COMPARATIVE ANALYSIS OF IMAGING METHODS IN INFLAMMATORY RENAL PATHOLOGIES

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Background. Urinary infections are common, especially in women (50–60% will have at least one episode in life). Acute pyelonephritis is severe and can cause abscess, infarction, or sepsis, with significant risks for kidney health. Interstitial nephritis causes 15–20% of AKI cases. Early diagnosis is essential.
Objective(s). The study compares the effectiveness of ultrasound, CT, and MRI in diagnosing pyelonephritis and interstitial nephritis, highlighting the sensitivity and clinical applicability of each method.
Materials and methods. This paper analyzes 7 clinical studies from 2009–2023, including 814 patients with acute and chronic pyelonephritis, and interstitial nephritis. Imaging methods evaluated were ultrasound, CEUS, CT, and MRI, focusing on their sensitivity, specificity, and applicability in detecting complex and significant renal inflammatory lesions.
Results. Acute pyelonephritis: B-mode ultrasound has modest sensitivity (50–75%) and moderate specificity. Doppler increases sensitivity up to ~89%, but specificity is low. CEUS offers 95–98% sensitivity and 100% specificity. Contrast-enhanced CT is the gold standard for complicated APN (80–90%), detecting complications. MRI has similar sensitivities to CT (~89%) but is clinically limited. Chronic pyelonephritis: CT reveals scars and atrophy; MRI shows lesions without radiation. Ultrasound shows small, irregular kidneys but not scars. Acute interstitial nephritis: Imaging diagnosis is difficult. Biopsy remains the gold standard.
Conclusion(s). Each imaging method has advantages and limitations in assessing renal inflammation. Ultrasound is accessible and radiation-free, recommended first, but has limited detection of subtle lesions. CT and MRI are sensitive, but CT involves radiation. CEUS is accurate for focal lesions.
Keywords: chronic pyelonephritis, renal imaging, interstitial nephritis

ECHOCARDIOGRAPHY IN THE LONG-TERM FOLLOW-UP OF A MECHANICAL AORTIC PROSTHESIS – A CLINICAL CASE WITH ASSOCIATED VALVULAR DISEASE

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Background. Patients with mechanical aortic valve prostheses generally have a favorable long-term prognosis. The progressive development of valvular dysfunction and pulmonary hypertension may adversely affect prognosis and quality of life, underscoring the importance of regular monitoring for optimal management.
Objective(s). This case report presents the 10-year long-term evolution of a mechanical aortic prosthesis and the impact of valvular complications on the patient's overall clinical status.
Materials and methods. A 79-year-old female patient was admitted to the Cardiac Rehabilitation Department of SCM "Sfânta Treime." Clinical and paraclinical data and history were obtained from the medical record. The patient was evaluated by echocardiography, electrocardiography, chest radiography, abdominal ultrasound, and routine biochemical and hematological tests.
Results. The patient presented with dyspnea on minimal exertion, palpitations, fatigue.