,№4.2(115)с.20-25
17. СохибоваЗ.Р., Ахмадова М.А. Комплекснаядиагностикаихирургическоеихирургическоелечениеосложненныхформэхинококкозапечени./OrientalRenaissance:Innovative,Educational, naturalandsocialsciences/2021й -стр 203-212.
18. НарзиеваД.Ф.ЗначениеИммуногистохимических маркеров при метастазировании рака молочной железы в легкие.// Oriental Renaissance:Innovtive, educational,natural and social sciences.// -2021 Vol.1-С.170-175
19. Abdullayev Habibulla Narzulloyevich, Makhmudova Guljamol Fazliddinovna, Makhmudova Anora Fazliddinovna// Age-related clinical and instrumental analysis of malignant tumors of the cervix// Eurasian Medical Research Periodical.-2021 Vol3, 1-8.
20. Z.R. Sokhibova, M.R. Turdiyev, (2021). Some Features Of Laboratory Indicators Of Micro And Macro-Elementary Condition Of The Organism Of Female Age Women Innormality And In Iron Deficiency. *The American Journal of Medical Sciences and Pharmaceutical Research*, 3(02), MO- 145.

21. Mamedov U.S., Pulatova D.SH. The Results of Cancer Treatment of the Oral Caviti Tumors in //the Republic of Uzbekistan European journal of Pharmaceutical and Medical Research. -2019. - 6(9). - P. 326-329.
22. Narziyeva D.F., Jonibekov J.J.; Morphological features of tumor in different treatment options for patients with locally advanced breast cancer // Middle European scientific bulletin. Volume 7- 2020-Dec. – P. 105-10
23. Nurov Jamshid Raxmatovich. Morph functional characters of the greater omentum // International Journal of Discoveries and Innovations in Applied Sciences. – 2021. – Vol. 1(5). – P. 130-134.
24. Nurov J.R., Khalikova F.S. Long-term results of surgical treatment patients with stomach cancer // Вестникнаукииобразования. – 2020. – №23-2(101). – С. 85-89.
25. Р.Р.Наврұзов. Характеристика морфометрических параметров желудка белой крысы в раннем постнатальном периоде //Новый день в медицине. 2 (34/3) 2021 С.17-23
26. Р.Р.Наврұзов. Морфологические и морфометрические изменения слоя желудка месячных белых крыс // Журнал Фогинновационных разработок в фармацевтической и технической науке (JIDPTS). Объем:4, Выпуск:5, Май:2021 стр. :(7-10)
27. Р. Р. Наврұзов. Лимфотропная терапия в комплексе лечения гнойно-воспалительных заболеваний кисти в амбулаторных условиях // Новый день в медицине 30.2020
28. R. R. Navruzov. Morph functional features of the lymphoid structures of the colon in normal and under the influence of a biostimulator on the background of radiation sickness // Web of Scientist: International Scientific Research Journal Sep 8, 2021 Page: (53-56)
29. Р. Р. Наврұзов., Тешаев Ш.Ж., Очилов К.Р., Худойбердиев Д.К. Сравнительная характеристика толстой кишки белых беспородных крыс при хронической лучевой болезни и после воздействия биостимулятора асд-2ф // Новый день в медицине 6 (38) 2021г. С. 272-276
30. ГафурНормуродович Саидов, Учкун Гафурович Абдукаримов, Гулжамол Фазлиддиновна Махмудова. Эпидемиологические показатели первично-множественных опухолей (обзор литературы)// Биология и интегративная медицина// 2019№ 11 (39).-С.
31. Нуров Ж.Р. Послеоперационная аналитика раннего периода хирургического лечения злокачественной опухоли желудка // OrientalRenaissance: Innovative, educational, naturalandsocialsciences. – 2021. – Vol. 1(8). – P. 185-191.
32. Sokhibova Z. R., Akhmedova M.A. Complex diagnostics and surgical and surgical treatment of complicated forms of liver echinococcosis./Oriental Renaissance: Innovative, Educational, natural and social sciences/2021 -pp. 203-212.
33. Nurov Jamshid Raxmatovich, Narziyeva Dilnoza Fakhriddinova. The Significance of Immunohistochemical Markers in the Treatment ofBreast Cancer // International journal on orange technology. – 2021. – Vol. 03(9). – P. 69-72.
34. NurovJamshid Raxmatovich, Ahmadova Maftuna Amin qizi. Features of Anatomy of the Greater Omentum // International journal on orange technology. – 2021. – Vol. 03(9). – P. 66-68.

35. NurovJamshid Raxmatovich, Narzieva Dilnoza Fakhriddinovna. Immediate Results of Surgical Treatment of Gastric Cancer // International journal on orange technology. – 2021. – Vol. 03(9). – P. 62-65.
36. Sokhibova, Z. R., &Turdiyev, M. R. (2021). Some Features Of Laboratory Indicators Of Micro And Macro-Elementary Condition Of The Organism Of Female Age Women Innormality And In Iron Deficiency. *The American Journal of Medical Sciences and Pharmaceutical Research*, 3(02), 140-145.
37. MG Fazliddinovna, NA Uygunovich, ND Faxriddinovna The modern way of diagnosis of cervical pathology in women with uterine fibroids via the colposcopy//Web of scientist: international scientific research journal.-3(02), 1017-1027, 2022.
38. Mamedov U.S, Khalikova F. Sh. Advantages of Magnetic Resonance Computer Tomography in the Diagnosis of Thyroid Cancer //Pindus Journal of Culture, Literature, and ELT. – 2021. – Т. 9. – С. 80-84.
39. Axmedov Farxod Xakimovich//CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES//Морфологические Изменения Внутри И Внепеченочных Протоков, И Сфинктеров У Больных С Желчекаменной Болезнью, Постхолецистэктомии. Volume: 02 Issue: 05 | Sep-Oct 2021
40. Xudoyberdiyev Dilshod Karimovich CHARACTERISTICS OF MORPHOMETRIC PARAMETERS OF THE WHITE RAT'S STOMACH IN THE EARLY POSTNATAL PERIOD//Тиббиётда янги кун//2 (34/3) 2021 С-17-23
41. Xudoyberdiyev Dilshod Karimovich ОҚКАЛАМУШЛАРИЙЎФОНИЧАГИСУРУНКАЛИНУРКАСАЛЛИГИДАВАБИОСТ ИМУЛЯТОРЛАРТАЪСИРИДАНКЕЙИНГИҚИЁСИЙХУСУСИЯТЛАРИ//Биология ва тиббиёт муаммолари//2021, №3 (128)
42. Xudoyberdiyev Dilshod Karimovich МОРФОЛОГИЧЕСКИЕИМОРФОМЕТРИЧЕСКИЕИЗМЕНЕНИЯСТЕНКИЖЕЛУДКАОДНОМЕСЯЧНЫХБЕЛЫХКРЫС//INTERDISCIPLINARY RESEARCH: SCIENTIFIC HORIZONS AND PERSPECTIVES International Scientific and Theoretical Conference//March 12, 2021 С 57-61
43. Axmedov Farxod Xakimovich SCIENTIFIC COLLECTION «INTERCONF»COMPARATIVE MORPHOMETRY OF INTRA AND EXTRAHEPATIC BILIARY TRACT, BILIARY SPHINCTERS IN PATIENTS WITH CHOLELITHIASIS WHO UNDERWENT CLASSICAL AND LAPAROSCOPIC CHOLECYSTECTOMY№ 78 | October, 2021 P-325-327
44. Sultanova L. The Dj. Nuraliyev N. A. Indicators of Seeding of Microorganisms translated from the Large Intestine to Internal Oragans under the Influence of Acuteationation in the Experiment//American Journal of Medicine and Medical Sciences//Volume 10, Number 11,Novembr 2020.p-929-932
45. G.F. Makhmudova Colposcopic analysis of cervical pathology in women with uterine fibroids//Scientific progress// 3(1), 289-296,2022
46. А.У. Нурбобоев, МСШаропова, А.Ф. МахмудоваТурлиэтиологиялимеханиксарикликнидаволашдазамонапвийминиалапар атомусуллар// Scientific progress// 3(1), 713-721, 2022