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BASIC ETIOPATHOGENESIS AND TREATMENT METHODS OF RENAL ABSCESS

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Annotation: A kidney abscess may be located in the cerebral (corticomedullary abscess) or cortical layer of the organ (carbuncle, cortical abscess). The frequency of renal abscesses is 0.2% of all intraperitoneal purulent-destructive neoplasms. The appearance of a purulent focus in the cerebral layer is equally susceptible to persons of any gender and age. The mortality rate is about 12%, but with delayed diagnosis it is higher. Cortical kidney abscess is mainly encountered by men (75%), it is the result of hematogenic spread of microorganisms from the primary extrarenal bacterial focus. A corticomedullary abscess forms with an ascending infection.

Key words: kidney, renal system, corticomedullar.

Reasons

The main cause of a renal abscess is the proliferation of microbial flora in the urinary tract or the penetration of pathogens into the kidney with blood flow. Gram-negative intestinal bacteria, Staphylococcus aureus, klebsiella, proteus, and polymicrobial infection are usually detected in crops. The disease develops against the background of immunosuppression of any genesis. Conditions that lead to the formation of renal abscesses:

Recurrent MVP infections. About 66% of patients with renal corticomedullary abscess have a history of recurrent urinary tract infection. Bacterial pathogens that cause cystitis and prostatitis ascend in an ascending way and affect the cerebral layer of the kidney. Subsequently, the renal parenchyma melts and spreads to the cortical layer. In pregnant women, the purulent-destructive process in the kidneys usually develops against the background of gestational pyelonephritis.

Kidney stones. Approximately 30% of the kidney abscess is caused by nephrolithiasis. Polymicrobial associations are often present in these patients, which increases the likelihood of bacterial contamination with a purulent destructive process. With the independent discharge of the concretion with a violation of urodynamics, a renal abscess develops.

Injury. Urological manipulations (ureteroscopy, stenting, lithotripsy) sometimes lead to injury of the ureter. In 2/3 of the patients, there is a history of connection with medical procedures. Cases are described when a kidney abscess formed after a bruise of the lumbar region, a penetrating wound, as a complication of performed surgical interventions on the kidney.

Developmental abnormalities. With vesicourethral reflux, obstruction of the pelvic ureteral junction, ureteral strictures, the risk of ascending infection of the urinary tract increases, which is facilitated by impaired detrusor function, congenital trigonal weakness, doubling of the ureters, infravesical obstruction, neurogenic bladder. In these conditions, pyelonephritis often develops, which is complicated by a kidney abscess.

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Pathogenesis

Microbial flora enters the kidney in a hematogenic or ascending way. As a result of the inflammatory reaction, the production of neutrophils, macrophages and other phagocytes increases. The reactive invasion of immune cells into a pathological focus is accompanied by massive necrotization of tissues with the formation of pus and further penetration of pathogens into the bloodstream (urosepsis). The body's protective reactions to invasion include the deposition of fibrin to separate healthy tissues from spreading microbes (pseudocapsule). After drainage of the abscess, fibrosis processes are triggered naturally or surgically with the prevalence of scar tissue and loss of functional parenchyma.

Symptoms of a kidney abscess

Clinical manifestations include an increase in temperature to 39-40 °With chills, lower back pain, nausea, weakness. Some patients complain of frequent urination with signs of discomfort. The brightness of the symptoms is variable, in the elderly or senile age, the pathological process may have atypical symptoms - limited to weakness, diffuse abdominal pain.

Nonspecific general manifestations (fatigue, weight loss) are present in most patients. The severity of the symptoms does not always reflect the severity of the condition. With a latent form or with a chronic course, lower back pain is dull, occurs periodically, there is no pronounced increase in temperature, but subfebrility may be present in the evening hours. Profuse sweating at night is typical.

Complications

A kidney abscess, undiagnosed in time or left without proper treatment, can lead to the development of a number of extremely adverse consequences, in which there is a high risk of death. After an abscess, 40% of patients show impaired renal function, in 10.3% of cases a clinic of bacterio-toxic shock is associated with sepsis, in 6.4% - toxic hepatitis and multiple organ failure.

The pseudocapsule of a cortical abscess, as pus accumulates, can perforate with the spread of infection to the parotid fatty tissue and the development of purulent paranephritis. A corticomedullary abscess may increase to a perinephric abscess involving adjacent organs - the pancreas, intestines. When an abscess breaks into the abdominal cavity, acute peritonitis develops.

Diagnostics

The signs that accompany a kidney abscess are variable and nonspecific, but it is possible to suspect a serious infectious process in the upper urinary tract during a physical examination. A consultation with a urologist is being conducted. The patient's condition, in most cases, is severe, the skin is pale, with perspiration. Tachypnea, palpitations, and a decrease in blood pressure may

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indicate a generalization of the bacterial process - urosepsis.

In persons with poorly developed fatty tissue, during palpation, seals may be felt in the projection of the diseased organ, during examination there is swelling, redness of the skin in the lumbar region on the affected side. Soreness during palpation of the costovertebral angle is another indirect sign of a purulent process in the kidney. To determine the final diagnosis, a clinical and urological examination is performed:

Laboratory diagnostics. Laboratory results are not specific to renal abscess. Inflammatory changes may be present in the urine analysis - leukocytes, protein, bacteria, erythrocytes, a sharp shift of the leukocyte formula to the left, high ESR is characteristic of the general blood test. An increase in the number of rod-nuclear neutrophils indicates a purulent lesion. Urine culture shows an active growth of pathogenic microflora in 75-90% of cases.

Instrumental diagnostics. CT and ultrasound of the kidneys are the main diagnostic methods, but computed tomography has better visualization. The functional ability of the kidneys can be assessed by performing excretory urography (in the absence of renal failure) or using radioisotope scintigraphy.

Differential diagnosis is performed with perinephric abscess, neoplasms (cancer, cyst), xanthogranulomatous pyelonephritis. In children, a similar clinical picture is observed with Wilms tumor. With papillary necrosis, secondary infection of necrotic foci with impending acute obstruction of the urinary tract is often associated. In this case, the final verification is possible after the biopsy is performed.

Treatment of kidney abscess

All patients with kidney abscess are indicated for emergency hospitalization in the urology department. Held:

Drug therapy. With a small kidney abscess, antibiotics with the widest possible spectrum of action are prescribed, after receiving the results of back-sowing, adjustments to the treatment regimen are possible. The duration of therapy in each case is individual, until complete clinical and radiographic resolution of the purulent process. Along with antibiotic therapy, detoxification solutions, plasma are injected, drugs that improve blood circulation, painkillers, vitamins, and cardioprotectors are prescribed.

Surgical intervention. The abscess is opened, emptied, an audit is carried out to remove partitions and adhesions, enzymes and antibiotics are administered. Decapsulation is in progress. Drainage is being installed. Nephrectomy is the surgery of choice if the entire kidney is necrotic.

Prognosis and prevention

The prognosis for life is favorable when the passage of urine is restored and the abscess is resolved, including surgically. Timely and adequate therapy significantly improves the outcome. Conservative management of large kidney abscesses increases the risk of complications by 33%.

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The prognosis is aggravated by concomitant diabetes mellitus, chronic renal failure, a single kidney, old age, immunocompromising conditions.

Prevention implies early initiation of anti-inflammatory antibacterial therapy of the inflammatory process in the urogenital tract, timely seeking help from specialists. Patients with chronic urological diseases with a tendency to relapse need to monitor urine and blood tests in autumn and spring, undergo ultrasound diagnostics, take uroseptics, herbal diuretics for preventive purposes.

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