REVIEW

from
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University Hospital "Alexandrovska" EAD, Sofia
According to the Order of the Rector of the Medical University - Varna
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of dissertation on the topic:
FEATURES, DIAGNOSTIC APPROACH AND STRATEGY IN THE TREATMENT OF PATIENTS WITH PYONEPHROSIS.
ANALYSIS OF HOSPITALIZED PATIENTS FOR A 5-YEAR PERIOD
on

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Scientific adviser: Prof. Dr. Valentina Madjova, Ph.D.

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for the award of the educational and scientific degree "Doctor"
Specialty "General Medicine"
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Dr. Petar Atanasov Kosev graduated in medicine in 2009 at the Medical University "Prof. Dr. Paraskev Stoyanov", Varna. He started working as an intern at the University Hospital "St. Marina" EAD, Varna in the Clinic of Nephrology, Sector "Transplantation", then in the Clinic of Urology. Since 2015 is an assistant in the Department of General Medicine and Clinical Laboratory, Management Board of General Medicine. He has acquired the specialty "Urology" since 2016. Now he works in MHAT "St. Anna AD, Clinic of Urology. There are many publications incl. in foreign publications and many participations in scientific programs. He speaks foreign languages - English, Italian, Russian, German.

The dissertation was discussed and directed to the public defense of the Departmental Council of the Department of General Medicine at MU "Prof. Dr. Paraskev Stoyanov "- Varna.

The dissertation is presented in a volume of 127 standard typewritten pages including 41 tables, 36 figures and one appendix. The dissertation has attached a list of cited literature from 180 sources, of which 17 in Bulgarian and 163 in English. There is an abstract of 44 pages (A4 format) with understandable, accurate and concise presentation of the main characteristics of the dissertation - goal, objectives, methods, results, conclusions, algorithm for diagnosis and behavior in patients with pyonephrosis (PN)), conclusions and contributions. The dissertation is properly structured with a clearly defined goal - to study and analyze methods for diagnosis and treatment of patients with PN and the development of an algorithm for behavior in support of hospital and pre-hospital medical practice. To achieve the goal, six tasks have been identified, correctly covering all aspects of the set goal. The material used includes enough patients for an optimal period - five years to obtain complete results.

The methods include analysis of the entire medical documentation of the performed routine clinical, laboratory and imaging examinations. After the nephrectomy, an analysis of the pathomorphological diagnosis leading to purulent-necrotic changes in the renal parenchyma was performed, which ensures the precision of the clinical activity. The incidence of major comorbidities - hypertension, ischemic heart disease, cerebrovascular disease, chronic obstructive pulmonary disease, diabetes mellitus and chronic kidney failure - was studied. Appropriate statistical methods for data processing were used.

Patients with pyonephrosis (PN) underwent surgical treatment with nephrectomy, open drainage, or percutaneous nephrostomy. Own results include demographic characteristics of patients with pyonephrosis and its frequency - for women most common in the period 61-70 years. and absent in the studied patients over 80 years, men - 51-60 years. with decreasing with age. In the group with nephrectomy the number of affected kidneys on the right is 47, compared to the left - 17. In the group with percutaneous drainage by percutaneous nephrostomy (PNS) the impression is greater on the right side - 76 compared to the left 29 as the right-to-left distribution is maintained, regardless of the sex of the patients. When characterizing the clinical picture in patients with PN in the group with open surgical treatment, the frequency of afebrile is 54.1%, with fever - 41% and subfebrile - 4.9%. In renal drainage, the results were 56.2%, 32.4% and 11.4%, respectively. The most affected age group with PN is between 51 and 80 years. The results have statistical reliability.

In the group of patients with nephrectomy, the number of affected kidneys on the right was 47, compared to 17 on the left. country, regardless of gender. The results have statistical reliability.

Interesting is the described characteristic of the features in the clinical picture in patients with PN, namely in terms of fever, pain, and existing urinary tract infection for three or more months ago. In the group of patients with open surgical treatment the afebrile ones were 54.1%, the subfebrile ones - 4.9%, the febrile ones - 41%. In patients with PNS, the figures were 32.4%, 11.4% and 56.2%, respectively. A history of renal colic was found in 78.7% of patients with open surgical treatment. The incidence of previous urinary tract infection (UTI) has the same characteristics in open surgical treatment and in PNS - 65.7% and 34.3%, respectively.

Laboratory tests have been identified in patients with pyonephrosis for inflammatory markers such as white blood cell counts, hemoglobin, CRP, protein, blood and bacteria in the

urine, and the most common cause of infection. Leukocytosis is most often between 16 and 20 g / l, with 62% present anemia - Hb below 120 g / l, extremely high CRP values were found in all patients and a direct correlation with leukocytosis. Proteinuria, haematuria and the presence of bacteria in the urine are described in detail, as well as the relationship between these indicators. In 99 of the patients - 59.6%, no bacterial cause was found. Escherichia coli has the largest share - 25.9%, followed by Klebsiella pneumoniae - 6.0%, Entero-coccus faecalis - 3.6% and less than 3% Pseudomonas aeruginosa and Proteus mirabilis.

The imaging methods used show that renal lithiasis has been identified as a cause of pyonephrosis in 83/50% / patients.

Of all patients with a scan, 70 were found to have renal malformations - 15 (21.4%) had PUS stenosis, ureteral stenosis - 14.3%, renal cysts - 14.3%. In 16 of them - 22.9% there is a renal abscess, paranephritis in 17.1%, and in 7 patients (10%) pyelonephritis was found as a cause of PN.

A description of the frequency of concomitant diseases in patients with PN and their significance for it has been made.

CONCLUSIONS

1. Renal lithiasis is the most characteristic pathology and occupies a major place as a cause of renal obstruction in patients with PN, regardless of the size and position of the calculus (s). Pyelonephritis with all its variants is characteristic of the purulent-destructive renal process.

2. The combined use of laboratory tests related to the clinical picture has greater practical value than their independent application for accurate diagnosis of the process.

3. Timely and accurate early diagnosis of severe renal disease in patients with PN, as well as their timely surgical treatment are essential for preservation of the affected kidney, rapid improvement, and reduction of mortality.

4. Independent or combined use of diagnostic methods (abdominal ultrasound, CT scan) for rapid differentiation of the condition within the emergency are most widely used in patients with pyonephrosis.

5. Regular follow-up of patients with chronic diseases and urinary tract infections in the system of primary and specialized pre-hospital medical care can contribute to reducing the preconditions for life-threatening accidents in them.

6. History of UTI, lumbar pain and fever are the most common complaints in patients with PN.

7. Bacterial causative agents can be different, with the leading microorganism being Escherichia coli, but the absence of a specific causative agent is also possible.

8. In patients with PN, the right kidney is more often affected than the left, and the most affected age group is 51 to 80 years, regardless of gender.

9. Hypertension is the most common concomitant disease among a total of 6 serial chronic diseases in patients with PN. Renal failure and diabetes play an important aggravating role in the rapid progression of the disease.

10. Wider application of the developed diagnostic and treatment algorithm in patients with PN would contribute to early diagnosis and improve the quality and effectiveness of treatment.

CONTRIBUTIONS TO THE DISSERTATION
ORIGINAL SCIENTIFIC AND APPLIED CONTRIBUTIONS

1. Specific, age and sex-dependent features have been identified in hospitalized patients with pyonephrosis for a period of 5 years.

2. The most common clinical signs, constellation of laboratory tests and imaging methods for diagnosis in patients with pyonephrosis have been identified.

3. There was a statistically significant positive correlation between the duration of symptoms before hospitalization and hospital stay.

4. Cardiovascular disease has been found to be among the most common chronic diseases in patients with PN, and diabetes mellitus and chronic renal failure play an aggravating role as stand-alone and / or concomitant diseases.

5. An original diagnostic and treatment algorithm has been developed for patients with PN with the possibility of wide application in general medical practice.

CONTRIBUTIONAL CONTRIBUTIONS

1. The importance of early diagnosis of the condition in patients with pyonephrosis for rapid recovery and reduction of mortality is confirmed.

2. The higher diagnostic value of the combined use of ultrasound of the abdomen and CT of the abdomen and pelvis in patients with pyonephrosis is confirmed.

3. It is confirmed that urinary lithiasis is the most common cause of obstruction, and pyelonephritis is the most common pathoanatomical process leading to loss of function of the renal parenchyma.

4. The importance of timely hospitalization and surgical treatment of patients with pyonephrosis to reduce mortality is confirmed.

The presented Algorithm for diagnosis and treatment of patients with PN, which can improve the clinical behavior in PN, is of great practical importance.

The dissertation has presented three publications related to the dissertation, sufficient according to the regulated requirements.

In conclusion, I can say that the dissertation is on a topic that has not been studied so far in our country, significant from a theoretical and especially practical point of view, properly structured. The goal and the tasks are precisely defined, logically consistent and solved with significant results. Contributions with important practical orientation, incl. An algorithm for the diagnosis and treatment of patients with PN that can improve the clinical behavior in PN. The dissertation has the necessary publications in connection with the dissertation, which meets the requirements of The Law on The Development of The Academic Composition in The Republic of Bulgaria and the Regulations of MU - Varna. This gives me a reason to vote positively for the dissertation.

January 26, 2022
Sofia

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