Date: 29th January-2026

RENAL TUMORS: MODERN APPROACHES TO DIAGNOSIS AND TREATMENT

Achilov Mirzakarim Temirovich., Eshonkulov Idris Egamnazarovich
Xusanov Dilshod Oblakulovich ., Ruziev Murodjon Asliddinovich .

Abstract: Renal tumors represent one of the most pressing problems in modern urology and oncourology. In recent years, the improvement of instrumental diagnostic methods, the widespread use of imaging techniques, and advances in surgical technologies have significantly expanded the possibilities for early detection and effective treatment of this pathology. This scientific study analyzes the clinical course of renal tumors, diagnostic approaches, criteria for selecting treatment strategies, and the effectiveness of surgical interventions in affected patients. The results of the study demonstrate that an individualized approach to choosing the optimal treatment method improves long-term outcomes and prognosis in patients with renal tumors.

Keywords: renal tumors, oncourology, diagnostics, surgical treatment, prognosis.

INTRODUCTION

Renal tumors occupy an important place among diseases of the urinary system due to their significant clinical and prognostic impact. This pathology is often characterized by a prolonged asymptomatic course, delayed manifestation of clinical signs, and frequent incidental detection. Over the past decades, the widespread use of ultrasonography, computed tomography, and magnetic resonance imaging has led to a significant increase in the early detection of renal tumors.Tumors developing in renal tissue differ in their morphological and biological characteristics, which results in substantial variability in clinical course, growth rate, and response to treatment. Therefore, a unified standard approach to the diagnosis and treatment of renal tumors is insufficient, and clinical decision-making must be based on an individualized assessment of each patient.The relevance of this study is determined by the need for a comprehensive evaluation of modern diagnostic capabilities, consideration of clinical and instrumental factors in selecting treatment strategies, and scientific justification of surgical treatment outcomes in patients with renal tumors.

Aim of the study — to scientifically assess the effectiveness of diagnostic and treatment approaches in patients with renal tumors.

MATERIALS AND METHODS. The study was conducted using a retrospective and prospective design. Clinical data of patients with a confirmed diagnosis of renal tumors who were treated in an inpatient setting were included in the analysis. All patients underwent comprehensive clinical examination, laboratory testing, and modern instrumental diagnostic investigations.The choice of surgical treatment was based on tumor size, localization, renal functional status, and the patient's general somatic condition. In the postoperative period, patients were followed dynamically, and complications as well as long-term outcomes were analyzed. The obtained results were processed using statistical methods, and the level of significance was assessed.

RESULTS AND DISCUSSION

The results of the conducted study demonstrated that in the majority of patients with renal tumors, the disease progressed silently over a long period without pronounced clinical symptoms. At the time of initial presentation, most patients were in satisfactory general condition, while pain syndrome, hematuria, and signs of general intoxication were minimal or absent. Consequently, renal tumors were frequently detected incidentally during instrumental examinations performed for other medical reasons. The findings showed that ultrasonography was effective as an initial screening tool for detecting space-occupying lesions in the kidney; however, it was insufficient for accurate assessment of tumor boundaries, structural characteristics, and relationships with surrounding tissues. In this regard, contrast-enhanced computed tomography proved to be the leading diagnostic modality throughout the study. CT allowed precise evaluation of tumor size, localization, and its relationship with the renal sinus and major vascular structures, thereby facilitating appropriate treatment planning. Data obtained from instrumental examinations played a critical role in surgical decision-making. The type and extent of surgical intervention were selected based on an individualized approach, taking into account patient age, general somatic condition, renal functional parameters, and anatomical tumor location. The results indicated that individualized surgical strategies significantly reduced the incidence of postoperative complications. In the postoperative period, most patients demonstrated stabilization of their clinical condition, normalization of laboratory parameters during follow-up, and preservation of renal function. Particularly in patients undergoing kidney-preserving surgical approaches, improvements in quality-of-life indicators, faster rehabilitation, and shorter hospital stays were observed. Comparison of the obtained results with data from contemporary scientific literature confirms the decisive role of imaging diagnostic methods—especially contrast-enhanced computed tomography—in the early detection of renal tumors. Moreover, the advantages of individualized treatment strategies over standardized approaches were clearly demonstrated. Such strategies not only reduce surgical risks but also contribute to improved long-term outcomes. Thus, the results of this study provide scientific justification for the priority of a comprehensive diagnostic approach and individualized surgical tactics in the management of patients with renal tumors. The implementation of this approach in clinical practice can improve treatment effectiveness and enhance patients' quality of life.

CONCLUSION. The results of the conducted study indicate that renal tumors remain a complex and multifaceted clinical challenge in modern urology and oncourology. In most cases, the disease progresses with minimal or absent clinical manifestations in the early stages, which complicates early diagnosis and often leads to incidental detection during instrumental examinations. This underscores the growing importance of modern imaging diagnostic methods in the detection of renal tumors. The study findings confirm that instrumental diagnostics, particularly contrast-enhanced computed tomography, play a decisive role in accurately assessing tumor size, localization, and its relationship with surrounding tissues. These data enable optimal selection of treatment strategies, determination of the appropriate extent of surgical intervention, and minimization of operative risks. Surgical outcomes demonstrate that an individualized approach tailored to each clinical case is the most effective strategy. Selection of surgical tactics based on anatomical tumor characteristics, renal functional status, and the patient's general condition reduces postoperative complications, preserves renal function, and accelerates rehabilitation. This ultimately leads to improved quality of life and better long-term prognosis. In conclusion, the application of a comprehensive diagnostic approach and individualized treatment strategy in patients with renal tumors is scientifically and clinically justified. The obtained results can be implemented in practical healthcare settings, particularly in urology and oncourology departments, to enhance treatment effectiveness and improve patient outcomes.