

ВОЗРАСТНЫЕ КЛИНИКО-ЛАБОРАТОРНЫЕ ОСОБЕННОСТИ ОСТРОГО ЭПИДИДИМИТА: РЕТРОСПЕКТИВНЫЙ АНАЛИЗ 260 СЛУЧАЕВ

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Аннотация: Острый эпидидимит является распространенным урологическим заболеванием, но его клиническая картина может различаться у молодых и пожилых пациентов. Этот ретроспективный анализ был направлен на изучение возрастных различий в клинических и лабораторных особенностях острого эпидидимита в когорте из 260 пациентов. Бактериурия чаще встречалась у пациентов старшего возраста.

Ключевые слова: эпидидимит, орхит, серозный, гнойный, клинические проявления, лихорадка, пиурия.

О'TKIR EPIDIDIMITNING YOSHGA BOG'LIQ KLINIK-LABORATOR XUSUSIYATLARI: 260 BEMORLARNING RETROSPEKTIV TAHLILI

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Annotatsiya: O'tkir epididimit keng tarqalgan urologik holatdir, ammo uning klinik ko'rinishi yosh va keksa bemorlarda farq qilishi mumkin. Ushbu retrospektiv tahlil 260 bemorda o'tkir epididimitning klinik va laboratoriya xususiyatlaridagi yoshga bog'liq farqlarni o'rganishga qaratilgan.

Kalit so'zlar: epididimit, orxit, seroz, yiringli, klinik xususiyatlari, isitma, pyuriya.

AGE-RELATED CLINICAL AND LABORATORY FEATURES OF ACUTE EPIDIDYMITIS: A RETROSPECTIVE ANALYSIS OF 260 CASES.

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Annotation: Acute epididymitis is a common urological condition, but its clinical presentation can vary between younger and older patients. This retrospective analysis aimed to investigate age-related differences in the clinical and laboratory features of acute epididymitis in a cohort of 260 patients.

Keywords: epididymitis, orchitis, serous, purulent, clinical characteristics, fever, pyuria.

Introduction: The recent process of population aging and the spread of antibiotic-resistant microbial strains have given particular significance to the investigation of various aspects of epididymitis (EP) in both elderly and young patients. Despite the lack of clear understanding regarding the etiology and treatment strategies of this condition, it is imperative to explore it from different perspectives. In this context, our study aimed to examine the impact of patient age (older or younger) on symptoms associated with EP. It is important to note that EP can manifest with different characteristics in elderly and young patients, including the causative agent and severity. However, it is worth mentioning that previous research has predominantly focused on younger males in the United States [1].

The question of the association between EP and urinary tract infections (UTIs) has been widely discussed in the literature. There is a theory suggesting that EP in young males is typically linked to sexually transmitted infections (STIs), while in elderly males, it is primarily associated with UTIs [2-5]. This difference can be explained by the diversity of infection pathways, some of which are related to the urinary tract, while others involve urogenital organs such as the prostate or seminal vesicles [6]. EP presents with a variety of clinical symptoms and signs. For instance, the infection can have an acute or chronic onset, and the presence of fever may vary among patients [5]. Differences in the degree of inflammation may provide clarity regarding variations in the clinical presentation of the condition [7]. It is important to note that elderly patients may also experience lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) [8]. Therefore, factors related to the urogenital system can influence the development of the infectious disease, including the presence of pyuria, bacteriuria, or increased residual urine volume. Within the scope of this study, we conducted a retrospective data analysis, encompassing 260 cases obtained from the 1st City Clinical Hospital named after Ibn Sina in Tashkent, Uzbekistan. Our objective was to investigate clinical risk factors associated with symptoms related to EP, taking into account the age characteristics of the patients and the presence of pyuria or bacteriuria in urine. The data obtained may serve as an essential starting point for future prospective and randomized studies aimed at gaining a deeper understanding of the clinical risk factors for EP

symptoms and developing effective treatment algorithms.

Materials and Methods:

Epididymitis Cases

Data related to EP were collected at the 1st City Clinical Hospital named after Ibn Sino in Tashkent. The study was conducted in compliance with the Helsinki Declaration (approval number: 160148). Epididymitis was diagnosed by attending physicians as swelling and tenderness of the epididymis. All patients were diagnosed and treated between 2017 and 2022.

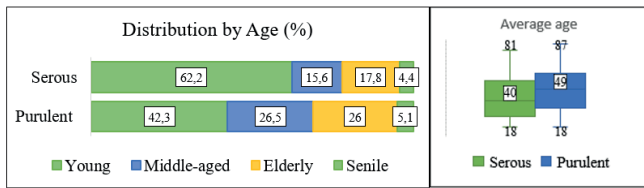
Data Analysis

All data included the following factors: age, presence or absence of fever, duration until fever resolution, localization, tenderness, pyuria, bacteriuria, and antibiotic treatment. The studied symptoms remained the same as at the time of diagnosis. Furthermore, pyuria and bacteriuria were examined for their potential to cause symptoms associated with EP. Pyuria was defined as the presence of six or more leukocytes in the microscopic field, while bacteriuria was defined as the bacterial isolation of 10^5 or more colony-forming units per milliliter in urine. Bacteriuria was diagnosed using a bacteriological analysis of urine.

Results and Discussion: The data analysis revealed that the age of the patients ranged from 18 to 87 years. Out of all the cases of EP, 103 cases were of the right-sided form, 152 were left-sided, and 5 cases were bilateral. High fever ($\geq 38^\circ\text{C}$) was observed in 22.7% of the patients, and the average duration of high fever was 3.35 ± 1.83 days.

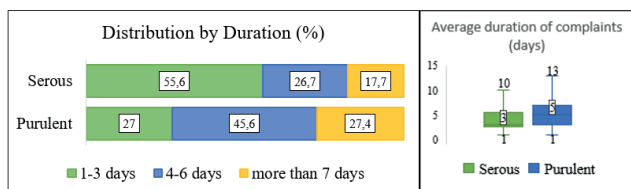
The final diagnosis indicated that 45 patients had a serous form of inflammation, with over 75% having a mild severity and 22.2% having a moderate severity. No patients were observed with severe serous EP. The remaining 215 patients were diagnosed with a purulent-destructive form of the disease, with 14.4% having mild severity, 58.1% having moderate severity, and 27.4% having severe severity. We also conducted an analysis of age differences among patients with different forms of EP. As shown in Figure 1, patients with the purulent-destructive form of the disease were on average 9 years older, and these differences were statistically significant ($p=0.035$) using the Mann-Whitney U test. However, when comparing age groups, we did not find statistically significant differences ($p=0.107$) using the Pearson's Chi-squared test.

Figure 1
Distribution of Patients Based on the Severity and Stage of Inflammatory Process.



As seen in Figure 2, concerning the duration of the disease and the time of admission to the urological hospital, patients with a serous course of EP had statistically significant differences in the duration of the disease compared to patients with a purulent-destructive character of the inflammatory process.

Figure 2
Duration of complaints depending on the stage of EP.

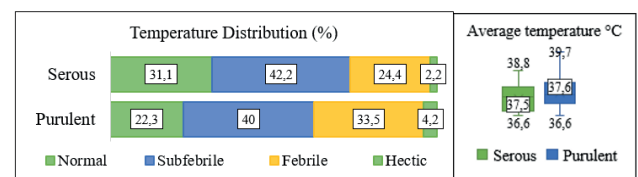


In general, patients with EP typically sought medical attention between 4 and 6 days after the onset of the disease, with 110 out of 260 patients (42.3%) falling into this category. On the other hand, fewer patients sought medical attention a week after the debut of the disease, with only 67 out of 260 patients (25.8%). Among patients with the serous form of EP, a greater number of patients had a shorter duration since the onset of initial complaints, ranging from 1 to 3 days, constituting more than 55% of patients. Slightly less than 27% of the examined patients with serous EP turned to medical care within 4 to 6 days, and only 17.7% of patients reported complaints lasting more than a week. On the other hand, the situation in patients with purulent-destructive processes significantly differed. In this case, most patients had a medical history of the disease lasting for 4 days or more. For example, 59 (27.4%) patients had a duration of over a week, and the majority of patients, 98 (45.6%) out of 215, had a duration of 4-6 days, with only 39.6% of patients having a duration of fewer than 3 days. In patients with a purulent stage of the inflammatory process, the average duration of pain, temperature elevation, and scrotal enlargement was higher compared

to patients with serous EP. However, the difference was not statistically significant. Regarding pain syndrome, the average pain severity score assessed using the Visual Analog Scale (VAS) 0-no pain, 10-severe pain) was 5 (4; 6) points for patients with a serous course, with a maximum of 7 points, while for patients with a purulent-destructive course, it was 6 (5; 7) points with a maximum of 9 points ($p < 0.001$).

Thus, analyzing our data, we have confirmed that a long-lasting inflammatory process and delayed patient consultation with a specialist often lead to the development of a purulent-destructive course of EP. In most cases, when observing the picture of EP, we did not observe a clinic of high-intensity infectious-toxic syndrome (Fig. 3). For instance, 64% of all examined patients had normal body temperature or subfebrile temperature, with 105 (40.4%) patients having a subfebrile temperature, less frequently seen was a febrile temperature in 84 (32.3%) patients, and only in 9 (3.5%) was a hectic temperature observed.

Figure 3
Analysis of Hyperthermia Depending on the Course Type



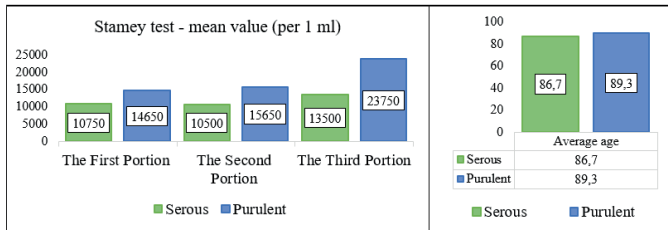
In the group of patients with acute serous EP, normal and subfebrile temperatures were observed in the vast majority - 33 (73.3%) out of 45 patients. However, it should be noted that even in cases of purulent EP, the temperature did not rise above 38°C in a significant number of patients - in 134 (62.3%) out of 215 cases. Among this category of patients, febrile temperature was observed in 72 (33.5%) individuals. Out of all the patients we observed, only 9 cases exhibited a fever exceeding 39°C, and all of them belonged to the group with purulent-destructive EP. Subsequently, in the differential diagnosis of serous and purulent-destructive processes in EP, it is necessary to examine the local status, specifically the inspection and palpation of the scrotum.

When determining the local status of our patients, the main findings were primarily an enlargement (often asymmetric) and edema of the scrotum, erythema, and hyperthermia of the scrotal skin.

When analyzing the parameters of urinalysis (UA) and Stamey-Mears test, it is noteworthy that in patients with a serous course, leukocyturia was observed in almost 86.7% of cases, whereas in the group with a purulent course, this indicator was higher, reaching almost 89.3%.

Figure 4

Analysis of the Stamey test depending on the stage of EP.



Upon further specifying the localization of the pathological process (Figure 4), in the first portion, the leukocyte count ranged from 500 to 77,500/ml and averaged 10,750 for serous and 14,650 for purulent cases, respectively ($p=0.077$). In the second portion, it ranged from 1,000 to 76,250/ml, with an average of 10,500 for serous and 15,650 for purulent cases ($p=0.001$). The third portion had leukocyte counts ranging from 2,000 to 277,000/ml, averaging 13,500 for serous and 23,750 for purulent cases ($p=0.001$).

Analyzing our data, it can be stated that, firstly, the stage of the inflammatory process influenced the level of leukocytes in the urine, and secondly, the increase in the number of leukocytes primarily in the third portion indicates the localization of the inflammatory process in the prostate. This was confirmed by microscopic examination of prostate secretions. Bacteriological Examination of Urine.

Conclusion:

Based on the findings of our retrospective study, the following conclusions can be drawn. Elderly patients (aged 65 and above) exhibited a higher incidence of pyuria, and multivariate analysis revealed a significant correlation between pyuria and symptoms related to epididymal inflammation, including fever, in more than 250 cases of epididymitis. These results emphasize the need for age-specific considerations in the diagnosis and treatment of epididymal inflammation and may warrant further clinical trials to develop management guidelines for such cases.

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