Perspective

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Interventional CKD Management: Expanding Therapeutic Options in Chronic Kidney Disease

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Introduction

Chronic kidney disease (CKD) is a progressive condition associated with significant morbidity, mortality, and healthcare burden. While medical therapy and lifestyle modification remain the foundation of CKD care, interventional approaches have gained increasing importance in managing complications and slowing disease progression. Interventional CKD management integrates image-guided, minimally invasive procedures to address vascular, structural, and access-related issues that contribute to declining renal function and poor clinical outcomes [1,2]. These interventions are particularly valuable in patients with advanced disease or complex comorbidities.

Discussion

Interventional strategies in CKD focus on preserving kidney function, managing complications, and preparing patients for renal replacement therapy. Image-guided renal biopsy is a key diagnostic intervention, enabling accurate identification of underlying renal pathology and guiding targeted treatment. Ultrasound guidance has improved biopsy safety and diagnostic yield, making it an essential component of CKD evaluation [3-5].

Vascular interventions play a central role in selected CKD patients. Renal angioplasty and stenting may be beneficial in carefully chosen individuals with renovascular disease contributing to resistant hypertension or progressive renal dysfunction. Endovascular embolization is used to manage renal tumors, vascular malformations, or persistent bleeding, allowing effective treatment while preserving renal parenchyma.

Dialysis access planning and maintenance are critical aspects of interventional CKD management. Early creation of arteriovenous fistulas, endovascular access repair, and thrombectomy procedures help ensure timely and durable access for hemodialysis. Image-guided placement of tunneled dialysis catheters provides safe temporary access when needed, reducing reliance on emergent procedures.

Interventional techniques also address complications associated with advanced CKD, such as central venous stenosis, access-related aneurysms, and volume overload through targeted vascular procedures. The use of contrast-sparing techniques and ultrasound-based guidance is especially important in this population to minimize further renal injury.

Successful interventional CKD management requires close collaboration between nephrologists, interventional specialists, surgeons, and dialysis teams. Appropriate patient selection, careful procedural planning, and longitudinal follow-up are essential to maximize benefit and minimize risk.

Conclusion

In summary, interventional approaches have become an integral component of comprehensive chronic kidney disease management, complementing medical therapy and

lifestyle measures. By employing minimally invasive, image-guided techniques, clinicians can diagnose underlying renal pathology, optimize vascular health, and ensure reliable dialysis access, all while minimizing additional renal injury. Renal biopsies provide precise histologic information to guide targeted treatment, while endovascular procedures—including angioplasty, stenting, embolization, and thrombectomy—address vascular complications that can accelerate kidney decline or compromise hemodialysis efficacy.

References

1. Themes UFO (2017) Parasitic Diseases of the Central Nervous System. Radiology Key.
2. Dhar A, Dua S, Singh H (2021) Isolated Intramedullary Lumbar Spine Neurocysticercosis: A Rare Occurrence and Review of Literature. Surg J Dec 15: e327- 336.
3. 3.Carydakis C, Baulac M, Laplane D, Schuller E, Philippon J (1984) [Pure spinal cysticercosis. Note on the cerebrospinal fluid]. Rev Neurol 140 :590-593.
4. Izci Y, Moftakhar R, Salamat MS, Baskaya MK (2008) Spinal intramedullary cysticercosis of the conus medullaris. WMJ 107 :37-39.
5. Parmar H, Shah J, Patwardhan V, Patankar T, Patkar D, Muzumdar D (2001) MR imaging in intramedullary cysticercosis. Neuroradiology 43:961-967.