Diagnostic Possibilities of Ultrasound in Polycystosis of the Kidney

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ABSTRACT

The article presents the results of examination of 4 patients suffering from polycystic kidney disease. It is noted that ultrasound methods are the most informative in the diagnosis of this pathology. The clinical course of polycystic disease was characterized by few symptoms . Despite the severity of morphological changes, kidney function suffered slightly. The possibility of dynamic changes in the size and content of cysts throughout life is assumed , as well as the presence of a congenital connective tissue defect in familial polycystic kidney disease.

Keywords: Ultrasound, diagnostics, polycystic kidney disease

Polycystic kidney disease is a disease that is the replacement of the renal parenchyma with a large number of cysts of various sizes. The disease is referred to as an anomaly in the structure of the kidneys. At the moment, polycystic disease occurs, according to various authors, up to 1:350 autopsies. Hereditary transmission of polycystic kidney disease is observed in 10% of cases. The disease is inherited in an autosomal dominant manner, and is often combined with malformations of other organs - the liver, lungs, spleen, etc. The life expectancy of patients with polycystic disease is about 20 years from the moment of diagnosis , however, timely and comprehensive treatment of the disease can increase the life expectancy of patients by 10-15 years (Yu.A. Pytel , 1995).

Within a month, we identified two cases of familial polycystic kidney disease, and a total of four patients were examined, of which two women are 42 and 43 years old, a man is 20 years old and a 14-year-old girl. The examination included laboratory diagnostics (general and biochemical blood and urine tests, urine tests according to Nechiporenko and Zimnitsky , Reberg's test), ECG, ultrasound (ultrasound of the kidneys, abdominal organs and echocardiography), magnetic resonance imaging and excretory urography. In both cases, the disease was inherited through the maternal line, however, signs of autosomal dominant inheritance are clearly visible - all children get sick, polycystic kidney disease is diagnosed in many maternal relatives, regardless of gender.

As an illustration, here are the case histories of two patients:

1. Patient B., 43 years old. The diagnosis of polycystic kidney disease was first made in 1997, at the age of 42, while in the cardiology department of the city hospital No. 3 in Bratsk with a diagnosis of coronary artery disease, progressive angina pectoris. Symptomatic arterial hypertension. In the objective status: palpation in the projection of both kidneys tumor-like formations are determined, there is severe arterial hypertension up to 260/140 mm. rt. Art. From the anamnesis it was found out that from childhood she was observed for chronic pyelonephritis, which often worsened. The mother, maternal uncle, nephews and cousin were diagnosed with polycystic noci. Laboratory data: a decrease in the concentration function (in the Zimnitsky sample , the specific gravity is within 1002-1011), the predominance of nighttime diuresis over

daytime . Reberg's test and level . blood creatinine within normal limits, minimal proteinuria Electrocardiographically determined left ventricular hypertrophy. Examination of the fundus revealed retinal angiopathy , Salus symptom -

II. Echocardiographically - symmetrical hypertrophy of the left ventricle, prolapse of the mitral and tricuspid valves with the presence of regurgitation of the 2nd degree.

2. Patient P., 14 years old. For the first time , polycystic kidney disease was diagnosed at the age of 4 years. At the time of the study, I was worried about frequent nagging pains in the lower back, some weakness, and rapid fatigue. Objectively: an asthenic physique, a mass is palpable in the projection of the left kidney, a systolic murmur is heard in the heart with a break from the I tone with the epicenter at the Botkin point and at the apex. The family nature of the disease can be traced: polycystic disease was detected in the mother and brother, the maternal grandmother died at a young age from kidney disease. The laboratory determined a decrease in the concentration function of the kidneys (the specific gravity of urine was in the range of 1007-1012, the predominance of night diuresis over daytime diuresis). The content, creatinine , urea and other biochemical parameters are within acceptable fluctuations.

Ultrasound diagnostic data were quite similar in all cases. Ultrasound revealed an increase in both kidneys, more on the left (in all patients). While the size of the length of the right kidney was up to 13.7 cm, it was not possible to estimate the true size of the left kidney - the length exceeded the size of the ultrasonic sector. In the structure of both kidneys, there were multiple thin-walled liquid formations - cysts, which can be traced in the projection of both the parenchyma and the pelvicalyceal apparatus. The size of the formations varies within 1.2-3.5 cm. In older persons (women 42 and 43 years old), the cystic elements are quite homogeneous, their size is in the range of 2.0-3.3 cm, hyperechoic areas can be traced between the cysts. parenchyma. On the contrary, in the kidneys of patients aged 16 and 20, heterogeneity of cystic elements is observed, their sizes fluctuate within the limits of their minimum and maximum values, and the maximum size of the cyst was found in the youngest patient. The kidney parenchyma is traced in areas of various sizes, normal acoustic density.

Magnetic resonance imaging of the kidneys reveals an increase in size and volume, mainly of the left kidney (long exceeds 20 cm). In both organs, formations (cysts) of various sizes (up to 30x35 mm) with clear contours and a well-defined capsule are determined. When determining the signal intensity in patients of different ages, the data differ somewhat (we used the determination of signal intensity weighed in water). Thus, in a 14-year-old patient, the signal intensity in most formations is an order of magnitude higher than the parenchymal one, however, three formations with moderate signal hypointensity were observed . The study of signal intensity in patients 42-43 years old revealed a heterogeneous hypointense signal, and areas of hyperintensity were found between the cysts , which may indicate the presence of sclerotic changes in the parenchyma. It should be emphasized that regardless of the age of patients, the heterogeneity of signals from cystic formations is clearly defined, which may indicate different contents of cysts (for example, different concentrations of substances).

typical for polycystic kidney disease were observed in all patients during intravenous urography. In particular, the polycyclicity of the contours of the kidneys, uneven expansion of the cervical parts of the cups were revealed. The pelvis is compressed, their edges take the form of wings. Some necks of cups go around cysts. An analysis of the dynamics of changes in the excretory urogram in a 42-year-old patient (comparison was made with urograms five years ago) determines a clear negative trend: the size of the kidneys increased, signs of compression of the pyelocaliceal complex intensified.

Data obtained in the study of other organs and systems deserve special consideration.

As signs of a complication of polycystic disease - arterial hypertension - it is possible to interpret the presence in older patients of left

ventricular hypertrophy with systolic overload according to ECG data, the detection of retinal angiopathy and symptoms of Salus 1-11. An echocardiographic study revealed the presence of mitral and tricuspid valve prolapse II degree with regurgitation to the left and right atria, respectively, in all examined patients. During the analysis of excretory urograms , anomalies in the development of the musculoskeletal system expressed in varying degrees and combinations were revealed. All patients had binuclear discs (L4-L5; L5-8]), changes in the tropism of the intervertebral articular processes, non-fusion of the vertebral arches, partial or complete sacralization.

Based on the results of observation of a group of four people, it is premature to draw final conclusions, but the patterns identified allow us to draw some conclusions that can be the subject of discussion and the starting point for deeper research.

With all the variety of modern diagnostic methods, we consider it necessary to note that ultrasound diagnostics should be recognized as the most informative. It is also important that this method requires the least material costs. The significance of other medical imaging methods used in our institution (MDC No. 1) is somewhat less. The value of intravenous urography increases in assessing the dynamics of changes in the size of the kidneys and the state of the pyelocaliceal system. Assessing the importance of magnetic resonance imaging, it should be noted that the method allows you to obtain a large amount of various information, but most of it is currently of purely scientific interest and does not have sufficient clinical significance.

Draws attention to the lack of symptoms of the disease. The clinical picture becomes bright with the appearance of complications, in particular arterial hypertension. Hypertension manifests itself at a fairly mature age and has features of malignancy: the early appearance of left ventricular hypertrophy, vascular disorders, changes in the fundus. We consider it necessary to emphasize that with all the severity of morphological changes and the presence of complications, kidney function suffers little, its violation does not exceed CRF I degree in terms of a decrease in concentration function. Nitrogen release remains intact.

The detection of pronounced heterogeneity of cystic elements according to ultrasound scanning and magnetic resonance imaging in younger patients and a smaller fluctuation in size in older patients suggests a transformation in the size of cysts in the course of life. On the basis of the same data, the formation of new elements over time is not ruled out.

Of undoubted interest are the data obtained by magnetic resonance imaging. The detection of different signal intensities from cysts allows us to assume a different composition of the contents of the elements. It can be assumed that there is a different concentration of the electrolyte composition, or protein content. Identification of pronounced heterogeneity of the signal in younger patients (the signal varies from significant hyperintensity to hypointensity) and hypointense signals in older patients is the basis for the assumption of a dynamic change in the contents of the cyst in the process of life. It should be emphasized that the assumptions made are based only on the results of magnetic resonance imaging and have not yet been confirmed by other methods.

Conclusions. In all examined patients, in the study of organs and systems, in addition to the pathology of the kidneys, anomalies in the development of the musculoskeletal system were revealed - dual-core discs, anomalies in the tropism of the intervertebral articular processes, non-fusion of the vertebral arches. The picture is complemented by significant prolapse of the mitral and tricuspid valves revealed during echocardiography with the presence of regurgitation . Comparing the above facts, we consider it legitimate to assume . That is, with familial polycystic kidney disease, there is a congenital defect in the development of connective tissue.

Bibliography

1. Зокиров М.М. & Касымова, С. А., & Рустамова, И. К. (2019).

Нейропсихологическое исследование пациентов с длительной посттравматической эпилепсией. *Молодой ученый*, (4), 116-118.

2. Sarvinoz, T., & Muzaffar, Z. (2022). Rehabilitation aspects of water therapy in modern medicine. *Uzbek Scholar Journal*, *6*, 102-106.
3. Sarvinoz, T., & Muzaffar, Z. (2022). Rehabilitation for childhood cerebral palsy. *Uzbek Scholar Journal*, *6*, 97-101.
4. Nabievna, M. Y., & Muzaffar, Z. (2022). Literatural review of the relevance of the problem of neurosaids. *Modern Journal of Social Sciences and Humanities*, *4*, 558-561.
5. Nabievna, M. Y., & Muzaffar, Z. (2022). Modern View on the Pathogenesis of Hiv Encephalopathy. *Spanish Journal of Innovation and Integrity*, *6*, 478-481.
6. Muzaffar, Z., & Okilbeck, M. (2022). Dementia and arterial hypertension. *Modern Journal of Social Sciences and Humanities*, *4*, 19-23.
7. Muzaffar, Z., (2022). Chronic Obstructive Pulmonary Disease in Combination with Cardiovascular Diseases. *European Multidisciplinary Journal of Modern Science*, *6*, 150-155.
8. Зокиров, М., & Мухаммаджонов, О. (2022). Особенности развития тревожных и депрессивных расстройств при заболеваниях, сопровождающихся хроническим болевым синдромом. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, 841-844.
9. Зокиров, М., & Мухаммаджонов, О. (2022). Вич энцефалопатия и его патогенетические аспекты. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, 855-858.
10. Muzaffar, Z. (2022). HIV Encephalopathy and its Pathogenetic Aspects. *European Multidisciplinary Journal of Modern Science*, *4*, 843-846.
11. Зокиров, М. М., Рустамова, И. К., Касимова, С. А., & Кучкарова, О. Б. (2019). Жарохатдан кейинги талвасада кечки нейровизуализацион ўзгаришлар. In *Современная медицина: новые подходы и актуальные исследования* (pp. 56-60).
12. Zokirov M., Mukhammadjonov, O. (2022). Cognitive Impairments in Patients with HIV-Associated Encephalopathy. *Central asian journal of medical and natural sciences*, *3*(2), 401-405.
13. Zokirov, M. M., & Mukhammadjonov, O. (2022). Cognitive impairment in patients with Parkinson's disease and optimization of its treatment. *Eurasian Scientific Herald*, *7*, 177-180.
14. Зокиров, М., & Туланбоева, С. (2022). Когнитивные нарушений у пациентов с ВИЧ–ассоциированной энцефалопатией. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, 68-73.
15. Muzaffar, Z. (2022). Literature reviews on nervous system damage during hiv infection. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, *2*(9), 141-147.
16. Muzaffar, Z. (2022). Correction of cognitive disorders in patients with hiv encephalopathy. *Web of Scientist: International Scientific Research Journal*, *3*(12), 402-411.
17. Muzaffar, Z. (2022). Psychological State in Patients with HIV Infection. *Amaliy va tibbiyot fanlari ilmiy jurnali*, *1*(6), 52-56.
18. Зокиров, М., & Мадмаров, Д. (2022). Корреляция ээг картины головного мозга и когнтитивного статуса у пациентов с эпилепсией. *Theoretical aspects in the formation of pedagogical sciences*, *1*(5), 227-230.
19. Зокиров, М. (2021). Medical sciences. *scientific ideas of young scientists*, 21
20. Зокиров, М. (2022). Анализ когнитивных нарушений у пациентов с вич–энцефалопатией. *Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali*, *2*(10), 251-260.
21. Muhammadjonov, O., & Zokirov, M. 2-toifa qandli diabet bilan og'rigan

bemorlarda yurak-qon tomir kasalliklarining xavf omillarining tarqalishi. *Студенческий вестник Учредители: Общество с ограниченной ответственностью" Интернаука" Тематическое направление: Other social sciences*, 53-54.

22. Зокирив, М. (2021). Коррекция когнитивных нарушений у больных с ВИЧ-ассоциированной энцефалопатией. *Дж. Теор. заявл. Науки*, *7*, 62-66.